Music as metaphor and mediator: creating an integrative paradigm for education

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Those who know the secret of the sounds
Know the mystery of the whole universe

Hazrat Inayat Khan
Abstract

The purpose of this thesis is to create an integrative paradigm for education based on music as metaphor and mediator. It proposes a meta-frame of inquiry to establish a meta-contextual perspective from within which a self-reflexive reframing process is expected to emerge. A system of ideas is presented, consisting of key concepts drawn mainly from the systems worldview and speculative musicology. From these, metaphoric maps are devised as a guide for mediating the proposed ideas in education contexts. It is an attempt to inspire metaphoric, aesthetic and intuitive modes of understanding and experiencing the world, along with the explanatory, which can affect a profound epistemological shift in the way we frame our inquiry.

The systems worldview adopted in this study draws from the biomatrix systems approach formulated by a study group of co-researchers. The biomatrix approach views life as a complex web or field of purposes-based processes across physical and conceptual reality. These processes interact to become focalised manifestations as recognisable forms and structures, thus presenting a dual complementary systems matrix analogous to the wave-particle duality in physics. It introduces the notion of a wave-like systems perspective as abstracted multi-layered and multidimensional meta-patterns of continuity underlying the whole of life. This dual complementary systems approach presents a radical departure from conventional systems perspectives in which the observer is usually guided by discrete entities, or wholes, followed by the study of their interactive parts and processes.

The notion of an underlying web of waves resonates with the ancient speculative music view of the world based on the Pythagorean-Platonic doctrine of the music of the spheres in which the whole universe is created and organised according to the principles of music. Whereas in earlier eras, music was depicted as an inherent expression of universal harmony, it has in our time, in Western culture, become abstracted as absolute or autonomous music with an objective existence. The metaphor of universal harmony is thus revived in this study on the basis of its original intent, founded on account of seeking mediated knowledge of the universe, that is, as a reflective and participative frame of mind rather than a separate body of knowledge.

While the respective concepts of the participating philosophies and theories are not original in themselves, it is the way in which they have been integrated into a coherent system of inquiry that is a novel contribution of this study and which, if accepted, can have far-reaching implications for education. For example, by mapping the metaphoric system of ideas into a music cosmology of the self, since the speculative music tradition considers the self a replica of the musical world creation, a conceptual shift is made by spanning the learning environment across three domains. They are: the inner self, as ways of knowing; the outer self, as ways of relating to the world; and the emergence of a central sense of self, as ways of being and becoming, not acknowledged in other systems views. The whole self becomes generically constituted across the physical, emotional, mental and spiritual aspects of life, forming a
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A reciprocal link between the individual and universal, enlivening the connection between learner and learning. A systems epistemology based on metaphors and aesthetics achieves a recursive relationship of patterns of organisation between the abstract systems we create and the way we describe our experiences that engenders a more encompassing view of the world.

Although the systems and speculative music views have formed part of long-term work-related interests by the researcher, the need for an integrative framework was strengthened during personal work contexts conducted during the first decade of South Africa's democracy, pertaining particularly to music and the arts and their relationship to education in general. Consequently, insights noted during a documented fieldwork journey consisting of inter-related education development projects and affiliated activities initiated by the researcher, resulted in ongoing meta-contextual reflections of higher-order abstraction alongside ongoing activities. The meta-frame is an outcome of the search for conceptual organisation and should not be regarded as a design and application mode of research, since the theoretical and practical contributions recursively informed and co-created one another. As such it provides a means for gaining insight and understanding, such as the complementary synergy between Western scientific methods and African perspectives that draw from an integrative musical arts milieu.

Therefore, instead of engaging its research process in current conventional debates on education development in policy and practice, this thesis takes cognisance of these factors, but poses its message within a speculative approach albeit with practical potential. It invites the reader to consider a transcendent and ideal perspective, which holds possibilities for embodying its principles in the everyday life of education. Its methodology is positioned within qualitative research, more specifically new paradigm research, and the proposed integrative meta-frame becomes the central theoretical thesis of the study, which it strives to present in a logically consistent, conceptually coherent and contextually congruent way. While influenced by the circumstances of the South African situation, it holds universal appeal in that ultimately, it hopes to contribute to a more unifying and holistic perception of the world in which we live.

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Part A: Introduction

Part A serves as an introduction to the study, which explores the creation of an integrative paradigm for education with music as metaphor and mediator. It states the central theoretical thesis of the inquiry, the chosen research paradigm within which the investigation resides as well as the research design and methodology of different contributing aspects of the study. The context within which the research concerns were motivated and originated is sketched, along with a closing section relaying the conceptual organisation and presentation format that sets the tone for the whole document.

Framing the research question. Amongst emerging metaphors of consciousness (Valle & Von Eckartsberg 1989), Romanyshyn (Romanyshyn 1989) shares an imaginary scenario recounted as a story from the philosophy of science in Hanson (Hanson 1972). In this scenario the astronomers Johannes Kepler and Tycho Brahe, at the start of the scientific revolution in the 1600s, are standing on an early morning hillside awaiting dawn. When the moment finally arrives, they both turn towards the east and, looking in the same direction, they see the same picture, namely the increasing distance between the horizon and the sun. Yet, while it is the same event, each sees a different reality. They live in different worlds. Kepler, who already lives in a Copernican universe, sees a moving earth. Brahe, who lives in a Ptolemaic universe, sees a rising sun. What each of them is experiencing is inextricably linked to their worldview. Does the earth move? Or does the sun rise and set? These questions are not initially framed for an empirical response because originally they engage a metaphorical vision. The empirical pursuit first relies upon the metaphorical perspective within which it is to be situated (Romanyshyn 1989).

While the scientific view with its methods of inquiry has brought humankind great clarity and advances in its cosmological journey, it has changed the landscape of the Western mind. We shape the worldviews by which we live. The return from a divide between mind and world to holistic and unifying metaphors may again require a paradigm shift that resembles the impact of the change from a geocentric to a heliocentric worldview. Systems theorist Gregory Bateson reminds us that, in formulating our search for an integrated worldview, our questions are located within old fragmented mindsets and, to formulate a question well, already implies the wisdom of its answer (Bateson 1991). So, at most, this thesis elaborates on its quest to derive the appropriate research question embedded in its title which emerges as the central theoretical thesis of the inquiry, the purpose of which is not so much to find affirmations as to open the mind to consider possibilities for achieving such a unified view (Reason & Rowan 1981a).
1. Introduction and research methodology

This chapter serves as an introduction to the study as a whole. It states the central theoretical thesis of the inquiry together with its research methodology and context, and sets the tone for the conceptual organisation and presentation format of the document.

1.1 Context of the study

Ever since the first democratically elected South African government took office in 1994, educators have been encouraged to acknowledge and welcome the new arena of cultural representation and interaction that the nation had finally attained. While citizens had become alerted to this aspiration in general, it was the field of music, arts and culture that appeared to present the most direct and dynamic way to embrace cultural diversity.

Along with the sense of renewal, however, came the inevitable growing pains of a unifying-diversifying socio-culture seeking appropriate expressions for self and community in its liberation. While attempts were inevitable in this regard, it was noted with some concern that many were conforming to the familiarity of former structures. This perception, informed by my personal involvement in the education development field, indicated that not sufficient epistemological assistance was available to make a conceptual shift to harness the opportunities inherent in the country's new education system. It led to the position held in the present investigation, namely, that a coherent frame of inquiry is needed to provide a unifying base for exploring the emerging complementary dynamics of participating cultural worldviews within the broader context of education. In this respect, music and the arts may have a profound impact on the development of appropriate teaching and learning methodologies that have far wider implications for educating the whole self as well as for education in general, beyond merely accommodating and managing the multiplicity of cultures in the arts curriculum or addressing specialised study in music and the arts.

Hence, this study seeks to explore how music can contribute towards the creation of an integrative paradigm for education in general, and not merely for addressing specialised study in this subject. More specifically, it presents a meta-frame of inquiry depicting music as metaphor and mediator, namely as an epistemological frame of mind rather than a content body of knowledge, within which the research concerns are raised and discussed. Music as metaphor refers to a proposed system of ideas based on key concepts drawn together primarily from the systems worldview and speculative musicology, while music as mediator explores, through its metaphoric maps devised as an epistemological guide, how these key ideas can be enlivened within education concerns. The contemporary systems view deals with complex patterns of inter-connectedness in life and human systems, beyond the former fragmentation of the scientific view which has dominated over the arts,
while ancient speculative musicology honours the metaphysical metaphors of a holistic universal harmony underlying the whole of creation. Engaging metaphoric, aesthetic and intuitive modes of knowing in our systems of inquiry requires that we open our minds as a means of gaining greater insight and understanding rather than merely the explanatory, which can ultimately effect a conceptual shift in the way music and the arts are contextualised within education. The study's quest is supported and co-created by participating practical fieldwork explorations initiated by the author over the period of South Africa's first decade of democracy, namely 1994–2004, from which a unique national cultural identity is emerging.

1.1.1 The principal concerns that prompted the study

The present position of music within the context of education, even though arts and culture has become compulsory as a learning area within the new Revised National Curriculum Statement (RSA 2002), still shows the influence of the former Western-dominated dispensation in that it reflects the general fragmentation of learning and knowledge into separate disciplines and areas of specialisation (Herbst et al. 2005; Klopper 2005; Rijndijk 2003; Hauptfleish 1998; Primos 1997). Within this perspective, music tends to be associated with an exclusive and expensive, often extra-curricular, activity disengaged from the general curriculum. As such, participation in music becomes reserved for those individuals who display a particular talent and who are singled out for specialised instrumental study from an early age, often without a general music foundation. While this system produced some musicians of excellence in the past, it has denied many others direct contact with music-making experience, and isolated music from education in general. Such a position favours education at the service of the specialised music minority and not music at the service of education and life in general, leaving the greater community unaware of and uninvolved in the creative and educational potential of music.

During the early part of the country's transformation process, many initiatives active in the redress of education opportunities to reflect cultural balance, such as the national Arts and Culture Task Group (Actag) and its provincial representative the Western Cape Arts and Culture Task Group (Westag), the National Arts Initiative (NAI) as well as the Human Sciences Research Council's (HSRC) surveys (Actag 1995; Westag 1994; NAI 1993; Hauptfleisch 1993; 1991), revealed this situation to be attributed to the former high arts ideologies that supported Western-based arts education and performing structures, rendering the education models inappropriate for the new multicultural classrooms. Further studies conducted by the author in collaboration with curriculum advisors from the Western Cape Education Department (WCED) at the inception of the personal fieldwork projects

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1 The new Revised National Curriculum Statement (RNCS) presents different learning areas, such as natural sciences, social sciences etc., of which there are eight, instead of the former division into individual subjects of learning. Each learning area becomes responsible for the specification and assessment of learning outcomes for the different grades, formerly known as standards. One such learning area adopts an inclusive approach to the arts by presenting music, visual art, dance-movement and drama collectively under the learning area statement known as arts and culture.
have shown that the circumstances contributing to these conditions in music education reflect multiple and inter-related factors (Muller & Le Roux 1997).

Despite the positive transformations that have been initiated by the democratic national education system, which acknowledges and encourages wider participation of culturally diverse expressions in music and arts, and in which learners “move from being passive inheritors of culture to being active participants in it” (RSA 2002), new initiatives are not readily integrated into the curriculum or the classroom (Enslin & Pendlebury 1998). Many address mainly a change in cultural content with insufficient attention to revised teaching methodology, while most performing activities still remain extra-curricular and dependent on external funding (Joseph 2002; Feenstra 2000). So the situation remains such that, rather than grasping opportunities to adjust more fully to the deeper and inter-related concerns, it tends to perpetuate the conditions described above.

Education development projects related to this study (Muller & Kleinschmidt 2004; Muller 2002; Axelsson et al. 2002; Cowan 2000; Muller & Cowan 2000; Muller et al. 1999) indicate, along with the aforementioned initiatives, that music and arts education is still at the mercy of the pre-1994 worldview and prone to conform to the values of the old system. The compatible synthesis of Western and African ideologies that represent the dynamics of a changing society thus remains under-explored, as do the implications for different learning approaches and teaching methodologies to emerge there from. While the renewed curriculum framework has called for a move away from content-based education to emphasise different ways of learning and knowing (RSA 1996b), the potential for innovative change, not only within music and the arts but across education, remains inhibited in practice due to the system remaining entrenched in and reinforcing old thinking patterns and modes of operating (Jansen & Christie 1999). The former Western-driven education system, while it benefited certain members of the population over others, was aimed at mainstreaming learning and did not necessarily respect individual worldviews or mindsets. Now, with the new dispensation open to all cultures, not only have we become more aware of other ways of viewing the world, but also more sensitive to different values and mindsets residing within individuals regardless of cultural orientation. Yet, while the new education system continues in its efforts to encourage different ways of knowing, we are still witness to the fact that, despite the decade of our existing democracy, “educators don’t know how to get learners to use their knowledge and skills in different ways”.

While South Africa represents many cultures (RSA 2003a), the generalised use of the terms Western and African, which in itself is a complex issue and part of more in-depth discussion in chapters two and nine, refers to their complementary synergy in the systems worldview proposed in the context of this study (Muller 1998a).

An interview conducted by Vuyo Mbuli on national television, on the programme Morning Live, with the current national minister of education Naledi Pandor, on 11 January 2006.
1.1.2 Personal motivation

My involvement in the education development fieldwork journey from 1994–2004 as documented in this study was prompted by a personal need to prepare for the transition process from a dominantly Western-driven world of work, namely as orchestral player with the Cape Performing Arts Board theatre orchestra (Capab) and the Cape Town Symphony Orchestra (CTSO) from 1986–1995 as well as holding lecturing positions in percussion performance at the University of Cape Town and University of Stellenbosch, towards a more culturally interactive environment in the field of music education and performance. Indeed, as a percussionist I had always been drawn to African music performance, an opportunity that was experientially denied in an environment that kept its cultures apart. Not only would it now be possible to participate openly in other cultures’ music, but it also became apparent that revised approaches would be called for to support and represent the diversity of cultural interests, and through which to reflect and integrate different views and generate new methodologies. This realisation and assumption, born out of ongoing interest in systems theory, resulted in a series of brainstorming sessions with systems research colleagues (Dostal 1997) and university percussion students (Muller 1994), leading to the formulation of a vision that resulted in my resignation from these positions to initiate a number of inter-related research and education development projects and affiliated activities (Appendices A, D) motivated through funding proposals (Appendix B) and accompanied by comprehensive documented data sources (Appendix C) and project portfolios (Appendix E), which lasted over the first decade of democracy. They provided an opportunity to explore the changing idioms in co-operation with others in the field where no amount of anticipation could have prepared for the invigoration and reward that came from being in a shared and mutually co-operative developing environment.

These project excursions raised the need to be able to accommodate different cultural views as well as the ability to shift between different ways of experiencing, a prerequisite for juxtaposing scientific Western accounts of the world with animated expressions of the African musical arts milieu in a mutually respected way. Not only did these modalities represent the respective cultural values, but also became direct mediators of changed perceptions. Music presented itself as a powerful medium and metaphor for the comprehension and transfer of this knowledge. These experiences were beginning to reveal a greater but as yet unattainable pattern and led to the need to develop a coherent framework within which to conduct further inquiry into the mediating potential of music on deeper levels of being. The need for a guiding frame to inform and inspire educators to effect their own change and to bring about new insights and understanding in their practice, became the predominant premise as translated in this study, while ongoing personal interest in systems epistemology and speculative musicology accompanied the education development projects. It is my hope and vision that this

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4 The main education development projects and interrelated activities during the period pertaining to this study are discussed in the fieldwork journey chapters namely chapters two, three and four of Part B.
initiative may lead to the re-conceptualisation and reintegration of music, true to the African ideal of ngoma, the musical arts\(^5\) as a whole (Mans 1997; Nketia 1975; Tracey 1948), as an active and essential means of life, education, cultural creativity and personal change.

### 1.2 The purpose and central hypothesis of the inquiry

The central hypothesis being put forward in this document is that music, as metaphor and mediator, can contribute towards creating an integrative paradigm for education. It is the presupposition of our Western culture that descriptions and explanations of reality should be characterised by precision and absence of ambiguity, to which the institution of science corresponds precisely. However, emerging theories of metaphor suggest that different approaches are possible in human inquiry as criteria of meaning intrinsic to our systems of understanding in that metaphor, with its ability to relate across domains of thought, is the main means through which we comprehend abstract concepts (Lakoff & Johnson 1999; Reason 1994; Genter & Jeziorski 1993; Ortony 1993; Valle & Von Eckartsberg 1989; Johnson 1987; Langer 1942), and this includes musical thought (Spitzer 2004; Krantz 1987). An aesthetic view transcends objective explanation and subjective understanding, combining them into an intuitive immediacy (Brown 1977). Metaphor, as an aesthetic experience, enables us to consider the elegant inter-connections and harmonic order underlying the complex world as a recursive vision and holistic framework of inquiry (Harries-Jones 2002).

In this study, metaphor generally refers to the transfer of key ideas across conceptual perspectives, while mediator refers to the means whereby the metaphors can be conceptually mapped within education contexts. In this investigation the metaphor and mediator aspects have continually interacted with one another on a retrospective level of reflection and conceptualisation. From this recursive process a coherent and integrative meta-frame emerged in a qualitative way on a meta-contextual level of inquiry embodying the purpose of the thesis (Mouton 2001; Reason 1994; Reason & Rowan 1981a; Mouton & Marais 1988; Bateson 1985; Keeney 1983). Further elaboration of the terms metaphor and mediator follows in Part C and D, and in chapters seven and eight of this document.

The study as a whole thus embodies the proposition of its purpose, which is an elaborate hypothesis encompassing the development of the meta-frame of inquiry during the research journey. The focus of the inquiry evolved from within a broader context of research concerns. Essentially, the meta-frame is intended for the purpose of exploration and differs from a design applied in practice in order to test a hypothesis (Mouton 2001). In other words, the data derived from the fieldwork provided input to the theoretical perspectives so that they informed each other in a mutually interactive way. This is not equivalent to emergent theory generated from data objectively gathered by a method of constant comparison as found in the grounded theory approach (Strauss & Corbin 1997; Glaser & Strauss.

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\(^5\) The organisation Pasmae, the Pan African Society for the Musical Arts in Africa, changed its name to include the musical arts in 2001 to accommodate this ideal. Refer to <http://www.pasmae.org>.
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1967) or in the phenomenological approach in which one starts with the concrete and existentially given realities and reflect on the way they are being constituted in our consciousness (Husserl 1962). Nor is it solely based on objective participant observation perspectives and methods (Reinharz 1979). The study follows the principles of new paradigm research (Reason & Rowan 1981a), which are invested in subjective and exploratory qualitative research methodology and human inquiry (see section 1.3) and the notion of a meta-frame is discussed in relation to the research design and methodology of the chosen paradigm (see section 1.4). The principal purpose of the meta-frame is in providing the impetus for opening minds, to inspire and enable practitioners, educators and researchers in gaining new insights in their work contexts. It also hopes to initiate debate in the field which can be taken up for further elucidation of its theoretical concepts and from which inquirers can develop their own methods in practice. As such the study focuses on providing an epistemological guide with implications for exploring different methods in education that include the nature of the inquiry process itself as a mode of human endeavour rather than the formalisation of a design (Reason & Rowan 1981a, Reason 1988a).

While remaining cognisant of the existing problems or concerns in the field of education, the study does not intend to respond to them directly on the level on which they reside. In short, the problems related to the field under review do not become the problems of the study, since the logic of the problem is not necessarily the logic of the solution, which is a systems concept of higher order logic (Dostal 1997). Instead, the study strives to reach beyond the discipline within which music is normally considered, to conceptualise a novel approach for music within education. In so doing, it is not unlikely that the proposition being put forward in this study may ultimately transcend the problems of the existing situation (Cloete 1999; Banathy 1994; Ackoff 1974). However, it is the awareness of these problems that inspired the vision underlying the study “in the creation of novel, innovative viewpoints” (Reason 1981a:44) rendering it a visionary, creative and innovative type of research process that emphasises new purposes rather than addressing old problems. By adopting an affinity with purposeful systems (Ackoff & Emery 1972), and by envisioning new purposes, one challenges existing assumptions and restrictions (Banathy & Jenlink 2000; Banathy 1994). This systems mode of inquiry transcends the current state by embracing a vision which guides the researcher beyond what is known into a deeper understanding of reality (Dostal et al. 2004; Harman 2000; Reason 1981a).

Often, we turn to metaphors and stories to encourage us in our excursions into the search for meaningful meta-patterns of existence on higher orders of recursion that may ultimately lead to a greater understanding of the system under investigation (Banathy & Jenlink 2000; Banathy 1994; Bateson 1985; Keeney 1983). Scientific inquiry deals with explanations: “[p]roblems arise when a hypothesis successfully works (i.e., it is empirically, logically, or pragmatically confirmed) and is then held to be a piece of solid, ontological reality” (Keeney 1983:107). Systems epistemology, on the other hand, redirects our view towards the nature of our inquiry and the way we frame our experience of the
world as "a process of knowing, constructing, and maintaining a world of experience" (Keeney 1983:108). A participative co-creation of the world restores holistic systems of knowing (Reason 1994) that honour the aesthetic and metaphoric from which "higher order organisational patterns" emerge on a meta-contextual level of recursion (Keeney 1983:43). Artistic and aesthetic metaphors imply that, "instead of reproducing an external, pre-existing reality, the role of art is to make available new ways of ‘constituting our sense of reality’" (Cook 2000:76). Aesthetic values are closely linked to the artistic but should not be used interchangeably (Mans 2005; Swanwick 1994). Generally, music aesthetics relies on its earlier Greek definition, namely that of drawing a relationship between the senses and the intellect (Apel 1970). Metaphor, liberated from its former romantic poetic rhetoric contexts, has been reclaimed in the 1980s as the basis of abstract thought and embodied experience of the world, liberating music and the arts into their rightful ownership as valid contributors to conscious knowing (Bresler 2004a; Spitzer 2004; Lakoff & Johnson 1999, 1980; Ortony 1993; Valle & Von Eckartsberg 1989; Johnson 1987).

The purpose of the study and central hypothesis of the investigation is thus the creation of an integrative paradigm. The meaning of the hypothesis resides in the delimitation of its associated theoretical concepts and the way in which the participating themes are organised and contextualised into a coherent meta-frame of inquiry which includes the recursive reflections and participative reflexive relationships and interaction within fieldwork contexts (Davidson 2004b; Alvesson & Sköldberg 2000; Mouton & Marais 1988). In terms of the fieldwork component, its merit lies not in the quantifiable accountability of its outcomes per se, but in its ability to support and be consistent with an abstracted level of logic, that is, not on the level of the problem, but of "a higher order distinction" resulting in "a higher order abstraction" than originally perceived (Keeney 1983:38–39). In so doing, we "achieve a recursive validity" that yields "a deeper and more extensive truth" (Rowan 1981a:105). The basis on which the study’s worth is assessed should be the ability to present its hypothesis in a way that is logically consistent within itself and contextually congruent with other theories and studies in relation to the field (Reason 1981b).

1.3 Research paradigm

The research approach and methodology adopted in this study are positioned within the field of qualitative research (Denzin & Lincoln 2000; Rossman & Rallis 1998; Patton 1990; Mouton & Marais 1988) consistent with new paradigm research (Reason & Rowan 1981a), which forms part of post-modern inquiry methods that recognise the role of intuition and the subjective nature of the researcher (De Paul & Ramsey 1998; Rosenau 1992), as well as those perspectives that depart from the historical positivist analytical procedures in musicology (Cook & Everist 1999; Kerman 1985). A research paradigm describes the principles that research scholars adopt and on which they base their approaches. In this study, the principal philosophical ideas in support of the chosen paradigm of study
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have been discussed within an inter-disciplinary doctoral research group in systems theory based at the University of Cape Town consisting of G. Járos, A. Cloete, E. Dostal, L. Edwards and L. Muller (Appendix F), and drawn together from former documented doctoral studies completed under the guidance of G. Járos (Cloete 1999; Dostal 1997; Edwards 1996). The principal ideas are integrated and summarised under the sub-headings that follow, namely, different modes of scientific inquiry, and principles of new paradigm research.

1.3.1 Different modes of scientific inquiry

Proponents of new paradigm research have distinguished two fundamentally different research paradigms underlying scientific research methods (Reason 1981a; Mitroff & Kilmann 1978), namely:

- Conventional norms of science, e.g. faith in rationality, emotional neutrality, impartiality, suspension of judgement and absence of bias;
- Counter norms of science, e.g. faith in rationality and non-rationality, emotional commitment, partiality, exercise of judgement and presence of bias.

Mitroff and Kilmann developed their model on the different ways scientists think about science, based on the psychological types proposed by C. G. Jung (Reason 1981a; Mitroff & Kilmann 1978; Jung 1971). There are four modes derived from two independent dimensions. The first dimension concerns the kind of input data the individual characteristically prefers i.e., the informational dimension, and the second indicates the preferred way of dealing with the information, i.e., the decision-making dimension. The two dimensions are independent and are represented by two orthogonal axes in a plane (Figure 1.1).

![Figure 1.1 A typology of scientists adapted from Mitroff and Kilmann](image)

Concerning the information axis, it is assumed that individuals can obtain information from two sources, viz. internal sources, through intuition, and external sources, through sensation. It is also

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6 While the authors Mitroff and Kilmann have argued that there is a crisis regarding the scientific view in general (including all sciences), which "is in serious need of methodological and epistemological reform", science in this context refers to the human sciences as pertaining to social science research methodology (Mitroff & Kilmann 1978:3).
assumed that these two modes of obtaining information are complementary. Those who prefer to take in information through the senses are interested in details and the specifics of a situation; they prefer hard, realistic facts and pay attention to the practical. By contrast, those who prefer to take in information through their imagination are interested in the whole, being the idealists interested in hypothetical possibilities, in what might be, in the creation of novel, innovative viewpoints.

On the decision-making dimension can be found two antithetical possibilities: on the one hand, thinking, and on the other, feeling. Individuals who prefer thinking use reasoning which is impersonal, formal, or theoretical; they are interested in abstract generalisations. On the other hand, those who prefer the feeling mode are interested in reaching personal value judgements which may be unique to the individual; they explain via empathy, and value things in human terms. A juxtaposition of these modes gives rise to four different quadrants, each representing a different mode of inquiry. In reality, all four modes are represented within an individual, perhaps with some dominance in a particular mode over others, which may change over time.

The four modes, according to Mitroff and Kilmann, can be summarised as follows:

**Analytical scientist** (sensing/thinking mode). The aim of the analytical scientist is accuracy, certainty and reliability. The style of inquiry is the controlled experiment and the orientation towards science is impersonal, theoretical and unambiguous. Any endeavour that cannot be subjected to this approach, is suppressed, devalued or set aside as not worth knowing or capable of being known.

**Conceptual theorist** (intuitive/thinking mode). The conceptual theorist shares the impersonal and theoretical orientation towards science with the previous category. However, whereas the analytical scientist is concerned with accuracy and certainty, the conceptual theorist is concerned with imaginative and speculative theory building. The aim is to construct the broadest possible conceptual schemes, with the emphasis not necessarily on truth, but on arriving at an interesting theory that may lead to further exploration. The style of inquiry is that of exploring, creating and inventing multiple possible representations of the world.

**Conceptual humanist** (intuitive/feeling mode). This approach concerns passionate and personal knowledge. The goal is to develop a science that will further the development of human growth, awareness and personal welfare. Emotions, personal knowledge and values are accepted and acknowledged in the inquiry.

**Particular humanists** (sensing/feeling mode). The orientation of the particular humanist is similar to the conceptual humanist, but differs in that the focus is on the unique individual person. The individual case study is the preferred mode of inquiry, i.e. the in-depth detailed study of a particular individual.

The conventional scientific paradigm departs predominantly from the analytical scientist mode of inquiry, whereas the other modes can be accessed within the realm of new paradigm research.
addressing multi-faceted issues, it is not advisable to limit one's thinking to one particular mode in the extreme, but to open up to other ways of thinking and acting, and preferably to utilise a combination of different modes for each task. Reason, in support of this model for new paradigm research, emphasises the attempt by Mitroff and Kilmann to show that "there is an inter-dependence between the four styles of doing science" and researchers are reminded that "they are inter-related aspects of a systemic view of knowledge, which must co-exist within the institute of science", so that "we must learn to see and appreciate the contributions of others working in different styles" and not to become absorbed exclusively in our own approach (Reason 1981a:51).

Although the development of the coherent meta-frame of inquiry central to this study is mostly consistent with the conceptualist theorist style of research, the personal and field contexts within which it developed in practice draw strongly from the conceptual humanist in interaction with the particular humanist modes of inquiry. All information has been documented and in turn reflected back through the analytical scientist mode to align with supporting theoretical concepts. It therefore aims to represent a multi-modal and novel approach to research inquiry, while also importing the underlying premise of the modes into the conceptual development of the proposed meta-frame.

1.3.2 Principles of new paradigm research

Some of the principles adopted by new paradigm research that contribute to a shift from conventional scientific modes, as used throughout this study, are summarised below:

**Critical subjectivity and co-operative inquiry.** New paradigm research acknowledges the role of subjectivity in inquiry (Heron 1988; Reason 1988c; Rowan 1981b). Post-modern methodology represents a shift from objective consciousness to critical subjectivity (Rosenau 1992). In this shift one goes beyond the split between subjective and objective to a quality of awareness that does not suppress the primary subjective experience, nor allows one to become swept away by it. Rather, it is raised to conscious awareness and used as part of the inquiry process. On the one hand, critical subjectivity recognises that "observations are not absolute but relative to an observer's point of view" and "observations affect the observed so as to obliterate the observer's hope for prediction" (Bateson 1972:1). On the other hand, the role of the subjective describer of an apparently objective universe also needs to be recognised: "what we need now is the description of the 'describer' or, in other words, we need a theory of the observer" (Bateson 1972:1).

This refers to the fundamental epistemological issue that perception is a product of the functioning of the nervous system of the observer, triggered by external reality (McTaggart 2003; Thompson 2001; Varela 2000; Varela & Shear 2000a, 2000b; Lakoff & Johnson 1999; Tarnas 1996; Wallace 1993; Varela et al. 1993; Piibram 1989; Maturana & Varela 1992). It is believed that the mind does not passively receive information but actively and creatively co-structures it, and that it would not be possible to make a description if the observer did not have the properties that allowed one to generate
such a description (Keeney 1983). Heron suggests that in our research with others, one must appreciate that "my considered view of your reality without consulting you is a very different matter from our considered view of our reality" (Heron 1981b:27). It is important to consider the dialectical relationships between concepts when interpreting the meaning of research findings in that we mean what we say, whatever we think we mean to say (Sabelli & Carlson-Sabelli 1989). This indicates the importance of critical subjectivity since the methods we use to communicate should essentially include critical comment on the personal experiences of the researcher so that unavoidable bias can be seen to contribute to the research process (McNeil 1993a; Reason 1988a; Moustakas 1981).

**Inductive, deductive and abductive research methods.** Conventional scientific inquiry has been active in predominantly deductive approaches, while the need to investigate beyond appearances has given rise to inductive modes of inquiry. Inductive and deductive research methods, however, are not necessarily incompatible, but may actually be complementary, whereby induction informs deduction and vice versa (Sowden and Keeves 1990). Within the new paradigm, induction invariably begins with a researcher's orientating constructs, which are informed by his or her experience and values. These are matched to a body of data, thereby reducing and focusing the appropriate data for collection. Deduction from the gathered data is used to modify and rebuild the original theoretical constructs. Abductive thinking and analogic reasoning modalities have also been proposed as appropriate for incorporating non-linear, associative and metaphorical thinking that facilitates relationships across seemingly disparate phenomena (Bateson 1972). Dealing with "[e]pistemology is inductive and experimental and, like any true science, it is deductive and, above all, *abductive*, seeking to put side by side similar chunks of phenomena" (Bateson 1991:232).

**Heuristic research.** Heuristic research is defined as "a research approach which encourages an individual to discover, and methods which enable him to investigate further by himself" (Moustakas 1981:207). Often such research proceeds without hypotheses, research goals or a research design. Rather, these emerge in the course of other pursuits. Personal experience, intellectual, emotional and spiritual, may be important aspects of heuristic research. Self-exploration is given priority in the initial stages, with literature studies included at a later stage in the process so that the research is not clouded by pre-digested ideas. Validity may occur in the form of feedback from related experiences of others. Self-inquiry and inquiry of the research subjects are inter-related throughout the study, mutually informing each other (Moustakas 1981).

**Recursiveness and self-reference in scientific investigation.** Recursion refers to processes that loop back on themselves to form circular repetitive patterns of organisation that "achieve a recursive validity" (Rowan 1981a:105). The recursion, however, is not a return to the same position, but generally refers to a new beginning on a different level of organisation. For example, recursive inquiry may imply that an intuitive understanding within a field of investigation serves as a basis for logical thinking, which in turn may lead to new insight and an even deeper intuitive understanding. In the
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context of research, recursion includes the detection, description and analysis of underlying patterns of organisation. It also refers to a distinction between different levels of organisation, higher-order feedback (i.e. meta-feedback or feedback about feedback) as well as the observer's observation of the process of observing. This is also known as self-referral or self-referential scientific inquiry in which the research process reflexively informs itself (Keeney 1983).

Holistic and patterned knowing. A pattern of knowing is a web of meaning. Patterns connect all existing things and as such direct the flow of information and organisation in any system (Bateson 1985; Keeney 1983). They describe the inter-relationship of parts that comprise the pattern, and which cannot be understood on their own. Being able to observe pattern networks, or demonstrate connectedness requires a particular way of knowing that draws on synthesised perception, bringing meaning that cannot be derived from reductionist thinking alone (Reason 1981b). Often patterns generate extended patterns filled with more detailed information. The discerning of pattern as an aspect of reality and scientific inquiry is often associated with intuition.

Validity, reliability and relative meaning. The notions of absolute truth and certainty come into question with new paradigm research. Consequently, issues surrounding validity and reliability as used by conventional science are also challenged. Within the context of new paradigm research, Reason refers to validity as soundness of endeavours (Reason 1981c; Reason 1988b; Maslow 1966). Validity in this context is best described through relative meaning in which related concepts inform and enlighten one other (Reason 1988b; Reason 1981a; Reason & Rowan 1981b).

Meaning is essentially derived through the relationships between concepts as they inform each other, whereas validity can be derived in terms of dialectical opposites, logical coherence, practical worth, the evaluation of subjective knowing, consensual validity and triangulation. Validity associated with dialectics refers also to the research process itself, as a process of dialectical engagement with the field of research (Reason 1988a). How we perceptually and conceptually foreground and connect different sources of knowledge in complex linear and non-linear settings, defines our own epistemological premise for deriving meaning (Reason 1981a). Coherence refers to criteria such as the need for conclusions to be consistent, interdependent and mutually illuminating. Furthermore, there needs to be congruence between the propositions asserted by the research and the experiential knowledge of the researcher, as well as agreement amongst participants in the inquiry (Heron 1988).

The practical worth of a theory is indirectly tested through its empirical usefulness (Heron 1988; Reason 1981b). This can be assessed through cyclic feedback interplay processes between the researcher and the subject of research, researcher and research client, research and implementation, and reflection and experience. A mutual coherence needs to be maintained in the balance between
convergent and divergent modes of inquiry, so that synthesis and analysis constantly enhance the practical worth of any theoretical aspect.

Triangulation refers to a method of validation, which relates particular information, facts or punctuation of events about an issue from different perspectives, sources and methods (Denzin 1990). Where a number of sources of evidence point to a common conclusion then one’s confidence in that conclusion is strengthened providing information on reliability and not only validity (Miles & Huberman 1994).

**Participatory knowing and co-operative sharing.** Experiential and participative human inquiry is especially valuable in a culturally interactive development environment of shared knowing where different worldviews participate and complement each other in debate, and which cannot be divorced from ethical and ethnic considerations (Reason 1994; Reason 1988c; Keeney 1983; Torbert 1981). Joint experiential research methods such as participatory research (Reason 1994; Elden 1981; Heron 1981a), and action research, the basic spiral of which consists of planning, action, observation and reflection (McNiff & Whitehead 2006; Reason & Bradbury 2001a; Hollingsworth 1997; McNiff 1992, Sanford 1981) become especially appropriate in conditions sensitised by emancipatory efforts (Habermas 1972). A participatory and multi-perspective environment where inequalities have existed in resources, access to opportunities, education, ideology and values (Davidhoff 1997; Donald et al. 1997) can serve to stimulate new creative methods of scientific inquiry from which synergies can emerge that encompass new metaphors of meaning.

### 1.4 Design and methodology: the notion of a meta-frame

The research design and methodology (Reason & Rowan 1981a) of this investigation is invested in creating an integrative paradigm for education by means of reiteration between key theoretical concepts interacting with fieldwork explorations on a meta-contextual level of discussion that is of a higher order distinction and abstraction (Keeney 1983). The meta-frame of inquiry emerged from this recursive process as a need for an epistemological guide to relate phenomena and organise patterns of meaning across multiple systems levels and dimensions rather than a design and application mode of research (Mouton 2001). As co-creators, fluctuating between ontological and epistemological accounts of the world (Varela 2000; Varela & Shear 2000a, 2000b; Lakoff & Johnson 1999; Varela et al. 1993), the process of our inquiry becomes an integral part of our sense of self, and does not always fit into over-arching theoretical contexts. Thus we need elaborate conceptual maps “to give focus to the complexity of the inter-connected webs of dynamic and fluctuating patterns of organisation” to facilitate the emergence of unique insights and meaningful experiences (Van der Hoorn 1995:129).

**The notion of a meta-frame.** Systems inquiry and the emergence of a theory of metaphorical thought provides a means for organising our inquiry within a particular frame of reference with guidelines that
are representational and relational and which draw on trans-conceptual imaginations to form coherent and elaborate schemes that move beyond disciplinary distinctions, as trans-disciplinary frameworks constantly creating inter-connections between systems (Benking 2000; Laszlo 1995; Ortony 1993; Johnson 1987; Torbert 1981; Black 1962). Although not explicitly formulated as such, the meta-frame of inquiry in this thesis resembles the characteristics of a model which is vested more in the heuristic and exploratory nature of its concepts and their relatedness rather than those of a theory whose function is more explanatory in nature: models “suggest new relationships heuristically” whereas theories “fulfil an explanatory and interpretative function”, however, the distinction between them is not clear-cut (Mouton & Marais 1988:137). Modelling on the level of a systems meta-frame is akin to a process of meta-modelling which provides a coherent and inter-related contextualisation of ideas and concepts as a representation of higher logic and greater abstraction that can accommodate different ways of viewing and understanding (Benking 2000; Checkland 1999; Cloete 1999; Checkland & Tsouvalis 1997; Tsouvalis & Checkland 1996; Yolles 1996; Van Gigch 1993; Fuenmayor 1991; Checkland & Scholes 1990). “Higher level of logic means that we are modelling at the meta-level instead of the object-level inquiring system. Higher level of abstraction means that we are one step further removed from the real world of objects and things than when we modelled at the objective level of abstraction” (Van Gigch 1993:253). It invites open-mindedness and encourages inclusiveness in its approach in a contextually congruent and logically consistent way (Reason 1981b).

The term *meta* means beyond, likened to a process of raising up from the physical to metaphysical, while metaphor, from the Latin *meta*, beyond, and *pherein*, to carry with change, or transfer, relocates concepts in abstract space to enliven active images in the mind. Since metaphor is considered the basis of human thought (Lakoff & Johnson 1999; Ortony 1993; Romanyszyn 1989; Von Eckartsberg 1989), the former object-subject division of the mechanistic mindset (Descartes [1642] 1951) can be dissolved by reframing our metaphors of consciousness to experience multidimensional life in an imaginative, coherent and connected way. We can direct our epistemology to new systems of ideas, since we study only the ideas of things and not the things in themselves: “*[e]pistemology is that science whose subject matter is itself*” (Bateson 1991:231). Holistic metaphors do not need to be qualified or translated by the methods of explanatory science: “*[i]nventing a metaphor, like any scientific observation, is an act of discovery, an exploration of the network of correspondences underlying the world*” (Spitzer 2004:161), and the mind has to search for underlying unity to create conceptual frameworks broad enough to subsume and release its dynamic energy through unexpected combinations that engenders fresh perspectives. Analogies of this kind do not lead to a projected outcome: “*[b]oth inductivism (proceeding from particular sense experiences to universal explanatory principles or laws) and deductivism (provisional hypotheses from which various phenomena are deduced) presuppose an artificial division between the act of observation and the creation of an explanatory principle*” whereas “analogy are systemic and have no status apart from the whole” (Spitzer 2004:302). The analogical chain is a process of gradual attunement between the perceptual
and reflective, an open-ended and aesthetic embodiment that needs to be deployed with wisdom and responsibility (Spitzer 2004; Bateson 1991).

A meta-frame serves "to establish a self-reflexive 'meta'position" (Reason 1994:31) as a dialectical process of reflection through which a "re-forming mind emerges rather than allowing experiences to be framed" (Reason 1994:33). It holds our understanding of the concrete specific and abstract universality as a complementary aesthetic effect between the ideal and sensory in which organised patterns of images and concepts are mediated systemically as reciprocally related dynamics of the same recursive process (Bateson 1985; Keeney 1983). Metaphors can become the universal in the specific in that "a theory of metaphor can enact what it signifies" (Spitzer 2004:315) and not merely represent it. In this respect different cultures create their own reality rather than represent it, which reveals the hallmark of true art and aesthetics namely, that it transcends social or historical contexts and embodies eternal values (Cook 2000). Music and art today have the same unifying role as the myths of ancient times: in Western music history, "when inventing the specific musical forms, music had only rediscovered structures which already existed on the mythical level" (Lévi-Strauss 1978:44). Hence the resurgence of the theme of universal harmony is an indication of seeking balance with scientific accounts of the world. The music metaphors in this study are not employed in specific structural analysis of abstracted compositions (Spitzer 2004; Krantz 1987). Instead, they are invested in recovering ancient speculative music's notion of universal harmony as the inherent fabric of existence, which has been reinterpreted musically throughout cultural history. In this respect metaphor can be termed a model (Spitzer 2004; Black 1962) and music, through its speculative metaphysics, a frame of mind (Godwin 1982). Since our current systems of inquiry are still subject to fragmented mindsets by evolutionary default, this study presents the meta-frame of inquiry as the central theoretical thesis within which to mediate its own research concerns in a critical and reflexive, yet holistic way, strengthened by its fieldwork pursuits within which it was able to identify the complementary synergy of African and Western worldviews and values as a necessary unity in the hope that we may be able to defer potential misunderstanding of Westernising African and Eastern wisdom, some of the most valuable sacred treasures of our humanity, in the name of development.

Theoretical considerations. The main theoretical contributions in the design and research methodology of the study are based on the systems view of the world (Harman 2000; Capra 1983; Laszlo 1972a; 1972b; Von Bertalanfy 1968), more specifically the biomatrix systems approach (Appendix F), a general systems theory co-devised by research colleagues of the biomatrix group (Dostal et al. 2004; Cloete 1999; Dostal 1997; Edwards 1996; Járos & Cloete 1987). A further set of systemic epistemological criteria have been included to assist the reflexive process on a meta-contextual level namely, making observations, drawing distinctions and indicating punctuations, marking orders of recursion, logical typing and double descriptions, using complex metaphors and

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7 The systemic epistemological criteria are described in section 5.3 of chapter five, the systems theory chapter, along with a diagram (Figure 5.10).
narrative thinking (Bateson 1985; Keeney 1983). The systems view describes the world in terms of purpose-based, holistic and self-organising principles that form complex multi-levelled and multidimensional webs of relationship patterns in existence. These are merged with speculative music concepts (Godwin 1982), more specifically the Pythagorean-Platonic music of the spheres philosophy (Cornford 1937), which provides a complementing cultural aesthetic perspective of the world in which the principles of music are believed to underlie the order and organisation of the universe (James 1994; Heninger 1977). The theoretical concepts are infused with and supported by additional interdisciplinary and cross-cultural sources that draw from fields such as quantum physics and consciousness studies, different ways of knowing and the concept of self.

Fieldwork contributions. The main fieldwork contributions of the study refer to the fieldwork journey which took place during the first decade of South Africa's democracy, namely from 1994–2004. It consists of a series of separate, yet inter-related education development projects and affiliated activities, all of which have been recorded fully in documents independently of this study (Appendices A, B, C, D & E). The accumulative and interactive nature of the project activities traced a visible timeline through which the research concerns that prompted this study developed (Figure B1). The main project themes address multicultural music education approaches, arts in education as a means of cultural transformation and, music and arts as creative mediators of learning approaches across the curriculum. They reflect diverse contexts and groupings of participants that involve a wide variety of methods appropriate to each circumstance, such as in-service training workshops with educators, student apprenticeships and class visitations with learners, field recordings with community artists and youth groups, project methodology sessions with research colleagues, arts and education policy workshops with curriculum advisors and curriculum support staff, and cultural exchange teams with international participants. The projects were conducted on the basis of action research with additional research methods employed wherever appropriate. Apart from external project evaluation, analysis and interpretation of data was conducted in a way that is congruent with systems approaches namely, that it provides descriptions that are relational, experiential and qualitative, using multiple triangulation techniques to illuminate relevant issues of the inquiry process. (McNiff & Whitehead 2006; Reason & Bradbury 2001a; Wickham & Bailey 2000; Hollingsworth 1997; McNiff 1992; Allan & Skinner 1991; Anderson 1990; Denzin 1990; Hitchcock & Hughes 1989; Sanford 1981). Recursive personal critical reflection into the practically-based music and arts situations continued through reflexive research methodology (Alvesson & Sköldberg 2000) from which themes emerged in a qualitative manner (Davidson 2004b) leading in turn to multiple research methods in music and arts teaching and learning (Yarbrough 2003).

Data gathering took many forms. These included comments from participant journals, audio and video recordings of workshops and feedback discussions as well as comments noted on flipcharts. There is full video coverage of all workshops and field trips to collect materials from community artists and
settings. Some singled out activities received special attention as case studies. Transcripts have been made of interviews with educators, presenters and participants, along with field notes from classroom observations and intervention visitations. Questionnaires were devised where appropriate as well as distribution brochures. All notes from planning and feedback meetings with project presenters have been filed. Needs assessment surveys preceded activities and all projects have fully documented and externally evaluated reports. Frequently, newspaper and magazine articles, radio and television interviews unleashed interesting views, many of them in foreign languages with translated transcripts. Meaningful moments of knowledge exchange occurred in casual settings while reflecting with participants or with colleagues at national and international conferences such as the International Society for Music Education (ISME) in Pretoria South Africa in 1998, and the brainstorming and planning sessions of the African continent delegates at The Durban Gathering that preceded it the year before. Furthermore, numerous notes and electronic communications with peers and participants remained ongoing, as with the extensive reflective notes in the author's research journal. These provided divergent ways in which to inform, interface with and enfold back into the theoretical constructs before converging into the meta-frame of inquiry on higher orders of recursion. Regarding the selection of data for inclusion in the thesis text, while it is important to distinguish between the methodology used in practical projects (actions research) and in the actual thesis itself (new paradigm research), they are closely and recursively linked and infused with the systems epistemological criteria of analysis mentioned earlier in this chapter, when presented on a meta-level of discussion (Bateson 1985; Keeney 1983). New paradigm research methodology acknowledges subjective experience and co-operative inquiry as well as abductive, heuristic, intuitive and holistic methods. Issues of validity are addressed through relative meaning-making contexts that rely on reflexive and self-reflective processes that inform and enlighten one another. Ultimately, it points to the ability to recognise patterns that emerge on higher levels of conceptual organisation. The practical methodology for presentation in the thesis text was therefore drawn from systemic co-participation in which all contributions are maximised by the value each brings to the whole in a self-regulatory and self-referential manner. This in turn rests on issues of consistency in consensual inter-subjective agreement and triangulation that are increasingly strengthened to cohere into universal generalisations that are congruent between the propositions asserted by the researcher and the experiential context.

1.5 Novelty and value of this research study

The novelty and value of this study can be considered to reside in its visionary approach, namely in the way its constituent components have been contextually organised into a coherent and systemic meta-frame of inquiry. While one may note that many of its contributing concepts and aspects mentioned above are familiar within their respective fields and disciplines, there does not exist to my knowledge a unifying framework that configures them in this way as an inter-related and integrative paradigm relevant to education contexts. Its uniqueness may be characterised by the synthesis of scientific and
speculative approaches as a meta-perspective intended to open the mind to different ways of viewing and understanding that gives greater presence to the world and self as a complex and inter-connected whole. Music serves as metaphor and mediator in its conceptualisation and contextualisation.

Since mental images and concepts are no longer mere internal representations of an external reality (Descartes [1642] 1951), but an embodied experience (Lackoff & Johnson 1999; Johnson 1987), we require a metaphoric re-conceptualisation of the self from its object-subject disembodiment, as organised patterns of being. The emerging central sense of self as a replica of the musical world creation in the spirit of Pythagorean-Platonic philosophy is not separated from the world, and consciousness is not located in the mind but extends across the universe (McTaggart 2003; Laszlo 1995). In revitalising different ways of knowing and relating to the world we access the deeper sacred unity of life (Bateson 1991). By using the creative imagination, the key ideas proposed in the study become enlivened as metaphoric maps of the self affording the inquirer an opportunity to visualise a transcendent universal self against which the individual self continually mediates itself into existence.

This is achieved by embodying the ideal principles in actual contexts in a mutually recursive way as an emerging continuity between a consciously organising higher and lower self. While it stretches reality somewhat between the physical and conceptual domain, this perception offers one the ability of tuning in to the invisible underlying order of universal principles and network of patterns so as to access and reconstitute an inter-related, multi-layered and multidimensional matrix of the self. The nature of the inquiry may thereby unexpectedly bring new insights depending on the way we frame our perceptions that can have far-reaching implications for transformation within self and education not present in other systems or education transformation approaches.

1.6 Contextual review in the field

No singular field defines this research study, the impetus for which emerged from a position of self-exploration (Reason & Rowan 1981a) within inter-disciplinary research contexts and not as a result of a specifically structured research plan influenced by a pre-literature presence (Moustakas 1981). Review of related literature has formed an ongoing part towards the evolution of its research concepts and experiences. In terms of the meta-frame of inquiry, the contributing systems worldview and speculative music texts, along with their aesthetic, epistemological and metaphoric inputs, appeared in the afore-mentioned section. However, no literature reviewed has been singled out as holding an equivalent configuration of representing fields and concepts in that this study presents a unique synthesis of co-participating ideas and disciplines. Mostly, illuminating and open-minded attempts at unified trans-disciplinary theory and conceptual frameworks of a systemic and interconnected universe neglect to consider, or mention, music and universal harmony as a participating discipline in its metaphysical speculations (Hooft et al. 2005; Laszlo 1995).
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Relevant literature in the respective contributing fields have been employed directly in the text in support of the discussion and not necessarily perused prior to the study in order to pose complementary or counter views. Research review was, however, conducted on more recent studies linking music to systems theory. A study on the systemic transformation of music education practice in South Africa shows how philosophy of music education, music curriculum, music teacher education and music research can be organised systemically albeit predominantly along the input and output functions on the administrative level of planning and management (Hauptfleisch 1998). A practical and adaptable systems model for music tuition has been put forward as a triadic arrangement of systems and their sub-systems between pupil, tuition and music, from a more classical perspective of wholes-and-parts systems theory (Müller-Zürich 1994). The holism versus reductionism debate has in turn been taken up within the context of music as a whole (Primos 1997). While holism served as its forerunner, there is minimal reference to the field of systems theory, considering the date of completion of this study. There have been contributions regarding the inter-relatedness and interdependence of human beings and music in the context of human development from a systems perspective with some reference to emergent properties by observing patterns of change in self-regulated processes in music psychology (Van Schalkwyk 2001, 1998). An eco-systemic view of education methods in general, not related to music, had a particular influence on the epistemological approach used in this study (Van der Hoorn 1995).

Regarding co-participating themes in music, David Elliott’s education by means of music deserves mention in its consideration of the broader role of music and learning (Elliott 1995) and whose philosophy has been taken up by recent local studies aligning music education to multiple intelligence theories and whole brain development (Mitchels 2001) as well as in ongoing debates between aesthetic versus praxial approaches (Regelski 2003; Reimer 2003, 1989). The work of psychologist C. G. Jung (Jung 1971, 1969b), who has a strong presence in this document, has also influenced studies promoting the holistic teaching of music, creative thinking and self-knowing (Carulus 1997). The latter approach adopts problem-focused learning in which knowledge is defined in terms of solutions to problems rather than subject-based learning, contrary to the purpose-based approach of the present study. Studies on the effect of music on learning and cognition are newly emerging (Altenmüller et al. 2000), with particular reference to South African cultures (Gerhold 2006; Mnukwana 2006), as with the current world music trends in educational approaches that show the global need for moving beyond the Westernised systems of music education (Reimer 2002; Lundquist & Szego 1998; Floyd 1996; Campbell 1990). African musicologists are becoming increasingly outspoken in the affairs of the musical arts in education (Herbst 2005a, 2005b; Nketa 2005; Herbst 2004; Herbst et al. 2003; Agawu 2003b; Nzewi 1998, 1997, 1991; Djedje & Carter 1989a). Although like-minded frameworks have been proposed for the integration of different music cultures (Boyce-Tillman 1996) based on a

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8 The publication dates belong to the first complete edition in English of C.G. Jung’s collected works that are new translations in which he supervised the textual revisions prior to his death in 1961.
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developmental spiral (Swanwick & Tillmann 1986) that includes systemic and transcendent levels, as well as a model of the self in relation to music that reflects complementary polarities in dynamic patterns of relationship (Boyce-Tillman 2000), they have not been structured in the same cultural, epistemological and methodological contexts in which this study came of age. The references over the study period incorporate a wide range of dates, from scholarly translations and interpretations of ancient scripts to most recent contemporary scientific sources.

1.7 Development of the research journey

At a crucial time, when attempting to script the research findings into the final document, an unexpected image appeared as an intervention of the writing process. Having traced all activities relating to the study in a circular diagram across a page, the final entry had quite unintentionally connected itself to the starting point by closing itself in the shape of an *ouroboros* (Chetwynd 1998; Jung 1968b). The page was mapped to a descriptive title referring to a field or web of activities embracing a common theme. The purpose of drafting the one page map was to assist in comprehending a focus strategy for the final writing process and to find a way of bringing it all together. Only after further contemplation did a deeper meaning begin to reveal itself in the evolution of its ideas and concepts (Wickham et al. 1998) and, through this investigative process alone, the study transformed itself.

The map revealed an initial two-way departure to the research journey. Having started out with pre-studies on the effect of music on human processes with a presence of speculative music philosophy (Muller et al. 1994) under the guidance of György Járos and the biomatrix systems research group based at the University of Cape Town, the change of the South African government re-diverted my world of work which revealed a new set of research concerns. Now, with the documentation of the study, the process had come full circle. The initial attempts to verify the influence of music on the human system had left its mark of uncertainty as to addressing the immeasurable aspects that reside on other levels of direct knowing such as intuitive modes of perception: “the scientific approach based upon reductionism, repeatability, and refutation will founder when faced with extremely complex phenomena which entail more interacting variables than the scientist can cope with in his experiments” (Checkland 1999:66). Re-direction of the research process to accommodate African and Western worldviews and methods in education, albeit in a different field, brought new insights that arose quite spontaneously as a result of changes in my own epistemological approach (Wickham 1997). The impetus had shifted, instead, to motivating for an integrative framework to accommodate complex complementary worldviews and values. Although many research methodologies and

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9 The conceptualisation took place on 25–26 October 2001 while presenting my projects in Lund, Sweden and preparing to meet up with my Australian co-supervisor György Járos on Sunday 04 November 2001, who was arriving in Stockholm to conduct a doctoral exam at a northern Swedish university. We spent the day walking the cobbled streets of the Old City discussing the systems implications of the intrusive *ouroboros* for the study.
presentation formats could have accommodated the original documented findings of this study, it seemed inevitable to present the central thesis of the study through the meta-frame of inquiry which had emerged during the research journey. This seemed consistent with the symbol of the *ouroboros* now inhabiting its premise.

The *ouroboros*, the circular image of a serpent biting its own tail, renews itself by devouring itself: “*a* snake with its tail in its mouth, apparently swallowing itself yet with no beginning or end, like a circle and sphere, is symbolic of eternity” (Parrinder 1982:24). By clearly distinguishing its parts and newly relating them to each other, the whole is transformed. It encircles its world and binds it together into an enclosed self-supporting system, endless through its changing forms. The outer world of activities and experiences become internalised and digested, bringing forth a new creative outcome (Chetwynd 1998). “Writing is also a way of ‘knowing’ – a method of discovery and analysis. By writing in different ways, we discover new aspects of our topic and our relationship to it” (Richardson 2000:923).

1.8 Organisation and presentation format of the document

The content of this study is presented in ten chapters, conceptually organised around its central theme, the meta-frame of inquiry (Figure 1.2). The initial chapters of the main body of text present the pre-studies and data feedback of the fieldwork journey. The middle chapters present the key theoretical and philosophical concepts from which the meta-frame and system of ideas emerged. The final chapters present the metaphor maps as an epistemological guide for contextualising and reflecting on the concerns raised in education fieldwork contexts. Leading into the main body of text and setting the tone for the research methodology and paradigm, is the introductory chapter. And drawing the study to a close by evaluating its worth and releasing it into future possibilities is the concluding chapter.

The conceptual layout of the study represents a multidimensional spiral of co-existing and co-evolving research ideas and events. This requires the reader to visualise the presentation slightly differently, which can have a subtle yet profound impact on the way the evolution of the research journey is perceived. While the study is relayed in the inevitable linear passage, a limitation no written presentation can escape, the central chapters provide the conceptual holding space within which the contents of the study are to be blended and transformed. It contains in a sense the conceptual starting point within which the themes are identified and differentiated, and the unified base to which the contents are expected to be re-integrated, completing the research journey. This perception in itself diverts the temporal linear format of the reading from the more conventional cause and effect passage

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10 The research journey refers to the whole research process as reflected on a meta-level of discussion which should be distinguished from the fieldwork journey which pertains to the education development projects as the practical experiential component accompanying the research inquiry.
of the research problem and its resolve, to assist in attaining a more emergent or eagle's eye view and holistic comprehension.

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The content is outlined in parts and chapters as follows:

**Part A. Chapter 1**

Introduces the central hypothesis, research paradigm, methodology and design of the study.

**Part B. Chapters 2, 3 & 4**

Presents the documented fieldwork journey over the first decade of South African democracy.

**Part C. Chapters 5, 6 & 7**

Presents the metaphor-aspect of the meta-frame of inquiry by integrating the systems view of the world and speculative musicology into a unique system of ideas.

**Part D. Chapters 8 & 9**

Presents the mediator-aspect of the meta-frame of inquiry as metaphoric maps that serve as an epistemological guide for exploring the concepts in education contexts.

**Part E. Chapter 10**

Concludes the study by providing a critical review and reflection on its contribution with possibilities for the way forward.

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**Figure 1.2 Conceptual organisation of the study**

*integrative framework emerging from the above*
A note on terminology: Apart from a few new terms introduced in the meta-frame, consistent with those used in the systems and speculative music approach so as to distinguish it from co-contributing theories, the study remains consistent with concepts and terms usually described within its representing theoretical and practical constructs. When concepts are introduced in the study, they are often completed descriptively by accompanying quotes within the same sentence, showing that they do not intend to prove the statements posed but to show consistency of thought in related field contexts.

Closing. Finally, this document should not be read as a closed and consolidated product of the research venture but merely the representation chosen to put forward at this time. By its very nature, it reflects a coherent and congruent version but which remains in continual progress within its research context. An attempt was made to avoid the rendering of theoretical concepts applied in practical contexts towards a predicted resolve. There are many constraints of this chosen paradigm, and subsequently of this study, related to the wideness of its scope in its attempt to accommodate universal principles despite the confines of the written and conceptual medium, and which usually occurs at the expense of the specific and substantive, a criticism often brought against systems theory itself (Woodhill 1993; Lilienfield 1978). However, the meta-frame was created precisely to create a conceptual context within which issues covering extreme domains may be related in new and unusual ways instead of creating environments around a given research problem, as is the case with more conventional systems approaches (Dostal et al. 2004; Cloete 1999; Tsouvalis & Checkland 1996; McNeil 1993a). The study achieved this by tracing a multi-levelled and multidimensional spiral through different degrees of complexity and clarity in which synthesis and analysis co-exist and support each other in a balanced and complementary way. Such a process can never be completely predetermined. Instead, it features a path taken purposefully into uncertainty in its pursuit of truthfulness and usefulness (Sokolowski 2000; Rowland 1995). Thus personal meaning is gleaned from an open-mindedness and a readiness to constantly re-explore in order to attain ever greater understanding in a position of complex human inquiry from which an “emerging change of consciousness” (Murthy 1994:463) is expected, and from which may arise in turn even more insightful research questions.
Part B. Fieldwork journey

The fieldwork journey documented in this study extended over the first decade of democracy in South Africa, namely 1994–2004. It covers a number of inter-related and over-lapping project collaborations and activities in music, arts and general education initiated by myself within a personal work context over the time of the changing government. They are presented in this text as an accumulative and inter-connected education development journey through which three major themes emerged that are dealt with in separate chapters (Figure B.1), namely: music education in a changing cultural context (chapter two), education transformation through arts and culture (chapter three), and creative mediation across the curriculum (chapter four). The themes emerged in a qualitative and reflexive way from concerns noted in action research contexts in the field. They were initially re-formulated as research questions within a broader systemic context of changing worldviews, recursively and retrospectively reflected on a meta-contextual level of inquiry in this study. The journey was made possible by a number of participators and links to other projects. To honour their contributions, I have included as many names as possible, which is also a way of validating my research and making the journey transparent. Because of the compressed nature of the summarised information, an attempt was made to save it from becoming curriculum vitae by transferring some of the details and elaborations to the attachments (Appendices A, B, C, D & E).

Figure B.1. Fieldwork journey map of project activities 1994–2004
Recursive, reflexive and reflective research methodology in the field. The fieldwork journey opened a way of knowing about the validity and quality of research that rests on participatory and collaborative relationships (Reason 1994). The process of critical reflection between practical and theoretical concerns with co-participants in action, noted in a self-referential and self-reflective way into documented journals, showed “themes emerging in a typically qualitative manner” (Davidson 2004b:146). Being positioned in the centre of ongoing change and inter-related activities, together with reflexive re-contextualising opportunities, provided insight from a meta-position as a journey of self-discovery on deeper levels of understanding (Davidson 2004b, 2004c; Bresler & Ardichvili 2002; Alvesson & Sköldberg 2000; Wickham 1997). Action research awakens one’s thinking to take in rich textures of information in moment to moment awareness (McNiff & Whitehead 2006; Bresler 2002; McNiff 1992), leading in turn to multiple research methods in music and arts teaching and learning contexts which “is not only appropriate, but desirable” (Yarbrough 2003:3). Here, action research is not seen as much as a methodology in itself, as it is “a worldview which manifests as a specific set of practices which emerge in the interplay between action researchers, context and ideas”, and, which in turn draws from a range of research methodologies that include mostly qualitative and sometimes quantitative approaches (Reason & Bradbury 2001c:xxv). Scientific inquiry is not separated out from life but becomes a quest for life and living knowledge created through action, reflection, participation and human experience, in keeping with the emerging worldview and paradigm of the West that will bring “new patterns of thought” to “transform our experience, our thinking and our action” (Reason and Bradbury 2001b:4). The emergent worldview has been described as systemic, holistic, relational and experiential, and its defining characteristic a participatory metaphor in the sense of co-creating our world (Reason 1994). A “participatory perspective asks us to be both situated and reflexive, to be explicit about the perspective from which knowledge is created, to see inquiry as a process of coming to know, serving the democratic, practical ethos of action research” (Reason & Bradbury 2001b:7).

The idea of emergence from inter-related wholes is a systems concept that arose from the notion of holism (Smuts 1926) in which phenomena cannot be comprehended by understanding the parts on their own, and which led to another systems term, namely that of synergy (Járos 2000). In systems thinking we may gain a deeper view of how we relate or synergise with others in the greater scheme and complexity of life: “systems thinking helps people to sense a deep holistic or spiritual quality to human existence” (Flood 2001:141) and, since we are co-creators of this complexity, “it makes no sense to separate action from research in our minds or in our practice” (Flood 2001:142). “It is through systemic thinking that we know of the unknowable” and “it is with action research that we learn and may act meaningfully within the unknowable” (Flood 2001:142). Systems thinking should not be taken as an approach to action research but as a means of broadening and deepening it. Where these two approaches meet, “we witness the incredible genesis of a conceptual universe that opens up otherwise unimaginable ways in which people may live their lives in a more meaningful and fulfilling manner” (Flood 2001:142).
2. Music education in a changing cultural context

This chapter in the fieldwork journey deals with the theme of music education during a time of cultural change from 1994–2002. It is relayed through perceptions and changes made in my personal world of work in co-participation with other musicians and educators in the field since the 1994 government elections. The process began through relinquishing a career of orchestral playing and lecturing in Western percussion to participate in the values expressed in the Bill of Rights1 of the new constitution, as reflected in the Universal Declaration of Human Rights adopted by the United Nations, in which all citizens have the right to freedom of expression and freedom of artistic creativity (RSA 1994). And, to join in with music educators faced with the new democracy who now found themselves “engaged in an active debate concerning the vision of a unified music education policy which would be meaningful and purposeful for children of many diverse and differing life experiences and aspirations” (Primos 1997:25).

**Background to the cultural context.** Just prior to the new democracy, there was shared sentiment that “the crisis in world education” (Cookson, Sadovnik & Semel 1992:3) had impacted on the South African “music education crisis” (Hauptfleisch 1993:1). The Human Sciences Research Council (HSRC) had conducted research entitled Effective Music Education in South Africa prior to the 1994 elections (Hauptfleish 1991) which included a policy statement that the future government would be requested to subscribe to in a White Paper.2 The findings showed a collection of crises. One was the “crisis of coherence” which implied a “lack of connection and consistency apparent in the fragmented education system and the resulting uneven distribution of music education practices and resources throughout the country”. Other concerns expressed the “crisis of relevance” reflected in regular queries by the non-government sector “to change formal music education’s current perceived elitist character” of the Western regime and, the “crisis of curriculum-in-use” which dealt with the lack of provision and implementation of curriculum practices in the classroom (Hauptfleisch 1993:1–3).

With the new government committed to equity and community participation, a new National Arts Council (NAC) was established by the ministry of the Department of Arts, Culture, Science and Technology (DACST) under Ben Ngubane who emphasised in the White Paper on Arts, Culture and Heritage that “arts, culture and heritage cannot be an exception to the transformation process” (RSA 1996e). It was the initiative of the ministry of education under Bengu and the African National Congress Policy Framework for Education and Training (ANC 1994b) to introduce the National

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1 The Bill of Rights is the cornerstone of democracy in South Africa. It “is compiled in such a manner that it enshrines the rights of all the people in the country and acknowledges the values of human dignity, equality and freedom” (Mathebula, Mafunisa & Makobe 2002:6).

2 A White Paper is “a definitive statement of policy which the government intends to put into effect” indicating the main lines of legislation that usually follows. It is preceded by a Draft White Paper following on from a circulated Discussion Document based on an initial Green Paper, a consultative document published to promote public awareness and discussion of a particular topic containing the government’s preliminary ideas without as yet committing to a specific course of action (Butcher 1991:35).
Education Policy Act (RSA 1996c) regulated by The South African Qualifications Authority (Saqa) Act (RSA 1995a) as well as decentralising the new education system under the South African Schools Act (RSA 1996d) for redistribution of education opportunities by giving provinces and regions more autonomy in their own affairs regarding “access, redress and participation” and which would “seek to bring equity” to arts and culture policy and practice (RSA 1996c).

Yet, despite the efforts made in constitutional and organisational policy, there has been a growing concern amongst music educators that there is no visible unifying framework to direct the debate on reconciling diversified cultural approaches. The current conditions surrounding arts and culture show that music does not feature in the timetable of many schools, with a lack of classroom musical experience, little substantial evidence of effective teaching and learning, insufficient knowledge and appreciation of each others cultures, and administration burdens from the department, placing the curriculum at risk (Herbst et al. 2005; Klopper 2005; Rijsdijk 2003). In the numerous national policy and regional Learning Area Committee (LAC) meetings for arts and culture that followed the new ruling, music educators had expressed the need to form a coherent and workable vision to improve the image and conditions of music in the context of education for all cultures as reflected in the original national Reconstruction and Development Plan (RDP 1994), which represents an integrated and coherent socio-economic vision for the fundamental transformation of South Africa towards eradicating the results of an apartheid past and building a democratic and non-racial future for all its peoples (RDP 1994:8–9):

An arts and culture programme is set out as a crucial component of developing our human resources. This will assist us in unlocking the creativity of our people, allowing for cultural diversity within the project [process] of developing a unifying national culture.

This was the central concept around which a number of inter-related fieldwork activities relayed in this chapter evolved, proposed as a music education development initiative with a culture-friendly percussion-based approach in an attempt to explore and contribute to the emerging dynamics of music education in a changing cultural context.

2.1 A percussion-based approach to music education

The guiding vision, motivation, purpose, development phases, concepts and methodology, activities and organisation as well as outcomes of this initiative, collectively referred to as the percussion-based approach to music education (Appendix E), are relayed in the sub-headings below.

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3 Such as the national arts and culture policy meeting held by the Western Cape Arts and Culture Department at the City Hall in Cape Town on 01 February 1997 and the ongoing regional Learning Area Committee (LAC) meetings in arts and culture held by the Western Cape Department of Education at the Cape Town Teachers Centre. A Learning Area Committee, such as the LAC for Arts and Culture, consists of key representatives for every one of the eight Learning Area Statements in the new national curriculum responsible for specifying the learning outcomes and assessment standards for the respective learning areas, and is open to all for participation in their fields.
2.1.1 Guiding vision, motivation and purpose

Guiding vision. The central values that guided the vision underlying the percussion-based approach to music education were inspired by a sound creation story following a personal visit to traditional Zulu sage and healer Credo Vuzamazulu Mutwa in his cultural village in Bophuthatswana just prior to the change of government. The story, adapted from the original, tells of Marimba, the Mother of Music "who gave the tribe some of the oldest and most beautiful songs on earth and who invented countless musical instruments, each destined to carry her name in some form or other" (Mutwa 1985:3):

Marimba who rules over a community of people in Africa had been cursed because of her refusal to succumb to the evil forces of darkness. Instead she holds true to her belief in love, beauty and peace and is thus blessed with the power of music to help overcome this darkness. As the days go by, she guides her people to invent music instruments from everyday objects: drums from worn-through mortars, musical bows from hunting bows and marimbas from animal snares. But the powers of darkness were relentless and brought threats of war to the community. Still, as the enemy approached, she encouraged her people to throw down their weapons and dance. Then she began to sing with a magic not of this world and which broke the evil curse. And so to this day, Marimba's song remains to inspire us with love, beauty and peace: 'carry my song on the wings of your light; bear my refrains to the ends of the world'.

The vision for the percussion-based approach was derived from the systems concept of ideal design in the context of education (Dostal 1997; Banathy 1994), which includes the views and contributions of an ever-expanding circle of representatives. The importance of creating and nurturing ideals in the guiding vision does not reside so much in attaining final outcomes as in the richness of shared experience and changed attitudes whilst shaping its ongoing activities and processes to meet, or rather to continually approximate, the ideals. The percussion-based approach to music education created the following ideals in its vision (Muller 2002:3):

The percussion-based approach to music education will strive to meet the unique educational challenges implied by the implementation of the new national curriculum. It will help to transform current perceptions of a specialist, expensive and elitist music education system to an accessible one through its percussion-based methods. It will involve educators, learners, community artists, university staff and students as well as curriculum advisors in co-developing and implementing percussion-based music approaches. It will strengthen the capacity of its participants and training team by involving them in ongoing research so as to facilitate lifelong learning skills. It will strive to contribute to the healing process of unifying the diversified arts and culture practices in South Africa through creating innovative approaches to music education.
Motivation. The percussion-based approach to music education was realised through education development projects and associated activities to address the first major concern that emerged in the fieldwork journey based on a report to the ministry of arts and culture reflected in the objectives of the new arts policy, namely "to make the arts and culture more accessible to all", and, to promote "artistic and cultural synthesis" (Actag 1995:5). The motivation was mapped against the environmental conditions in which the project activities were to make their contribution.

During the inception phase of the percussion-based project activities, the external environmental context was assessed to determine the impact the proposed approach could have on music education. The information was compiled from initial experimental workshop findings, minutes and notes from the various LAC curriculum policy meetings,6 teacher interviews and a needs-based survey conducted via questionnaires in the Western Cape area in collaboration with the Western Cape Education Department. The following concerns were documented from the various sources as contributing to the prevailing conditions of music education. They reflect multiple and inter-related factors and have been summarised from the original transcripts (Muller & Le Roux 1997) as follows:

Music has become increasingly marginalised as large-scale retrenchments of music educators take place due to a reduction in staffing complements low in teacher-learner ratios. With fewer music teachers remaining in the schools, general class teachers, many with no former training in music, have become responsible for music teaching in their classes. Most of these teachers feel inadequate with the notion of teaching music unless they have had formal training, while those with previous Western-based qualifications feel inappropriately trained for the now larger, multicultural class. Where additional music educators have been retained in schools, they are mostly non-government posts that are the financial responsibility of the particular schooling community and which is only possible in the more affluent areas. Funds for music resources have been greatly diminished and 'most of the previously disadvantaged schools have no instruments, not even a piano'. Many teachers remain despondent with the demands made by the new curriculum. The music teachers in instrumental training have contact with only a relatively small number of individuals while the class music teachers see each class probably once a week resulting in a sense of discontinuity in their own practice and disconnectedness from the rest of the school. The percentage of contact time for arts and culture in the curriculum, which music now shares with drama, dance and visual arts, is minimal compared to other learning areas. The status of African music is seen to be questionable since it does not provide easy access into tertiary training institutions. Employment possibilities for musicians are limited in the bigger socio-economic picture because of their exclusive nature.

Two key areas were identified as contributing to the above conditions in music education through which the percussion-based approach would exercise the question of accessibility and from which the project activities would take their departure, namely:

- the lack of available funds for resources in music education, and
- the lack of training in multicultural music methods in the South African context.

6 These included curriculum policy and national qualifications frameworks meetings held at The Community Arts Project, Ruth Prowse School of Art and University of Cape Town's School of Dance during 1996–1997.
It was proposed, through the percussion-based approach, to re-conceptualise music education to make it accessible and affordable for schools and to develop methodologies for cultural integration as well as appreciation of cultural differences. More specifically, percussion was suggested as a mutual cultural base for exploring integrative music education approaches. Besides being relatively cost-effective in developing and implementing, the percussion-based approach can be used by general class teachers as well as specialised music educators regardless of previous training or experience, and provides a suitable medium for bridging the cultural needs especially in introducing African music into the former Western-based music education system.

**Purpose.** The percussion-based approach to music education had grown out of the circumstances described above and presented an ideal opportunity to express its purpose through the principles proposed in the motivation. The means and medium through which it would attain this, was percussion.

*Why percussion?* The choice of the term percussion was informed by my former predominantly Western specialised instrument study with some exposure to African and other ethnic percussion experiences locally and abroad. The following attributes of percussion playing were brainstormed and noted with university percussion students, African musicians and international percussion peers (Muller 1994), admittedly more influenced at the time by the prevailing Western conditions.

In general, percussion:

- forms part of indigenous Africa and serves as a connection to the global music community since many ethnic cultures are linked by percussion;
- is one of the most natural instrument groupings on which to make music;
- is culture-friendly in that it can accommodate different cultural styles and share instruments, for example, between African and Western music;
- playing promotes group music making experience, interaction and shared cultural co-operation that fosters mutual respect for other cultures;
- can include affordable instruments that are more accessible than many other music instruments;
- offers a wider range of sound textures and playing techniques than any other instrument groupings;
- is suited to a variety of performing styles such as ethnic and traditional to popular, classical, contemporary and jazz;
- offers opportunities for further specialisation for example in Western or African percussion contexts as practical instrument study;
- integrates naturally with, and can be played simultaneously while singing and dancing;

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7 Although the percussion-based approach encourages gradual acquisition of quality percussion instruments, a small range of percussion instruments can be used effectively, including sticks and stones with body percussion, if adequate attention is placed on proper sound production and playing techniques.
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- can be taught in simple contexts to make immediate interesting and effective music without necessarily engaging in complex specialised techniques.

More specifically, percussion:

- offers an excellent way to initiate music training especially since it can provide an effective link between music theory and practice;
- requires limited musical or technical explanation and is easily taught by ear and by imitation;
- inherently delineates the elements of music into rhythmic, melodic, harmonic and tonal groupings;
- can facilitate the learning of basic concepts of music and transfer these to other music and instrumental settings;
- reaches all ages and can be taught at a very early age in order to build a foundation for mental and physical co-ordination;
- playing techniques can be taught even when no percussion instruments are available, for example, by using body percussion or natural sounding objects;
- instruments can be relatively easy and inexpensive to make and maintain;
- promotes creativity and diverse learning approaches by combining patterned and non-linear learning modes with progressive and sequential processes;
- provides keyboard mallet percussion instruments as a suitable alternative keyboard in music courses that require piano as part of harmonic study;
- is especially effective for ear training in a group or ensemble context, taking the reliance off the piano as a foundation for institutionalised aural training.

2.1.2 An outline of the development phases of the projects

The percussion-based approach and its projects as documented in this study and full evaluation report (Muller 2002) evolved over many years, from 1994–2002. It was initially conceptualised from within my own working conditions but acknowledges its development and expansion in collaboration with numerous music educators, performers and other role players through a collection of overlapping and multi-faceted project activities in clear phases of development as discussed below, such as: vision creation and brainstorming; experimental workshops, funding proposal and pilot project; re-vision, departmental support and environmental surveys; further funding for in-service training workshops; adjacent fieldwork recordings and research; overseas cultural exchange projects; other international collaborations; and various ongoing accompanying activities such as conference presentations. The project concepts, methodology and outcomes follow after the next section as a summary of the project evolution (see section 2.1.3 and 2.1.4).

Vision creation and brainstorming phase. The percussion-based approach to music education was initiated by personal career changes, enriched with a diverse spectrum of experiences and influences, and unfolded upon subsequent brainstorming sessions with university percussion and music education
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students, African musicians, percussion peers as well as research colleagues at the University of Cape Town (Muller 1994) to provide the impetus for re-contextualising the role of percussion in music education in the South African scene through which it created the ideals in its vision inspired by the sound creation story (Mutwa 1985) described above.

Experimental workshops, funding proposal and pilot phase. The first step towards enlivening the ideals of the vision was to present an introductory demonstration workshop along with my students, An Innovative Approach to Music Education through Percussion in my teaching studio at the University of Stellenbosch, attended by about forty music teachers in the Western Cape region. This was followed up by an exploratory series of five workshop sessions designed and presented by myself in African and Western percussion to a group of twenty five participants of mixed cultures. The workshops were organised through the Cape Town and Tygerberg Teachers Centres and held between March and June 1996 (Muller 1996a). The response of this dedicated group, with the request for ongoing workshops, led to my approaching the resident music educator, Helena du Plessis at the university and Dizu Plaatjies, leader of the neo-traditional African percussion group Amampondo with whom I had become acquainted in African music, to draft a proposal, Percussion: Integrating African and Western Music Education in Primary and Secondary Schools (Muller et al. 1996). It was submitted at a preliminary planning workshop of the National Department of Education, Preserving a Living Tradition of African Music held in Pretoria on 15–16 April 1996. This translated into a full funding proposal presented in the same month to representatives Stig-Magnus Thorsén and Gunnar Lindgren at a follow-up meeting with the Swedish International Development Agency (Sida) in Cape Town. Funds were secured to run it as an official pilot project from June to November 1996. The outcome of this initiative enabled us to approach a group of over thirty educator participants from mixed cultures, including the surrounding Khayalitsha and Khayamandi township communities, administered as an academic development program by the Centre for Education Development at the University of Stellenbosch (Cenedus). Teachers requested continuing participation with more focus on classroom relevance.

Re-vision, departmental support and environmental survey phase. At the end of 1996, the project vision was taken back to peers for revision and further inputs, including the Western Cape Education Department (WCED) whom I approached for co-operation. Links were set up in a meeting on 08 January 1997 with Nicol Faasen, head of curriculum services, in response to a call in the Western

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8 This incentive was augmented by a trip accompanying one of my percussion performing students, Eugene Trofimczyk - currently principal percussionist with the Cape Philharmonic Orchestra (an amalgamation of the former Capab and CTSO orchestras) at the University of Stellenbosch to participate in the First Leigh Howard Stevens International Marimba Competition and Festival in New Jersey USA (Stevens 1979) from 09–12 August 1995. There were numerous references to the African origins of the marimba in the tutorials, such as those given by Vida Chenoweth (Vela 1993), yet only one candidate from Africa representing the (Western classical) marimba.

9 The terms African and Western were used in broad strokes at this stage, until the project methodology evolved and began to participate in ongoing musicological discourse, disclosed at the end of this chapter.

10 For non-local readers, the word township refers to community locations situated on the fringes of the cities as informal settlements originally by African workers migrating from their traditional homelands in search of work in the cities during the apartheid years when entrance to the cities was controlled by pass laws.
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Cape Education Department circular, Curriculum Focus: WCED Newsletter on Curriculum Renewal 1996(1), "[y]ou are urgently invited to take part in the design of a new approach to lifelong learning and development in South Africa" based on the principles of the new national qualifications framework (RSA 1996b). A special meeting followed at the department on 16 January 1997 in which I made a presentation to the respective curriculum and principal subject advisors in arts and culture and its affiliated learning area, life orientation of the Western Cape Education Department (Muller & Faasen 1997). This meeting resulted in an ongoing partnership with, and input from, the curriculum advisory service for the duration of the fieldwork process in which the department became active in a number of inter-related initiatives ensuing from the original vision (Appendix A). A needs-based survey, a summary of which appeared earlier in this chapter (section 2.1.1), was conducted during the first part of the 1997 year, augmented by a statistical departmental report by the principal curriculum advisor in music, Marlene le Roux, and questionnaires drafted by myself circulated to educators in the Western Cape region (Muller & Le Roux 1997). The outcomes of this alliance were integrated into a revised vision document with supporting letters of recommendation from the Western Cape Education Department "for joint curriculum development projects within music, arts and lifeskills". The department expressed support for the projects to "provide rich contributions to the national development of a new outcomes-based approach to lifelong learning and development in our country" (Muller & Faasen 1997).

Further funding for in-service training workshop phase. A comprehensive proposal was submitted and further funding secured from our Swedish sponsors, The Swedish International Development Agency Corporation (Sida). The percussion-based approach set up a three-year in-service training program from 1997 to 1999, A Percussion-based Approach to African and Western Music Education for music educators of all grades at the University of Cape Town (Muller 2002; Domnérus 1999) where I was now also approached to lecture part-time in music education and where Dizu Plaatjies had been appointed as the first full-time lecturer in African music to the new course offered by the South African College of Music (SACM) at the university. After an open-day demonstration on 31 May 1997 with an address by Mackie Kleinschmidt, Director of Education Provisioning at the Western Cape Education Department, four all-day workshops were held with an average of forty participants per year, both returning and new, in the Western Cape from mixed cultural groups. The project was hosted under the auspices of the then director James May at the South African College of Music who administered the project in conjunction with the Department of Research Development and the Human Resource Department who audited the project at the University of Cape Town. Large presentation teams were recruited for the workshops consisting of community music artists and youth performing groups, professional percussionists, African music and music education staff and student assistants, technical staff as well as the presence of the Western Cape Education Department curriculum advisors. Participants were awarded attendance certificates in a ceremony presentation on 30 August 1997 at the South African College of Music by the Superintendent General of Education in the Western Cape,
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Brian O'Connell and head of Western Cape Education Department curriculum services, Brian Schreuder. The teachers demonstrated their newly acquired skills (Attwell 1997) which drew a response of appreciation from O'Connell in his address:

"[i]n participating in this course you have given me hope that my faith in the resilience and professionalism of our teachers is not a vain one and that education will indeed lead the charge of reconstruction and development into the twentieth century".

The in-service training project was externally evaluated in separate reports by education policy specialists Jonathan Jansen and Thulasizwe Nkabinde at the Centre for Policy Development, Evaluation and Management (CEPD) commissioned by Sida and the School of Music and Musicology of the Gothenburg University, Sweden (Jansen & Nkabinde 2000) as well as Western Cape Education Department curriculum advisor in arts and culture, Gill Cowan (Cowan 2000). Their comments are included with the participant's feedback under project outcomes (section 2.1.4).

Adjacent funded fieldwork recording and research phase. The in-service training workshops were accompanied by a parallel two-year project, A Percussion-Based Approach to African and Western Music Education: Fieldwork Research, during 1997–1998, made possible by an Extension Services Committee (ESC) award from the University of Cape Town's Research Support Services (RSS) of the Department of Research Development (DRD) chaired by Duncan Miller. Field trips extended into the surrounding township communities of Langa, Nyanga, Gugulethu and Mbekweni and afforded musicians and students involved in the project the opportunity to develop research skills and to gather and investigate original material appropriate for the educator workshops as well as discovering and recruiting new groups and talent. Arrangements of field recordings were then made by the team in collaboration with workshop presenters to render the material suitable for use in classrooms and to prepare it in accordance with project methodology, discussed further on in this chapter (section 2.1.3), in advance of the in-service training planning meetings. A few notes from my personal research journal inserted into the report to the Extension Services Committee are included (Muller 1998a):

It was quite remarkable to note how integrated the music is within the African-based community and, when travelling between communities, how widely the repertoire is known amongst the population so that at times many others simply joined in, arriving with drums under the arm. The situation posed some problems too, in that, being an oral tradition, there were as many different versions of traditional material as there are musicians, and each community has its own style. The cultural context in which the music unfolds is therefore inextricably linked in with the performance and each recorded version needs to be attributed to the musicians and community through whom the songs were made known. Incorporating the material into institutionalised structures posed questions as to how it would be handled in the translation; for example, by considering the role and relevance of music literacy when recalling or transferring it to classroom settings, since this would Westernise the teaching and learning methodology.

Overseas cultural exchange phase. The close of the three-year Sida funding term of the in-service training phase corresponded with a Sweden-South Africa Civil Society Encounter from 21–24 November 1999 in which about seven hundred Swedish delegates including their prime minister,
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Göran Person, visited the country. A group of Swedish music educators were sponsored, along with the project, by the Stockholm Sida head office to participate in a special project workshop chosen to represent the Sweden-South Africa partnership, Music for a Humane Society: African and Western Percussion-Based Music Education, at the University of Cape Town (Davids & Spies 1999). This led to the inception of a cultural exchange project, Exploring the Relevance of Marimba and Percussion-Based African Music on the Pedagogics of Multicultural Music Education, with a Swedish project partner, Peta Axelsson, at a music centre, the Åstorps Kommunala Musikskola for a further three years 1999–2002 (Axelsson et al. 2002). During this period groups of music educators and youth from Sweden as well as groups of project presenters from South Africa of around twenty members travelled every year between Sweden and Cape Town to workshop the percussion-based approach (Mayne 2001; Buskas 2000; Öberg 2000). The first of these was held from 23 April – 04 May 2000 (Axelsson et al. 2002) at the Åstorps centre and surrounding schools. Project outcomes from this exchange extended into a collaborative research initiative between the Malmö Musikhögskolan and the University of Cape Town as part of the Sweden-South Africa Research Partnership Program made possible by a planning grant in 2001 from Sida-NRF (National Research Foundation) to investigate The Marimba as a Medium for Multicultural Music Education. Field research was conducted with marimba groups and marimba players in the townships of the Western Cape with the aim of their incorporation into the percussion-based projects and for setting up international cultural exchange groups sited in the communities (Muller et al. 2001).

Other international extensions. The percussion-based approach received further invitations to present its workshops and methodology to other groups internationally between 1998 and 2002. These included: seminars and in-service training workshops, The World in the School, at the University of Gothenberg in Sweden; a five day program, A Percussion-Based Approach to Developing Methodologies for Multicultural Music in the Classroom, at the Malmö Academy of Music in Sweden; two-day workshop programs, African-inspired Music for Marimba and other Percussion Instruments, at the Agder University College in Norway; links with the Frederikstad Music Centre at the St. Croix Cultural Centre in Norway and their Zimbabwean exchange project; The Connect Program funded by the European Commission as part of the project, The World Music Experience: Practical Work as a Path to Multicultural Music Education at the Lisbon Conservatoire, and other workshops presented locally to international groups at the University of Cape Town (Appendix D). The international project activities afforded the project team members, many of whom had never been outside the country, an opportunity to reassess values and views and, for the presentation team dynamic to grow stronger within the project methodology as well as evolve perceptions of African music dynamics in encounters with other world music approaches and impressions (Palmberg 2002, 2001; Bresler 2002; Bresler & Ardichvili 2002).

Accompanying activities. During the period of the percussion-based projects, conference papers were presented and published at the International Society for Music Educators (Isme) conference in Pretoria.
Music education in a changing cultural context (Muller 1998b), the International Society for the Systems Sciences (ISSS) conference in Asilomar, USA (Muller et al. 1994) and at Confluences, the South African Music and Dance Conference Incorporating the Symposium on Ethnomusicology in Cape Town (Muller 1997a). An unpublished paper was delivered at the International Association for Cognitive Education (IACE) conference in Stellenbosch (Muller 1997b) and a workshop with team members given at the South African Music Educators' Society (Sames) conference at the University of the Western Cape (Muller 1996b). Ongoing involvement as a part-time lecturer in percussion and music education included a module in the percussion-based approach to music education students at the South African College of Music, University of Cape Town and the Conservatoire of Music, University of Stellenbosch, as well as to general education students at the School of Education, University of Cape Town. Certain students acted as assistant presenters in the project workshops.

2.1.3 Project activities, concepts and methodology

It is not possible to relay the full scope and impact of the contributing project activities (Appendix A) in this text, partly because of their inter-related nature and because the emphasis of this study is not on extensive reporting, which has been dealt with in the respective comprehensive reports as listed in the documented data sources (Appendix C). The key concepts, methodology, activities and organisation that provided the main impetus for the development of the initiative are drawn together below to sketch as coherent and conclusive a representation as possible before listing the project outcomes (section 2.1.4) as reflected on in terms of their relevance in contributing to the integrative framework presented in this thesis (section 2.2).

Project concepts. The percussion-based approach dealt with meeting points between African and Western methodologies. Percussion was used as a medium to bridge the playing and teaching styles of the cultures and to provide a way of accessing music without being reliant on prior music or instrument training. The systems worldview (Dostal 1997; Járos & Cloete 1987; Capra 1983) was the proposed paradigm for cultural integration to show that the respective methods can complement and strengthen each other in the learning process. A preliminary Cognition-Based Framework for Cultural Integration of Music and Arts Education in South Africa (Muller 1999), which incorporates whole brain theories (Sternberg 1997; Herrmann 1995; Gardener 1993), was drafted to guide and assess the impact and effectiveness of the percussion-based approach and methodology on music education (Muller 2002:5–28). The systemic theoretical base deals with unity and diversity of cultural expression: “by developing conceptual tools to understand the other, one highlights the extend to which they can complement and influence each other in terms of engaging in a holistic perception of the world in which we live” (Muller 2002:6). The position was taken that, not only should we consider the nature and content of African and Western art forms and practices (ontology), but also the diverse teaching approaches and methodologies that accompany them respectively (epistemology) and, particularly, the impact they have on each other in a shared environment to create new education
methodologies. It was emphasised that, while South Africa represents many cultures, the reference to African and Western in this context refers to the broad distinctions reflected in each respective worldview (Muller 1998b). The need to assess the impact, appropriateness and effectiveness of the percussion-based approach on participants and their classrooms led to the introduction of action research methodology (McNiff & Whitehead 2006; McNiff 1992), which informed the criteria by which the evaluation of the transfer and contextualising of project activities and outcomes occurred (Jansen & Nkabinde 2000; Cowan 2000).

Project activities, methodology and organisation. The percussion-based approach inhabited the sound creation story as a guide and inspiration for unfolding its activities and methods.

Content activities and methodology. From the outset, emphasis was placed on creating conducive environments for the respective activities in preparation for the emergence of new experiences. Great care was taken in setting up appropriate mediating spaces for realising project ideals and letting go of old, outdated approaches and attitudes. In workshops this was achieved partly by creating an atmosphere of ntsomi (Xhosa for storytelling) around an mbawula that became familiar project associations where participants gathered in a spirit of mutual sharing and discovery. For example, some participants arrived with a certain degree of expectation that they would be given material to note and take directly into class. However, they were encouraged to leave their notebooks aside to preserve a certain continuity of experience and uninterrupted practical activity that other learning styles offered and to develop alternative modes of memory retention. Some of the activities included storytelling and enacting (Tracey 1986), Xhosa songs such as Majola (attributed to a man from the Pondo people in the Transkei) and action songs Bhombela Westimela (about a train), West African djembe drum rhythms and Shoshangane drum and percussion rhythms from the Eastern Cape with traditional dance, gumboot miners' dances and tincan dances. There were also amadinda log xylophone rhythms (Kubik 1994, 1969, 1960) and township marimba songs, many from Amampondo such as Skotiaro and struggle songs Laphalala Igazi (meaning bloodshed), to name but a few (Tracey 2006; Amampondo 1992, 1989). These were interspersed not so much with Western repertoire as with its methods and technical approaches, overlapping with some African styles, incorporated into general percussion patterns turned into rhythm games, aural training and introduction to basic musical styles such as a round between presenter and participants, or call and response patterns incorporating solo and group alternations with improvisation opportunities, some jazz blues, Orff patterns, and so forth.

Organisation and presentation format. A particular presentation style developed from the meeting points between African and Western material and methods by accommodating and alternating between different learning modalities that became inextricably linked with project methodology. A balance was found between continuity of playing activities, with repetition and change, followed up with reflective discussions. The projects were organised according to a systemic stakeholder principle in which all

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11 This is a Xhosa word for a coal fire made in an empty metal drum with holes knocked in to emit heat.
Music education in a changing cultural context

contributions are maximised by the value each brings to enrich the whole (Dostal 1997). For example, presenters not only contributed their knowledge and talents, they were afforded an opportunity to acquire different methodologies and team teaching techniques that were strengthened though planning meetings. The student assistants showed promise as a new generation being schooled in both African and Western music methods while youth groups, initially incorporated to give short demonstrations while learning from seasoned presenters, became active in these methodologies which they exercised in follow-up cultural exchange projects. All the different aspects of the projects thus reinforced each other in a self-regulatory and self-referential manner while mutually reflecting from within the respective contributing and participative positions.

2.1.4 Project outcomes

The following is a short summary of project outcomes taken from participant feedback comments, presentation team notes, curriculum advisor and external evaluation reports (Axelsson et al. 2002; Muller 2002; Cowan 2000; Jansen & Nkabinde 2000):

Participants found the workshops 'driven by energy and inspiration'. They experienced 'the integration of African and Western ways as challenging and healing: different cultures are also similar at times - can see the relationship now, this meeting of cultures add to each other'. The project is 'like a bridge merging African and Western'. They found the 'sharing and co-operating exhilarating and uplifting, it improved communication' and made them 'feel a sense of community which is lacking in my life'. 'Inhibitions were overcome through cultural sharing and group learning'. This 'driving energy involves the whole body, co-ordinating and combining different activities simultaneously was difficult at first but no longer'. 'Adding new activities while reinforcing all the time, it becomes internalised and comfortable'. It 'allows free flow within structure through which learning happens and there is enough time to learn single skills'; 'repetition helps reinforce, variety keeps interest'. With 'repetition and continuity I feel I'm becoming part of the rhythm' and 'team teaching invites people in'. It 'links mind body and emotions and shows new ways of how we learn'. I 'can apply confidently now, the teaching method was good and I can relate back to the class'. 'Being inside the experience was very empowering' and 'learning how to create was very stimulating — it’s interesting to see how so much can be created from the use of simple instruments'. The project 'encourages creativity and thinking for ourselves', it 'is innovative' and 'breaks conventional settings in class', 'it is achievable and accessible'. This 'is a way to have access because percussion has great interest' and 'creativity is enhanced'. 'Percussion is an apt medium', 'percussion patterns are fascinating, creativity comes out of the patterns and one loses the fear of being creative'. Presenters enjoyed the participants 'not playing from the head so much' and the 'presentation performance got a step ahead'. The 'team spirit was great' and the 'co-ordinated approach' meant we could 'assist other presenters and add on to give energy' and also 'learn from each other', 'to give a new dimension to methodology' and share 'an interest in breaking new ground'. The curriculum advisors felt the 'project addresses a very interesting methodological process related to change initiatives in education'. For external evaluators 'it was a real insight to witness the ways in which the flexibility of percussion was used to good effect'.

The music education activities of the fieldwork journey had initially addressed the immediate needs of educators faced with changes in their curriculum contexts. From the response above, it became apparent that the percussion-based approach to music education had appropriately set out to achieve its
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Music education in a changing cultural context purpose in practice but also raised deeper implications for integration of cultural methods and worldviews as part of the education development and transformation process, as well as being cast within wider worldwide debates of cultural globalisation and world music education. These are reflected below through a summary of the main concerns that arose though the projects, namely accessibility and multiculturalism with regard to percussion as a mutual medium for African and Western contexts, viewed from a systems perspective.

Accessibility. The first key area addressed by the percussion-based approach concerned the provision of music education, which in the new dispensation promotes “[m]usic education for all” (Asmal 2000:12). For the education system this implies that “[i]ts values must reflect and celebrate the rich and diverse heritage of all our people, and create a future workforce that is innovative, critical and culturally developed” (Asmal 2000:13). This was the address given by the then national minister of education, Kader Asmal, when approached by The National Union of Music Educators in November 1999, who expressed concern for the prevailing conditions of music education in our schools.

The minister acknowledged that “[t]he education system has yet to take full advantage of the potential role that music, and the performing arts in general, can play in our efforts to construct a new national identity” (Asmal 2000:13). Yet, “at almost every school the music staff has been declared redundant” which music educators felt “amounts to official acknowledgement that there is no future for this vibrant subject” (Feenstra 2000:75). Surveys have shown that “most state-aided schools do not currently provide music education as part of their curricula due to the lack of qualified class music teachers, funding and resources” (Joseph 2002:64). Concerns remain ongoing amongst music educators that declining budgets and prominence afforded to other learning areas may relegate this field to the mere margins of education. Educational critics have added to the debate by emphasising that educators are an important resource and need to be supported by professional development as a national priority since it is they who will determine the success and mobilisation of the new curriculum (Jansen & Christie 1999). The percussion-based approach indicated that, despite the prevailing conditions, a shift in mental attitude towards cultivating one’s own creative resources can serve to dissolve the former specialised perceptions of music while enriching the music education experience.

Multiculturalism. The second key area addressed the issue of multiculturalism, which is notably absent in the teaching of music during a time of cultural democracy and transformation. Surveys attribute this to the fact that, “[a]lthough South Africa is a multicultural society, most teachers have not been exposed to, nor are many qualified to teach, African or other types of world music” (Joseph 2002:68). Multicultural music education arose around the world as a quest for equity and representation of cultural worldviews and values in the curriculum (Campbell 2001; Volk 2004, 2002; Floyd 1996). Making music education multicultural, endeavours “to seek ways to match program

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12 The Music in Schools Symposium was held at The Airport Holiday Inn, Johannesburg 19-20 May 2000.
offerings to student needs, to understand differentiated learning modalities, to develop social
transaction skills, and to gain as teachers the cultural competence to communicate music – any music–
to young people of various cultural backgrounds” (Campbell 2002a:31). The International Society for
Music Education (Isme) Policy on Musics of the World’s Cultures has based its assumptions on
multicultural music being perceived both individually and as a unit: “[t]he world of music should be
seen as a group of distinct musics, each with a unique style, repertory, set of governing principles and
social contexts” (Lundquist et al. 1998:17). The fields of multicultural music and world music overlap,
the latter reflecting the networking and communication process that has brought nations and cultures
together as a global community.

While a world phenomenon in terms of cultivating an awareness of diverse cultures, multiculturalism
has, however, a particular pertinence to the internal cultural development process of the South African
context. Evident from the emerging inter-disciplinary collaborations at national arts festivals and
conferences, was the gradual alliance between ethnomusicology and music education, a phenomenon
which at the outset of this fieldwork journey, was merely beginning to emerge. It became
increasingly necessary to clarify concepts and terminology in the musical discourse across these fields
(Burger 2001). The partnership and inquiry of interest that benefits both fields has strengthened into a
deeper understanding of music, education and culture through mutual intersection points: “music
cognition as it occurs in various culture-specific settings, questions of music teaching and learning
have drawn the considerable attention of scholars in both fields” (Campbell 2003:25).

Ethnomusicology, which came into its own as an outcome of European comparative musicology
(Myers 1993; Nettl & Bohlman 1991; Apel 1970), has since birthed a field of African music scholars
(Agawu 2003b; Nzewi 1991; Nketia 1975) who wish to tell the inside story rather than remaining a
community of musicians being researched upon by Western cultures and methods, showing that
“Africans had become more active in the study and destiny of their musical traditions” (Djedje &

Percussion. The term percussion evokes some cultural ambiguity and necessitates clarification in
terms of its use in this context. As a means of classification, the standard fourfold system (Von
Hombostel & Sachs 1914) for music instruments, namely idiophones, membranophones, aerophones
and chordophones also apply across the range of percussion instruments (Smith-Brindle 1975). This
classification system, however, appears to be more suitable for theorists and musicologists seeking a
universal scheme in their approach to scientific inquiry than to percussion players in practice. Western
music instruments are generally grouped according to orchestral categories namely stringed

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13 Regular guidance was sought from resident ethnomusicologist Deidre Hanson at the University of Cape Town and at
times with Andrew Tracey in Grahamstown. Additional knowledge in African music was gained from a long-standing
association with Dizu Platjies and members of the Amampondo neo-traditional percussion group as well as African
musicians participating in the projects and at conference gatherings.

14 Opportunities to interact and share views with African music scholars like Agawu, Nzewi, Flolu (Ghana) and Dumi
Maraire (Zimbabwe) were made possible at events such as The Durban Gathering organised by Isme from 01– 05 May
instruments, wind instruments i.e. woodwinds and brass, and percussion instruments (Apel 1970). As such, contemporary Western percussion instruments are more readily referred to by their orchestral associations and further grouped into “instruments of indeterminate pitch” and “tuned percussion” or, instruments of definite or indefinite pitch (Blades 1975:348). Performers and teachers of orchestral and solo percussion have become accustomed to setting up their methods and performance criteria according to playing techniques represented by the snare drum, keyboard mallet percussion, timpani and multiple percussion collectively represented as an instrument15 or total percussion (Muller 1990b). Performing styles are referred to by percussion instrumentalists as ethnic percussion, jazz percussion, African percussion, world percussion or global percussion, for example, or in terms of specialised areas of study as with the upcoming trend of the Western contemporary four-mallet five-octave concert marimba as a solo performance instrument (Stevens 1979). The immediate transferability of percussion playing to non-trained music environments across cultures has gained familiarity through the open drum circle or the culture-specific circle when facilitated by a cultural expert (Levine 2005; Hull 1998). The incorporation of percussion in Western music education gained popularity through Carl Orff’s Music for Children (Keetman 1950), also with the return of Orff’s approach to Africa (Amoaku 1971), and an era of comprehensive musicianship (Choksy 2001), the Dalcroze rhythm method (Jaques-Dalcroze 1964, 1915) as well as experiential music approaches that featured percussion sound-scapes in class (Schafer 1969, 1965; Self 1967).

In indigenous African music, however, the term percussion does not exist, neither is there an equivalent word for music in the African languages, although the term percussion instruments may appear in sampling of instruments in the music of sub-Saharan Africa (Nettle et al. 1992). Percussion playing is incorporated into African music as a composite genre in which drumming, dancing and singing are inter-connected rendering institutional classification distinctions irrelevant (Agawu 2003a). Regarding the term, music, “[a] review of the literature shows that African languages often do not have a generic term with the same connotation as the western ‘music’” (Mans 1997:81). The word ngoma, for example, can simultaneously mean drum, sing, tune, praise or song (McLaren 1963). Blacking refers to ngoma as “drums of the ancestors” (Blacking 1985:65). Mans has proposed the concept ngoma on a philosophic basis as a unified holistic experience for restructuring music and arts education (Mans 1997). The arts thus reinforce each other in the “African musical arts matrix” and performers are normally competent across these disciplines so that “it is not common to encounter definitive terms for each of the creative disciplines” (Nzewi 2003:13). The respective art forms arise in response to each other in an interdependent “system of integrated existence” (Oehrle & Emeka 2003:41). In the African concept of music therefore, there is no separate percussion study: “learning is an interactive performance experience, while performance is a never-ending learning experience” (Nzewi 2003:14).

15 The Percussive Arts Society (PAS), <www.pas.org>, and members of its annual International Convention (Pasic), <www.pasic.org>, regard the total percussion approach as a percussion instrument rather than a collection of individual percussion instruments (Muller 1990b).
African and Western. The choice of terms African and Western music as applied within the percussion-based approach requires some clarification. The terms were initially incorporated into project titles merely as a practical intent to capture the attention of educators seeking new methods for mixed classrooms and were employed rather tentatively with the realisation that they would warrant a more scholarly interpretation in theoretical contexts. They were originally used in the sense of a systemic epistemology, so that, while “South Africa represents many cultures, the reference to ‘African’ and ‘Western’ in this context encompasses a more general perspective that reflects their respective worldviews” (Muller 1998b:443-444). That is, the Western worldview, which has dominated our education system, tends to impose on music education a somewhat exclusive and individual instrument-orientated and specialist connotation. The African worldview on the other hand, refers to music as being essential in mediating involvement with the community, based on the principle of ubuntu from various African proverbs meaning one person defines another (Tracey 1994), as a sense of participating in the life story on the African content (Herbst 2004), and musically, “[a]s a style of human conduct, participation in an African musical event characterises a sensibility with which Africans relate to the world” (Chernoff 1979:156). This sense of community is integral to life processes and reveals interdependence in the spirit of musical participation. While formal tuition exists, it is not viewed as an exclusive or specialised study: “the standard way of learning music, in modern or traditional Africa, is the one of long exposure, immersion in the totality of its expression and relationships with life, values and morality” (Tracey 1994:273).

The systems approach proposed in this study acknowledges both the African and Western epistemological views as being inseparable and complementary in the process of nation-building. The matter of African identity is itself a complex one in terms of who constitutes a class of Africans and, regarding African music, “only a designated context can establish its precise referents” (Agawu 2003a:1). Some approaches adopt a singular and broad view as an African field of musical sound (Nzewi 2003), emphasising a consistency of practice while others accept a pluralistic view that highlights the diversity and variety of African music practices (Kubik 2001). While these distinctions are necessary in ethno-musicological classifications, delineating specific geographic areas and cultures, such as sub-Saharan Africa, the systemic view establishes a point of central reference to position the inquiry in relation to both the global and local, or unified and diversified views generally speaking, with special mention to particulars wherever relevant.

Systems perspective. The percussion-based approach, mediating a balance between African and Western teaching methodologies, supported by integration of different learning modalities, identified the following key systemic principles within which to organise and reflect the outcomes of the percussion-based projects, namely: integration and differentiation, co-operative sharing, dynamic organisation and synergy of complements. They serve merely to highlight generic principles that the project used for internal reflection and not to engage in contextualised discourse with other views in the field, which follows in chapter nine of this document.
Integration and differentiation. For African and Western methodologies to co-exist in a compatible way, their efforts should be directed towards seeking reconciliatory approaches so that new insights can emerge. In the systems paradigm the following applies: the more I integrate, the more I need to differentiate and, the more I differentiate, the more I need to integrate (Dostal 1997). A music education system that accommodates all its cultures needs to be represented from within the diversified value system of each culture (differentiated) while working to create a unity through universal values (integration). In this way, no culture imposes its worldview and methods over another and serves to prohibit "mediating multicultural experiences within a Western context, which mainly constitutes an appreciation of, and not necessarily an integration of diverse cultural and cognitive approaches" (Muller 2002:18). This approach was inculcated in the presentation team meetings and workshops, reflected in the comments of one of the African student presenters, Mzwake Hlatshwayo, interviewed on Fine Music Radio (22 November 1999), in response to the question: "what draws you to become involved in this project?", and who replied, "I enjoy the integration of African and Western music in this project, being able to teach from an integrative perspective rather than within one only" (Muller 2002:27).

Co-operative sharing. The project explored the effects of complementary partners learning from each other in an interactive environment (Donald et al. 1997). One party mediates a shift in understanding in the other by means of identifying similarities and differences between them so that new patterns of interaction can be evoked. These experiences led to the understanding that, unlike world music approaches in which the respective musicians represent their specialised cultures, no interactive methodologies necessarily exist between them. In a dynamic co-operative sharing climate, alive with emergent and creative potential, the African sense of continuity for example mutually interacts with Western progressive-oriented thought. A Western-trained curriculum advisor participating in the project remarked: "[after feeling uncomfortable with what I thought was repetition and not progression, I realised that we had, as a group, shifted to an entirely different level of concentration and effort. Our actions had started to become synchronised quite subconsciously. Our thinking had shifted backwards and forwards between the logical and the intuitive, the controlled and the free-flowing" (Cowan 2000:4).

Dynamic organisation. African and Western music reflect two major organisational tendencies inherent in their respective methodologies. Generally, Western music is graded in a series of progressive steps towards a determined outcome. Parts are often rehearsed separately and added sequentially, pausing to correct any irregularities before combining the whole. In African music on the other hand, the parts are co-dependent and are not easily isolated from their contexts for separate practice but rely on a sense of continuity and repetition for its cohesive texture. Systemically, these two organisational states are compatible and, in a shared cultural environment, one should strive to create a dynamic balance between them to strengthen the learning experience for all.
Synergy of complements. Synthesis implies that seemingly opposing concepts can be synchronised within a larger unifying context. This often arises out of the need to maintain both a state of self and a sense of belonging. It refers to simultaneous complementing and interdependent coexistence contributing to stability while at the same time increasing the energy by introducing change, as a synergy of complements (Járos 2000). African and Western music methodologies are synergistic complements in that they are mutually compatible and strengthen each other. The dichotomy inherent in these cultural expressions is unique to South Africa. A systems epistemology that supports the mutual development and co-evolving tendencies of its participating members, will result in creativity, change and complex outcomes that remain co-dependent yet self-sufficient. For example, the concept of foregrounding, which first occurred during a fieldwork recording session in which a marimba group had difficulty in isolating parts for the purpose of separate recording due to the interdependence of the musicians (Muller 1998b), a feature familiar to ethnomusicologists (Arom [1985] 1991). The video recorder was thus closed in directly over respective players using the foregrounding principle without losing the continuity of the background texture. This concept was subsequently transferred into workshop contexts and began to have a significant impact on project presentation. Ongoing cyclic patterns were stabilised through repetition while new activities were superimposed through team presentation enabling participants to fluctuate between different playing experiences without disrupting the continuity of the process. Through a recurring process of reinforced loops of activity, meaning was continually extracted for the coherence of interacting events and the learning cycle based on another systemic concept, that of self-reflection (Dostal 1997). This process enables the system to maintain or adjust its inner goals consistently within the broader goals of the greater system while remaining flexible in its functioning and contributing to the ever-changing context it serves.

2.2 Reflexive refrain: emerging integrative framework

Embodying the worldviews and methods of African and Western music-making experiences awakened the complementary relationship that exists between mythological and scientific accounts of the world. This co-dependent synergy revealed the need for unifying metaphors to mediate the search for a holistic and participative consciousness in our collective evolutionary journey that transcends cultural divisions to embrace the whole of humanity (Reason 1994; Houston 1982; Merriam 1964).
3. Education transformation through arts and culture

This chapter in the fieldwork journey is devoted to the theme of music and the arts as a healing and integrative modality during a time of cultural and educational transformation in the country, from 1997-2001. Some of the inter-related activities emanating from this theme highlight contributions made through music healing, holism and reconciliation. The main part of this chapter features a project integrating different ways of knowing through the medium of the arts, Integrated Cognitive Dispositions, along with its fieldwork component, The Wela Project, in a Gugulethu township classroom, which formed a sub-project of the Western Cape Education Department's Cognition in Education Project. This initiative, which developed out of a link with the percussion-based approach was, however, also an outcome of former activities that are briefly sketched below, showing the contexts within which they originated and how their inter-connections impacted on the unfolding of a series of related projects in pursuit of more holistic and integrative approaches to education development during a time of cultural transformation.

3.1 Music and the healing arts: holism and reconciliation

A brief summary of my personal involvement in music and healing projects, some having occurred prior to the change of government, as well as motivation for the inclusion of creative arts in national holistic health policies and practices during a time of cultural reconciliation, together with their education and training implications, are ventured below.

Music and healing. Many of the projects relating to transformation in the context of the arts originated from an earlier personal interest in music and healing. This had come into being as a concept created around Inner Resonances: Exploring the Inner Life of Sound (Muller 1991, 1989b), which consisted of contemplative percussion concerts, participation in sacred music and other festivals as well as outreach programmes for township youth during the government transition period (Appendix D). Inspired by the influx of questions that resulted, namely regarding the effects of sound on the physiology and psychology, a special interest developed in the frequencies generated by the overtone-enriched symphonic gong (Heimrath 1994), which led to a series of measured studies on the potential healing effects of selected sound samples on human processes at the University of Cape Town in 1994 involving collaborations across various disciplines and departments.\(^1\) The studies were initiated at the Department of Biomedical Engineering in the Faculty of Medicine\(^2\) under the guidance of the then Head of Department, György Járos, who was also the founding member of the biomatrix

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\(^1\) Measured studies involved György Járos, Mladen Poluta and Donovan Reese at the Department of Biomedical Engineering, Frank Bokhorst from the Department of Psychology, Adrian Jongens from the Department of Electrical Engineering, and Prof G (Gryzagoridis) from the Department of Mechanical Engineering, as the main contributors.

\(^2\) The Medical Faculty has since been renamed the Faculty of Health Sciences and the Biomedical Engineering Department is now called the Department of Human Biology.
systems group which I had joined a few years prior. The tests involved frequency spectral analysis of the sounds, holographic interferometry of the instruments used, which is a vibrational analysis method (Caldwell 1993), cognitive studies, electroencephalograms and brain coherence studies, as well as recurrence plot analysis to determine the effect of the sounds on heart rate variability of subjects (Donovan 1995; Carlson-Sabelli et al. 1994; Webber & Zbilut 1994).

The latter is a systemic analytic assessment tool for measuring non-linear dynamic systems particularly suited for rhythmical systems such as physiological systems. The methodology veers away from reductionist approaches that seek to simplify experimental preparations by attempting to limit the number of operating variables: "the systems approach has focused attention on integrated outputs as driven by constellations of inter-connected variables" (Webber & Zbilut 1994:965). The plots were based on the work of Hector Sabelli who had investigated the influence of emotional behaviours on cardiac function in which: "highly organised patterns of cardiac timing are associated with patterns of behaviour and emotions" (Carlson-Sabelli et al. 1994:419). Interest in using this methodology was initiated during meetings with Hector Sabelli at a conference of the International Society for the Systems Sciences (ISSS) in Asilomar in 1994, in which the biomatrix group presented numerous papers including my own, which explored the link between systems theory and the Plato-Pythagorean music of the spheres as an integral part of human health processes (Muller et al. 1994).

Arts, holism and reconciliation. The angle into health prompted me to visit various sound healers in the United States of America after attending the systems conference above, including Don Campbell and the Institute for Music Health and Education in Boulder, Colorado in June 1994 (Campbell 1991, 1990b). The intention was to explore training implications for the South African context, having been approached to join the committee of an organisation called Health for Africa who recognised the role that the arts could play in enhancing the nation's truth and reconciliation process (Appendix D). The emphasis on arts healing modalities had increased in the period just prior to the change of government, after the release of Nelson Mandela from prison in 1992, which was a crucial one for negotiation and policy reformulation in all fields.

The Truth and Reconciliation Commission (TRC), called into existence after the apartheid era, "affirms its judgement that apartheid, as a system of enforced racial discrimination and separation was a crime against humanity" and created an opportunity to hear the stories and statements of both victims and perpetrators during the period of apartheid in South Africa, to discuss the concepts of forgiveness, the value of acknowledgements and apologies, reconciliation and restitution or reparation (RSA 2003b; Krog 2002). Members of Health for Africa (HFA): National Forum for Holistic Health and Health Care, active during the first half of the 1990s, had recognised the need for exploring the

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3 The biomatrix systems approach and a description of the biomatrix group has been introduced in chapter one and is dealt with in greater detail in chapter five of this study.

viability of arts as a healing modality during the period of the TRC, primarily in partnership with other organisations active through HFA initiatives in terms of guidance offered for drafting constitutions and for approaching parliamentary portfolio committees to initiate change. It was the credo of the organisation that inspired my involvement, particularly its systemic notion of healing as a holistic approach, which is the description adopted in this study:

Holistic healing is an approach which sees humankind as one with the universe; sees the individual in his or her total context; does not fragment people in the healing process, but rather enables them to become more whole. Any holistic healing process is based on the self-healing power of the individual and furthers the person's essential unity and integrity.

Forum activities were often punctuated by references to pre-apartheid South African governor, General Jan Smuts, who has been hailed as founder of the concept of holism and a forerunner of contemporary systems theory (Smuts 1926), and it is believed that his ideas can be revived for today's context (Járos 2002, 2001a). Health for Africa, which had regional representation in the country's major cities, Johannesburg, Durban and Cape Town, had been responsible for co-ordinating national activities around various, often controversial, health issues such as the recognition of complementary and alternative health systems, and was instrumental in liaising with statutory and professional bodies in leading initiatives to form representational registration associations for upcoming health organisations (Appendix D). Working in close cooperation with national and regional chairperson, Michael O'Brien, a clinical psychologist appointed onto the African National Congress's (ANC) advisory health commission (ANC 1994a), we explored the implications of representation for the arts in a healing capacity.

Based on the positive interest shown in Health for Africa workshops, the forum approached me to chair an interim steering committee for the forming of a national representative body in creative arts therapies. Two critical issues arose: a divide in attitude between tertiary level specialisation in the respective arts therapies versus collective complementary creative arts therapies that was believed would expedite the nation's healing process and, the fact that neither option had available training courses in the country, a prerequisite for setting up a statutory body. I decided at this point to focus attention, instead, on training possibilities for the healing arts.

Training for integrated arts in healing and education. Two primary concerns had emerged at this point in the fieldwork journey, namely the lack of training available in the country for arts in a holistic and healing capacity as mentioned above, as well as the lack of provision for an integrated approach to arts mediums. With links made through Health for Africa, I set up a series of workshops to explore creative arts in healing and education at the School of Education at the University of Cape Town from 12–25 March 1997 by inviting two qualified creative arts therapists from the Institute for Arts in Therapy and Education (IATE) in London to demonstrate the integrated arts approach with the aim of addressing the concerns expressed above. These were organised in two parallel programmes.
Afternoon sessions were presented in conjunction with the university’s Teaching and Learning Resource Centre (TLRC) aimed at educators and lifeskills workers of the Western Cape Education Department. The evening sessions consisted of members co-ordinated through former Health for Africa events. About a hundred participants including educators, creative artists, lifeskills facilitators, curriculum advisors, psychologists and other health practitioners contributed to the process. The programmes included interactive drama, music, art and movement activities with reflective moments aimed at discovering aspects of self as well as opportunities for shared feedback. Participant questionnaires, discussions with relevant organisations and meetings arranged through the media to invite public input, contributed to the evaluation feedback report from which the following is a short summary extract (Muller et al. 1997):

What drew participants to the workshops was the provision of an integrated arts approach, to enrich and expand the existing mediums within which they worked or, the possibility of pursuing it as a career. They welcomed the attention to holistic and affective dimensions in their need to explore greater creativity that would develop and empower them as individuals and in their practice. Many wanted ‘to equip’ themselves ‘for the many changes that are taking place in our education’. The most valuable aspects of the course were found to be its practical nature and the variety of activities on offer which made the theory more accessible, learning non-verbal and intuitive ways of communicating, collective sharing of ideas and getting in touch with innermost feelings. The different arts were perceived as flowing one into the other as a natural extension of each other. Participants felt they needed more time to discuss and explore how the activities could be transferred to their workplace. Those in education felt it was needed within mainstream and not just arts or special needs. Participants expressed that there was a definite need for ongoing work of this kind.

Different cultural groups were present and they felt that, while great respect and consideration was shown for others, the complex cross-cultural issues had not been dealt with in depth by the international presenters. It became apparent that, were we to develop training for our own unique healing and transformation process, it would need to be culturally representative both in content and methodology in order to provide an arena for profound insight and understanding of our changing personal and social contexts. This turned the attention to the need for a conceptual framework that would accommodate an inquiry of this nature. It would need to bridge the different cultural ways of viewing and understanding of self and the world that in turn could impact on emerging methodologies in arts and education.

A cognition-based framework. The International Association of Cognitive Education (IACE) conference held at the University of Stellenbosch in July 1997 provided the first opportunity to present the theoretical foundations for such a framework in a paper presentation (Muller 1997b). Later documented as A Cognition-Based Framework for Cultural Integration of Music and Arts Education in South Africa (Muller 1999), the unpublished framework\(^4\) was created primarily in order to inform the development and evaluation of cross-cultural and cross-curricular arts-based education projects.

\(^4\) The content details of the framework are not discussed explicitly in this text since they have become absorbed into and elaborated in the system of ideas presented in this study, and have also become contextualised in project feedback documents by informing evaluation criteria referenced throughout the fieldwork journey.
The framework emphasised the need for integrating a wide variety of cognitive styles and diverse cultural worldviews, which gave rise to the criteria by which the project outcomes could be evaluated. The purpose of the systems-based cognition framework was to promote mutual appreciation for the diverse cultural communities in South Africa while creating a unified cultural experience in line with the post-apartheid quest for nation-building. This systems approach to cognition impacts therefore, not only on the nature and content, i.e. the ontological dimension of cultural education but also on the methodologies, i.e. the epistemological dimension used in different cultural teaching and learning approaches.

The Arts LifeSkills Project, as it became known, was motivated by the National Education Department's art and culture curriculum advisor, Farouk Houssain and supported by the Western Cape Education Department's curriculum advisors in arts and lifeskills through continuing meetings convened by Nicol Faasen (Muller & Faasen 1997). It was funded by the national Department of Arts and Culture, Science and Technology (DACST), the Teaching and Learning Resource Centre (TLRC) of the University of Cape Town and various participating bodies (Appendix B). The cognition-based framework was co-developed within the percussion-based approach running concurrently at the University of Cape Town in finding meeting points between African and Western worldviews and methods. Owing to the presence of departmental curriculum advisors represented on the projects, the cognitive approach captured the interest of the curriculum support division and an invitation was extended by Hendrik Mentz to participate in the Western Cape Education Department's Cognition in Education Project in collaboration with principal curriculum advisor in arts, Gill Cowan. This provided further opportunity to explore and demonstrate the effects of arts and culture in an integrated cognitive approach to education.

3.2 Cognition in education: a curriculum development project

Contribution to this initiative was twofold. The first was participation in a project, the Cognition in Education Project, of the Western Cape Education Department which is summarised in this section mainly from the project’s comprehensive report (Green et al. 2000). It consisted of collaborative participation by various stakeholders and role-players in investigating different approaches to the development of cognitive capacity in education. The second is a sub-project of this initiative, Integrated Cognitive Dispositions (Muller & Cowan 2000) and its practical classroom component (Appendix E), The Weia Project (Muller et al. 1999) which was one of six parallel cognitive approaches chosen to participate as sub-projects within the main project, and which is discussed in the next section (section 3.3).

The term cognition itself metamorphosed through many meanings, influenced by different cognitive approaches until a description was eventually agreed upon by all participants (refer to concepts and terminology in section 3.2).
Introduction and project context. The Cognition in Education Project, an initiative of the Western Cape Education Department’s curriculum services, was initiated in 1998 (Mentz 2000a, 2000b). The project had set out to investigate the potential of different cognitive approaches in the context of South African education by making clear connections to the curriculum. Project members worked collaboratively with educators using a mediation approach, and all were briefed in action research methodology (Cowan 1999; McNiff 1992). Project group meetings were ongoing and elicited rich discussion regarding the nature of cognition and mediation in the curriculum. The project was monitored by a broad mandating steering committee. It comprised colleges of education, General Education and Training (GET) organisations, the International Association for Cognitive Education (IACE) and its South African component (Iacesa), the In-Service Providers Coalition, Teacher Unions, the Publishers Association of South Africa, the three resident universities namely, the University of Cape Town, the University of the Western Cape and the University of Stellenbosch, the Western Cape Education Department and various co-opted members. In addition an executive committee was formed consisting of senior department curriculum officials and a group of cognition specialists and service providers that made up the respective sub-projects outlined below.

Description of contributing cognitive approaches (sub-projects). The sub-projects that were chosen to represent the project were required to integrate cognitive education into the curriculum using a mediation approach and to build in an action research component. Four of the sub-projects investigated the adaptation of internationally established approaches to cognitive education in the classrooms namely, Cognet (Greenberg 1990), Instrumental Enrichment (Feuerstein et al. 1991), Knowledge as Design (Perkins 1986) and Philosophy for Children (Lipman 1993, 1991). The fifth, Mediated School Development (Vygotsky 1978), considered the role of cognition as integrated into whole school development. The sixth, our sub-project to be discussed in the next section, Integrated Cognitive Dispositions (Muller & Cowan 2000), concerned itself with “promoting aspects of cognition that are frequently overlooked in education” (Green et al. 2000:4). That is, by placing emphasis on the different cognitive dispositions touched upon by arts education, especially in the South African context, and by highlighting the need for including variations in the understanding of the term cognition.

Aims of the project. The aims of the project were to make the cognitive underpinnings of the curriculum explicit by identifying and clarifying cognitive needs in the curriculum and to develop a shared understanding of relevant concepts amongst participants. The project also aimed at investigating different approaches to cognitive education as outlined in the sub-projects above, and to produce collaborative learning support materials for education (Green et al. 2000).

General assumptions. Generally, it was accepted by the project group that cognitive functioning is to be understood as underlying the acquisition and use of knowledge, skills, attitudes and values. And, cognitive education assists in equipping educators and their learners to develop explicit cognitive
functions to understand their usage. It was felt therefore, that the different cognitive approaches mentioned above, and the cognitive verbs such as “to identify”, “to reflect”, “to analyse” and “to understand” as implied by the new national curriculum, should be mediated explicitly to learners (RSA 2001b). This view “is all the more essential in the present situation of rapid cultural change and cultural ambiguity” and cognitive education “is fundamental to accelerated human development in this country to enable movement away from a tradition of rote learning” (Green et al. 2000:2). Cognitive education is therefore an inherited imperative of the new curriculum and it is necessary to devise approaches to cognitive education particularly suited for the South African classrooms.

**History and phases of the project.** The first phase of the project began in 1998 with the Western Cape Education Department’s division of curriculum services in consultation with the International Association of Cognitive Education in South Africa (Iacesa). A process was begun to identify the extent and level of cognitive education in Western Cape schools. The initial group also set out to define relevant terminology and explored related concepts that would make references to cognitive education explicit in curriculum policy documents. Classroom research was conducted identifying viable approaches and involving interested educators. By the close of the year the department had secured a budget which included the President’s Reserve Fund (PRF), and established an infrastructure for representative participation. The six parallel sub-projects described above were identified and training of educators began the following year.

The second phase in 1999, and third phase in 2000, saw the continuation of sub-project activities with their educator participants. Frequent clearing-house sessions were held to inform the whole project group of progress. Additional research and administrative support task groups were also formed. In the joint meetings, sub-project teams identified issues common between them as well as differences in their understanding of cognition and cognitive development. Further links between sub-project activities were facilitated by a roving observer, the eye in the sky, to gain a view of within from without, and to forward reports to the whole group and the executive committee. Almost a hundred educators from twenty-five primary schools, mainly from former disadvantaged areas such as Mitchell’s Plein, Athlone and Gugulethu were versed in cognitive education and invaluable information was gleaned. The external evaluator continued visits into the classrooms in an attempt to gauge the impact of the respective sub-project training approaches on educator’s teaching practice (Ainslie 1999). A notable and extended clearing-house meeting occurred on 13 November 1999 at the Western Cape College of Education in which each sub-project presented its programme and provisional findings together with their participants. The education department’s director of curriculum management, Brian Schreuder, handed formal certificates to the participating educators who had demonstrated their work and who had reflected on the personal meaning of the process in this session. It gave the project group an opportunity to gain common understanding of the different approaches and applications, and to identify future directions. Further links had also been established.
nationally as well as internationally with the International Association of Cognitive Education’s (IACE) Carl Haywood of Touro College as project advisor.

**Concepts and terminology.** It had become apparent to the group that there were many different understandings of the key concepts and terms used in the project. To arrive at a shared understanding, the term cognition was referred to as the mental and psychological processes of apprehending, reflecting upon and constructing knowledge and meaning. It involves a wide variety of mental activities at different levels of complexity and is inextricably linked to the affective dimensions of being human. Cognitive education was seen as education that renders explicit the processes involved in thinking and learning and which develops cognitive capacity in learners through a mediated approach. The word mediator, from the Latin *mediare*, means to be in the middle (Mentz 2000b). The term mediation was generally defined as “the process by which a more knowledgeable person assists a less knowledgeable other to reach a level of cognitive functioning and to take ownership of new knowledge beyond that which would be possible alone” (Green *et al.* 2000:5). Although each sub-project used its own mediation approach, the mediation context was characterised by dynamic and shared engagement. Through the contribution of the Integrated Cognitive Dispositions sub-project (Muller & Cowan 2000), the group came to acknowledge that learning can also be mediated through the arts in a social context in addition to conventionally accepted mediating methods as a powerful means for constructing meaning.

**Cognition and the curriculum.** Since the announcement by the national ministry of education of the new outcomes-based curriculum in March 1997, it became the expressed intention that all learners would develop into critical thinkers, creative decision-makers and independent, lifelong learners (RSA 1996b; Spady 1994). The need for cognitive education had been written into the official core curriculum as a key aspect of education. The curriculum implicitly embodied many of the principles of cognitive education in the original critical outcomes now referred to as learning outcomes, and in many of the specific outcomes in the new Revised National Curriculum Statement (RSA 2001b), such as becoming an effective lifelong learner and a productive and responsible citizen which requires that learners become aware of their own cognition. Learners are also required to integrate cognitive processes in everyday life situations. The first critical outcome states that learners will be able “to identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made” (RSA 2001b). In this outcome alone, there are five cognitive verbs namely, identify, solve problems, make responsible decisions, think critically and think creatively. When learners become aware of their thinking by making the processes involved in cognitive activities explicit, they are engaged in cognitive education. The assumption that “effective thinking and intelligent reflection can, and should be, taught and learnt, rather than depending simply on innate ability” underlies the cognitive education movement (Green *et al.* 2000:6). While cognitive education has been an implicit part of all good education through the ages, approaches to develop cognition explicitly are newly emerging. Educators need to enable learners to make the underlying cognitive
processes explicit by means of mediation. They therefore need additional training support in order to become effective cognitive practitioners. This, the project found, was particularly relevant in the South African situation since many educators from former disadvantaged communities were not exposed to a standard of education that developed their cognitive capacity.

Guiding vision. The project envisioned that by full implementation of the new curriculum in 2008, educators would consciously be “creating a climate conducive to the development of thinking and explicitly mediating the development of cognition in their schools and classrooms, using approaches best suited to their own contexts” (Green et al. 2000:46). Training to make cognitive education explicit should remain ongoing with participants and be closely co-ordinated with the curriculum so as to continually inform educator development.

Project conclusions and recommendations. Despite the considerable variety of cognitive approaches used in the project, certain outcomes that were in agreement between participating sub-projects served as a guide for the way forward. The project found that, although the curriculum emphasises cognition, teachers and learners are not provided guidelines on how to engage in these cognitive processes. The goals of the curriculum have much in common with cognitive education in that they aim to develop critical and creative thinking. Educators, however, require further support in translating these new ideas into practice. They need to develop their own cognitive capacities and their ability to create optimally cognitive classrooms to be in a position to mediate these dispositions effectively to their learners. The participating educators recognised that they need to experience and construct new meanings for themselves before they were in a position to confidently bring change into their classrooms. The sub-project, Integrated Cognitive Dispositions, and its classroom component The Wela Project (Muller & Cowan 2000; Muller et al. 1999) described below, explored different cognitive dispositions as mediated through an arts approach.

3.3 Integrated cognitive dispositions: an arts-based sub-project

Integrated Cognitive Dispositions (Muller & Cowan 2000) and its fieldwork component The Wela Project (Muller et al. 1999) formed one of the parallel sub-projects of the Western Cape Education Department’s Cognition in Education Project (Green et al. 2000). Its key theoretical contributions and some illustrations from the practical fieldwork are summarised below. While the workshops and classroom contexts with participants were vibrant and dynamic, the summary carries the usual dry tones of formal departmental report writing, although it did, however, help us to make the arts-based cognition approaches that we were using explicit, and thereby, to draw attention and recognition for other cognitive dispositions in the project group.

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3 Ways of knowing is the preferred term used in my own work to encompass a broader perspective of what is usually termed cognitive, although the latter was retained in formal project partnership contexts.
Background context. An invitation to participate in this project was extended on account of the cognition-based focus of the music and arts projects formerly discussed, as well as the various connections to the department's curriculum services, more notably the participation and monitoring role of principal arts curriculum advisor Gill Cowan in the percussion-based approach who became interested in the project's methodology (Cowan 2000). We were approached by Hendrik Mentz, the Cognition in Education Project co-ordinator to serve as co-leaders of the Integrated Cognitive Dispositions sub-project although the name only emerged later on in the process. Since the other sub-projects were based on international cognition models, the strength of our approach rested on the uniqueness of our cultural dynamics but also made it more difficult to become accepted by the group since we had no recognised cognitive theory. It took a few submissions to the executive committee with rigorous peer review before the proposal, a joint effort in terms of our respective strengths, was finally accepted (Mentz et al. 1999).

Aim of the sub-project. The main aim of the Integrated Cognitive Dispositions sub-project was to raise some key issues within the context of cultural and educational transformation within South Africa pertaining to the use of the arts in mediating alternative cognitive dispositions and its impact on education practice. More specifically, its goal was to involve action research methodology within the personal context of educators' practice, as realised through its field component, The Wela Project, to enhance understanding of curriculum outcomes and the integrated nature of cognitive dispositions as mediated through the arts.

Assumptions and key issues. The arts form a valuable medium for personal and cultural transformation in education since they contain within them a natural mediating and healing propensity. The sub-project identified the following key issues:

- Faced with a society in a state of complex cultural transition, educators raising a new generation of critical and creative thinkers need to employ a diverse range of learning and teaching modalities.

- Conventional views of cognition have supported the more rational, logical and analytic aspects of learning while the intuitive, emotional and aesthetic cognitive processes have remained under-utilised in education.

- The arts have the ability to create a diversity of mediated expressions by accessing a wide variety of learning modalities including stories, symbols and images that present a necessary and refreshing contrast to the more formal learning settings.

Theoretical-conceptual framework. The theoretical-conceptual framework drew on various concepts that informed and guided the sub-project. The cognition-based framework served as a means of understanding and developing cultural integration in arts and education (Muller 1999). According to systems principles proposed in the framework (Cloete 1999; Dostal 1997; Capra 1996), the purpose was to include different and complementing modes of meaning-making by integrating different cognitive dispositions in learning processes so that certain types of intelligence were not favoured over
others. It featured multiple intelligence theories (Gardner 1993), thinking styles (Sternberg 1997, 1990), whole brain models (Herrmann 1995) and intelligence fields (Mentz 1996). The process was driven by action research (Cowan 1999; McNiff 1992).

**Description of the sub-project.** The sub-project leaders believed that the process of effecting change is best explored by siting the project directly within the schooling community it serves. This is especially relevant since educators often expressed that education curriculum initiatives were lost in a plethora of wordy and mystifying documents that do not relate directly to the reality of their classrooms or explain how they can effect change in their practice. After introducing the concept of the integrated cognitive approach in a workshop at the South African College of Music at the University of Cape Town to a small group of educators as prospective participants, project committee members and departmental curriculum staff, the project moved forward into a Xhosa-speaking Gugulethu primary classroom to work with a teacher and her fifty grade three learners. The *Wela* Project, as the learners termed it, which means to bridge or cross over i.e. to the new cognitive approach, gave the project members an opportunity to participate directly with the learning experience in the context of the classroom dynamics which changed significantly once the project was introduced. Despite the initial response that there were no arts and culture activities in the school, we were able to import their extra-curricular activities including traditional Xhosa songs, dances and practices of the community into the classroom to enrich their learning experiences with regard to cognitive approaches. The activities were then transferred and extended by the teacher's creative initiative to other lessons across the curriculum. The project culminated in a mini cultural festival with teachers attending in traditional dress, presented to the whole school. The classroom sessions and mini-cultural festival were video recorded in full by Edumedia, a resource division of the WCED, and photographed with planning and reflection notes from meetings with the teacher documented into action research journals, as well as some external media coverage (Gold 2000; Dyk 2000).

**Sub-project outcomes.** As project facilitators, we noted a shift in the participating educator's awareness of the merging of formal and informal knowledge in the classroom, and the potential role of arts and culture practices in bringing this about. We also “noted a growing recognition by the educator of the value of arts and culture as a medium for accessing and transferring knowledge, fostering a sense of relatedness and developing self-awareness” (Green *et al.* 2000:13). The action research method with its cycles of planning, acting, observing and reflecting, gave the teacher some insight into how her own inherent and personal knowledge, experiences and values can shape one's practice (Muller *et al.* 1999; Cowan 1999; Mentz 1999; McNiff 1992). It also became apparent how important mediation techniques that link learners in ongoing dialogue with their community contexts are in bridging real life experiences to cognitive awareness in the curriculum.
Evaluation and reflections. A particular strength of this sub-project was the intensity of its personal approach and direct classroom impact as well as the richness and complexity of data generated for interpretation using the action research method. Learners and their educator created dynamic opportunities in the classroom from which learning possibilities emerged that could be integrated across the curriculum. A willingness to engage in the arts and in the change process was shown by the educator and learners. “Rigid and predictable structures had given way to more open-minded and creative approaches. This type of change dynamic takes courage to initiate and sustain” (Green et al. 2000:12). The teacher, who was exceptionally dedicated, reported great excitement about a paradigm shift in herself and “a change in my attitude to my learners” especially toward a slow group who were “suddenly showing their other side of learning and understanding”. Some previously sidelined rural learners who had relocated to this urban township, were “showing their cultural knowledge, displaying wonderful skills to learners and gaining respect, a great improvement in their thinking skills which is my major concern”. She showed great appreciation for our, the facilitators’, input: “they’ve opened my mind” (Muller et al. 1999).

Closing. Project conclusions and recommendations indicated that educators need to be made aware of modes of cognition not readily accepted in education, which could enrich human development and cultural transformation that impact directly on education methodologies, curriculum development and classroom practice. Educators are encouraged to recognise arts and culture as a suitable medium through which to access, activate and enliven dormant aspects of the learning process across the curriculum as embodied knowing (Varela et al. 1993). And also, to broaden the conventional views of cognition into a more inclusive, holistic and integrated approach that will benefit all types of learners, evidenced in the curriculum outcome “to demonstrate an ability to access creative arts and cultural processes to develop self esteem and promote healing” (RSA 2001b) and to see arts and culture as “an integral part of life, embracing the spiritual, material, intellectual and emotional aspects of human endeavour” (RSA 2002).

3.4 Reflexive refrain: emerging integrative framework

Music and the arts have shown a natural propensity, not only for healing the divide between cultures, but also between different ways of knowing, reflexively connecting and enlivening different aspects of the self. It has revealed the need for direct embodiment of the arts as participatory expression of the world’s own being in which the mythical and scientific mind is contained and complete within itself (Alvesson & Sköldberg 2000; Tarnas 1996; Riceour 1978).
4. Music and arts mediation across the curriculum

In this chapter, the themes presented in the preceding two chapters converge in a creative mediation approach which serves as a guide for general educators to explore some of the ideas, concepts and activities experienced through the former project initiatives across the curriculum. The former initiatives emphasised the shared complementary aspects of African and Western methods as explored through music education and an integrated approach to different ways of knowing enriched with arts and culture in a mediating capacity. Both these initiatives had resulted in educators realising the need to become more creative in the way they approach education as a whole. In the text below the ideas raised in these previous excursions are taken forward with greater focus on educators in their classroom and curriculum contexts. The majority of the discussion in this chapter is thus devoted to a project named the Creative Mediator Programme and its precursor, A Practical Course in Creativity across the Curriculum, initiated by myself and co-ordinated through the Education Development Management Centre (EMDC) of the central metropolitan region of the Western Cape Education Department (WCED) from 2002–2004.

4.1 A practical course in creativity across the curriculum

Certain circumstances that had influenced the inception of the Creative Mediator Programme were, amongst others, involvement in the design of a web-based curriculum creativity course for the former Cognition in Education Project, centred on the ideas presented in the Integrated Cognitive Dispositions approach, which was destined for the training of Western Cape Education Department personnel to enhance delivery and service to the teachers they serve (Appendix D). However, the arts-based approach to cognition and mediation had been effective particularly because of the intensely personal process of direct contact in the classroom as reflected in its methodology of creativity and some reservation arose around the mode of delivery which had become withdrawn from classroom practice and redirected though the up-coming web-medium. After some reflection, I decided to approach another channel to continue the more personal and dynamic delivery mode to educators. It led to reconnecting with education department personnel involved in my former projects, in this instance Mackie Kleinschmidt, now head of curriculum advisors of the Education Management Development Centre, central metropolitan region, known as EMDC-Central. A meeting was held with him at the Cape Town Teachers Centre on 24 December 2001 to share the ideas behind the creative mediation approach for educators. In this meeting attempts were sought to align the approach with curriculum needs and to contextualise it within departmental delivery protocol. This resulted in an invitation to present the creative mediation approach and methodology as a practical course in creativity to all department curriculum advisors of EMDC-Central, so that we may best find a way to take the process forward. The more direct and personal approach with educators and curriculum advisors within this
programme accounts also for the personal reporting style in the chapter feedback, a situation I felt delivered more honesty than being disguised in formal departmental report-writing jargon. This section includes a summary of the two primary processes that resulted from the above meeting. The first is an all-day workshop presented at the Cape Town Teachers Centre to the curriculum advisors at EMDC-Central of the Western Cape Education Department. The second is an introductory course in creativity, a direct follow-up of the aforementioned workshop, presented to a group of educators at the Cape Town Teachers Centre (Appendix E).

**Workshop with curriculum advisors.** The all-day workshop was titled Bringing Education in Harmony with a Systems View of the World, and presented to a group of thirty curriculum advisors at EMDC-Central in all the curriculum learning areas, after being given a full set of the draft Revised National Curriculum Statement (RNCS) documents (RSA 2001b), on 25 January 2002 at the Cape Town Teachers Centre. The content chosen for the workshop had arisen during the preceding discussion with the head of curriculum advisors. The main concern of the department of education was that, while the national education system was well underway with the implementation of the new curriculum, it was apparent that many educators were still grappling with the concept of change within the remains of an old and outdated system (Jansen & Christie 1999). There was general feeling that our schools, which should be leading the field of change, were not changing as fast as the creative minds they are serving. Much of the responsibility rests with a generation of educators schooled in the old methods, as recent music education surveys still show (Herbst et al. 2005; Klopper 2005; Rijsdijk 2003; Naude 2002). With the experiences gleaned from the former education development projects, the all-day workshop progressed through a series of experiential and participatory activities in systems theory, creative arts approaches and integrative ways of knowing, with reflective feedback discussions to demonstrate its proposed concepts (Muller & Kleinschmidt 2004).

The systems worldview is contained in the following critical curriculum outcome which asks learners “to demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not occur in isolation” (RSA 2001b). The workshop promoted the concept that, rather than focus time and attention on undoing difficulties we should, instead, offer learning opportunities that are more uplifting, inter-connected and life-supporting, in harmony with the systems view of the world (Dostal 1997; Banathy 1994). What this would mean firstly, is that educators shift their conceptual focus from information as separate objective facts that need to be assimilated, to learning that takes place in contexts of relatedness. To achieve this, one would need an understanding of the nature of knowing from a systems view in which it is no longer the representation of an independently or pre-existing world but the continual bringing forth of a world in the context of

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1 There are eight learning areas in the curriculum, they are: Languages, Mathematics, Natural Sciences, Social Sciences, Arts and Culture, Life Orientation, Economic and Management Sciences, and Technology. Each learning area is represented by a curriculum advisor within the education department’s EMDCs, and each of these in turn representing certain allocated regions within the Western Cape Province.

2 The learning outcomes are streamed into generic critical outcomes across learning areas and specific outcomes for specific learning areas (RSA 2002).
personal meaning (Varela et al. 1993). This involves learners as whole beings, the way they view the world, the way they learn (Sternberg 1997, 1990; Herrmann 1995; Gardner 1999, 1993) and their concept of self (Jung 1971), in other words as co-creators of the learning experience drawing from experiential learning modes (Boud & Miller 1996; Heron 1996, 1989, 1981a; Boud 1993; Boud et al. 1993; Dewey 1938). The task of the educator shifts from relaying information, to mediating appropriate learning environments that reflect the self-organising and creative dynamics of the learner from within which new meaning-making contexts can emerge (Van der Hoorn 1995). The outcome of the day's workshop was that curriculum advisors recognised the unique configuring of concepts and, with the infusion of music and the arts, the cultural relevance for the South African context. They expressed that they felt energised by the activities and welcomed the new ideas but voiced concern in terms of how it could be translated to educators since their daily tasks were burdened with insurmountable administrative demands. Having no ready-made quick-fix manual as they are accustomed to, it was agreed that I would explore the implications of the approach with a group of educators using action research methodology (McNiff 1992) in co-operation with Mackie Kleinschmidt and relevant curriculum advisors from EMDC-Central.

A course in creativity for educators. A small group of ten primary school educators from different cultures, and across all learning areas, responded to the invitation brochure distributed to schools around the Western Cape central metropole area by the department (Appendix E). The course was endorsed by Mackie Kleinschmidt: “this course, which uses a systems approach, relies on mediation for an integrated and holistic approach in teaching and ensures a shared understanding through the collaborative nature of the process which can greatly enhance education” (Muller & Kleinschmidt 2004). Four workshop sessions were set at the Cape Town Teachers Centre from March – May 2002. The course in creativity, titled Creative Mediator: A Practical Guide for Educators, explored music and arts-based creative mediation methods relevant to general education in a practical and experiential way from four different perspectives. They were:

- **The role of worldview in education.** Educators were introduced to the systems view of life in relation to education approaches (Dostal 1997; Van der Hoorn 1995; Banathy 1994; Járos & Cloete 1987) to enable a shift from predetermined and prescribed content-based education methods to self-generated meaning-making learning experiences.

- **Educating the whole learner.** Educators were invited to reorganise the way the mind works by enlivening and integrating the whole human being in the learning experience through different ways of knowing (Sternberg 1997; Herrmann 1995; Gardener 1993; Jung 1971).

- **Mediating self-organised learning experiences.** Educators would need to mediate a central unifying space through diversified excursions that would encourage uniqueness in learners’ own development in bringing forth their world (Varela et al. 1993).

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3 Since the year’s budget had not yet been allocated by the department, I opted to go ahead all the same even though teachers were asked to make their own financial contribution, something they are usually reluctant to do given the amount of compulsory departmental workshops they are expected to attend.
• **Bringing harmony into the learning system.** The approach inspires confidence in the natural ability of learners to organise their own learning experiences (Heron 1996; Boud 1993) and by introducing accessible arts-based creative activities to explore in class the creation of harmonious, co-operative and shared learning environments (Donald *et al.* 1997).

Concepts and activities shared in the initial one-day workshop with EMDC-Central curriculum advisors were mirrored with this group of educators in an experiential and participative way. The following comments are drawn from participants' reflective discussions charted at the end of each workshop and an evaluation questionnaire on completion of the course, presented in the full feedback report (Muller & Kleinschmidt 2004):

Participants were drawn to the course primarily for new ideas for their class. The concept of mediating creatively appealed. They were hoping to find new approaches to: stimulate learners' creative minds, create co-operative and non-competitive environments, find individual creativity within the group, 'take the teacher with the new system', feel connected yet free to move on one's own 'like cogs in a wheel with everything fitting together'. What they gained from the experience is that 'there is a greater possibility in our classrooms and in human potential than we expect'. They found confidence to take on creative activities which never occurred to them before. Others found a whole new aspect to their teaching method, 'a greater awareness of educating the whole person'. Mostly, they 'came away having gained practical activities and ideas for class as well as something to reflect on for self'. The main concerns were: 'how to transfer the almost internal knowledge to the external since certain learners are more receptive than others', 'how can we bring this harmony about in the classroom to sustain large group activities'. In closing, they commented that 'meeting as we have, there has been a shift, beyond words but more in feeling, of application of a working harmony in my classroom'. 'How can one mediate creatively within the whole context of education, within every aspect of the teaching day'. 'We've grasped the ideas behind the workshops, we need more assistance in class and practical suggestions to find connectors to the curriculum'.

After this introductory course, EMDC-Central contracted and funded me to continue the workshops with the same group of educators in the second half of 2002. The progress of this group and the gradual deepening and expansion of the Creative Mediator Programme from this point on, with its emerging concerns and new evolving contexts, is discussed in the sections below.

### 4.2 Creative mediator: a guiding method for educators

This section traces the extension of the workshops as the Creative Mediator Programme from midyear 2002 to midyear 2004 in three phases. During this time numerous structural as well as content changes were made to the evolving programme to accommodate diverse contexts that arose from participants or the department. These included moving the programme directly into schools, working with the whole staff at some schools or with only a few committed teachers from others, and spanning across city and township schools as well as all grades, from pre-primary to matric, also special needs schools. The primary purpose of the programme was to inspire educators, generalist and specialised, to gain new ideas and insights in their practice, to enliven the learning process with creative activities and to develop creative mediation methods across the curriculum. The key concepts around the systems worldview and integrated ways of knowing remained although the programme became increasingly...
more practical in educators' personal contexts, extending into a greater awareness of issues surrounding the concept of self. The creative methods included a range of music and arts-based activities adapted for different learning contexts as appropriate. Activities such as rhythm patterns, story enactment, graphic depictions, composing and writing scripts or choreographing debates with props were used across learning areas. The progress and outcomes of each phase appear in a short summary below including reflections of the personal research process that accompanied the unfolding programme, which constantly needed adapting during this period. All data references are taken from the full feedback report (Muller & Kleinschmidt 2004).

**First phase 2002.** As the Creative Mediator Programme took on its extended term in the second half of 2002 with the original ten primary school participants, the group had expanded to include additional members from their staff totalling about twenty participants in all, including all cultures but with fewer Xhosa-speaking, across the peninsula. The presentation format had also changed to accommodate workshops at some of the school premises on a rotation basis, as well as initial planning and closing meetings at the Cape Town Teachers Centre. Additional collaborations, class visits, interventions, school consultations and presentations occurred during this period supplemented with numerous telephonic and electronic communications. Often further co-participants joined in at the hosting school. This arrangement led to more collaboration between teachers at and across schools, with the presence and participation of myself as presenter providing a sense of continuity. Greater emphasis was placed on direct application of practical activities in curriculum contexts, assessing self in action and feedback to the whole group. The workshops continued its practical exploration of key concepts. More creative mediation skills were acquired and developed through participatory activities and self-assessment questionnaires devised by myself as presenter and consultant.

The programme focussed on mediation methods rather than content and participants were encouraged to find their own pace and intervention strategies in class and to report back to the workshops. For a period of weeks, transfer to the classrooms seemed very slow and even cautious until one educator had an impromptu breakthrough experience, reported to the group by a colleague, which affected the whole group resulting in an intensive creative spiral of follow-up activities amongst participants. This particular grade six teacher and her learners were having a rather interrupted day with pupils coming and going for school photographs on a continual basis. Eventually she began to introduce one of the rhythm patterns we had work-shopped. She divided them, with half the class following a three-pattern and the other half a four-pattern. Later other rhythms were added which learners created themselves. She noted in her journal:

The class became completely absorbed in this activity and also really enjoyed it. Pupils came and went – when they returned to the class they just picked up one of the patterns / it allowed for this free flow. I was amazed at the positive ‘vibe’ amongst the pupils. It united them and yet allowed them to express their own creativity. When eventually we stopped the activity the pupils were chatty, and bubbly – in fact some carried on their own rhythm patterns by beating on their desks. They found it hard to give up! This was an unplanned,
unrehearsed teaching experience. I had doubted that I could facilitate such an activity. I lacked confidence and courage. I was amazed at how easy it was to manage/control and how successful it was. We had fun.

Within a week following this experience, I received three successive invitations from the other participants in the same school to observe their creative mediation activities in class, each having developed their own personal style. We had worked around the theme of sound creation myths as a basis for exploring creativity in the curriculum and teacher two had incorporated these into a geography lesson in which her groups had made up sound creation anthems for the different nations. The principal had come to hear of this and visited the class, inviting them to perform to the whole school in an assembly. This prompted teacher three, the arts and culture teacher to collaborate with teacher one using the class music period and English oral lesson to put together sound creation stories which the learners made up themselves and enacted with music, costume and props. Whilst visiting this presentation, teacher four asked me to return the next day to observe her grade fours who had scripted a short presentation from a set work in collaboration with the drama and music teacher who had overheard the idea in the staff room. The principal was again invited and this excerpt presented to the whole school, setting off a whole new cycle of creative events. Initially, the other three teachers had remarked about the first “yes, but your kids are so creative” which they assumed since many of the learners were also studying music. It was the comments of the general learners, however, that eventually changed their minds as with one eleven-year-old: “I was very much alive and I could hear and feel the creativity moving and going on inside of me”.

At the following group workshop, I presented my perception of these experiences to them as a creative spiral showing how they had triggered each other, to elicit discussion. The participants became very verbal and enthusiastic, many of them voicing the very systemic concepts I had been trying to get across for some time. There was no longer a need for presenting concepts; instead, I became a listener tying invisible threads together to lift new insights into the picture. For example, during the break at this session, a participant asked whether the others had heard of the discovery of a new tenth planet. After the break, I managed to thread this back into the discussion, connecting the naming of planets with the notion of sound creation myths. The conversation spontaneously lifted to a whole new level including reflections on the music of the planets and the effects of sound on the human being and on the consciousness of society. One participant who had been absent and not aware of our theme and discussions, had faxed through her creative mediation activity plans which were based on the planets and an invitation to accompany her pre-schoolers to the planetarium to attend a well-timed show of an educational journey through the planets. Once the participants realised these chain of links, an inexplicable feeling of a collective sense of knowing beyond the ordinary was coming into play with this group. The participants, who had previously been caught up in the customary curriculum stress of compartmentalised lesson planning, were beginning to see the significance of identifying patterns and the power of relatedness as well as the enormous amounts of unexpected creative potential that it
unleashed within themselves and their learners. At the close of this three-month series of sessions, participants made the following summarised comments about their experiences with the Creative Mediator Programme:

The creative mediator is seen as a bridging agent between different subjects and temperaments. With this approach learners have found something that binds them all yet at the same time is like a personal revelation. It provides space for learners to be creative rather than telling them what to do. It is designed in such a way to give them the opportunity to have ownership of what they are doing. It is 'theirs', no one is the same; it leads to freedom of expression. There is individual expression within the joint environment, feeling part of a larger process. It accommodates different levels of ability and they become accommodating amongst themselves too. The programme encourages uniformity but not to the detriment of individuality. The individual is challenged while the feeling of unity provides a way of bringing it all together. The creative activities have a unifying power and natural organising ability. Learners are in a certain growth phase and the creative mediator allows channels for them to express and organise their feelings. The mediator gives the tools to guide learners to express themselves creatively. They [learners] don't have the barriers and self-consciousness that we have. Some hold back in some parts, feel more secure in others and self-regulate this. One can use the creative mediator approach to diffuse conflict in class or to enhance something in the curriculum. Enthusiasm from these activities carries right through the day. It is an outlet for excessive energy and lack of concentration. It brings focus. It has a place for calming. It restores a rhythm, a pattern, some kind of structure. It is exciting. It works! Even with no creative background, it is a practical guide. The energy doesn't stop, one jumps to different brain areas, alternating analysis with ideas. It's a whole brain experience in itself, learners remain active and energetic. The creative mediator changes flavour from time to time. It links the general class with arts and culture. It gives different perspectives of an experience. There are links for new approaches across subjects. Feel touched by the direct experience of knowledge. It allows for the general teacher to become more creative with the learners. Creative mediator is for all teachers, it is teacher friendly, not just for arts and culture. We would like to continue and put more of it into practice.

This round of sessions had created a greater presence in class applications within the school and curriculum contexts. Educators had internalised much of what had previously been presented to them as new concepts and were appreciating the changes they were experiencing together with their learners. Feedback of this process to EMDC-Central opened up another possibility for 2003.

**Second phase 2003.** Based on the reported outcomes of the above group, Mackie Kleinschmidt approached me at the beginning of the following year, in 2003, to investigate whether the Creative Mediator Programme would be able to assist some of the struggling schools in the Learning Schools Programme (LSP) with extremely low pass rates. These were secondary schools situated within the Klipfontein Corridor, exiled black and coloured communities who had been racially segregated by the group areas act under the apartheid regime. Three high schools, in Langa, Bridgetown and Manenberg, accepted the programme in addition to the original primary school group who continued. It was decided to site the workshops, consultations and class visitations on a rotation basis between each of the respective schools. Initial meetings with principals and co-ordinators, followed by a demonstration workshop at each school, resulted in different presentation formats for the different groups ranging from whole staff development sessions to smaller groups of interested members.
Context. From the outset it was clear that a whole different context of needs had come forward. An environmental and contextual needs survey was conducted with each of the new groups who shared similar concerns as can be seen from the summary below:

Situated within sub-economic areas, these schooling communities are plagued by multiple socially induced factors. These include high unemployment rates, crime and violence, drugs and gangsterism, poverty and alcoholism, abuse and unwanted pregnancies. The effects of these conditions on school children is under-estimated and often misinterpreted. With the lack of positive role models, the children become inclined to emulate these behaviours while others adopt a laissez-faire attitude to life. The domestic demands on the school child include house keeping and child minding. By the time they come to school, learning is 'the last thing on their minds'. The teachers feel that the community expects too much from the school, which they see as a 'safe haven', happy to leave their troubled children in its care. The parenting community, who does not become involved in the affairs of the school, expects them to provide a 'quick-fix' solution. The schools feel that they lack the time and resources to assist with these problems which should be dealt with in the homes. The learners regard the school as a prison. The grounds are encircled with electric fences and security personnel 'to keep trouble out and learners in'. It is the last place they want to be. The teachers are under considerable stress from both the education department and the community. They ask 'what about me as a person, how do I feel about my job, will I survive?'. They find the teaching depressing at times since a large percentage of learners are unappreciative and show little respect for them. This impacts negatively on their self-esteem as a teacher. The education department is seen to be shedding it’s good principles, becoming more prescriptive rather than descriptive, which they feel has worsened since the new national education system was implemented. They feel that they are not capacitated enough for the demands of their job description. They just seem to be covering red tape and protocol while their learners lack stimulation and positive attitude. The communities have become victims of what they call a 'learnt helplessness' in which expectations fall on others. Most days teachers ask themselves, 'how am I going to work today?' They believe that one cannot solve the problems of today with the methods of the past.

These are perspectives posed directly by the educators and usher in a host of complex and contradictory issues such as the desire of many to see the return of corporal punishment as a solution to the above, the lack of which they blame for most of these circumstances. Thus these teachers remain, as one principal repeatedly utters, demoralised and de-motivated.

Workshops. When the programme began to workshop its key concepts and creative activities with these groups, participants seemed enthused and responded with excitement especially within a whole staff presence: “this is what we have hoped for, perhaps it can bring in some light to our dark situation”. However, the moment participants were asked to adapt and transfer some of these activities to their classes, many of them became reticent and even resistant and the programme lost many members. Rather than dismiss these teachers, they were asked to share their change of mind. Reasons offered were “this approach won’t work here, it is too idealistic for our learners”, “it is too abstract, too theoretical, we need a magic formula that can work fast”, “my learners don’t deserve this, they are too undisciplined”, and, “it feels like a luxury”. Others felt that “it will make the learners’ behaviour more disruptive”, and, “if I include these activities there will not be enough time to serve my lecture”.

Some of the educators were under the impression that the workshops were part of staff development team-building initiatives of the department and did not initially consider any links with their classrooms.
They continued, "we come from a second-rate education of the past and carry a lot of baggage with us, we are overburdened and don't want to take on any more". Some said "we don't want to explore, we want to be told what to do" since the programme, which is non-prescriptive, asks of them what it is they want to do. During the prompting session alone, a shift of mind occurred. Their comments began to change to "we do want to be more creative but don't know how to go about it" and "we agree that learner's feelings and values are being left out of the lesson, we want to create real life scenarios that capture their imagination – maybe it's the teachers that should change!". Also, "creative methods that are not prescriptive, this is empowering!" they remarked. Those who wished to explore something different to improve the quality of their teaching were invited to move forward so that the creative mediation methods could be revealed to them.

Classrooms. The following observations are drawn from the school in Manenberg, where I attended a number of classes to gain a general impression before working more closely with some teachers. On the way to one classroom, we passed a learner standing outside the principal's office being expelled for throwing a stone and injuring her teacher in class. Many teachers lock their doors and we have to knock and identify ourselves before being admitted. The classrooms are overcrowded. This is worsened when absent teachers' learners double in with guardian teachers. The desks are battered and there are many broken windows. There is some throwing about of desks and learners hitting each other with the broken pieces. It takes about half the lesson time to quieten them down. Learners move about freely, walking in and out of the classes during lesson times as they please. Not much learning takes place. As a rule no homework is given because no homework is ever done. In one class of forty learners that I attended near the beginning of the day, only eighteen remained in the last period, the others having jumped the electric fence during the day.

Teacher. The following comments were made whilst spending some time with the arts and culture teacher of this school who has had no training in this learning area, one of those with whom I worked more closely. The learners are "uninvolved, disinterested, they don't co-operate and work with you". I "don't see my work in the learners, there is no point where teacher and learner meet – I'm not reaching the learner". Sometimes, "to not have a noise in class, I get them to write down from the chalkboard". Some "don't even write word for word, but letter for letter". "A lot of them don't know what they're writing, they don't think anymore". Most "take arts and culture as a free period". The image the teacher adopts to cope with these circumstances is that of a disciplinarian, raising her voice in an occasional threatening tone to command attention, asking them to be at their best behaviour because they have a guest, yet ignored by the learners. Back in the staff room urgent meeting are taking place around disciplinary issues, teacher unions and crisis management.

Learners. When teachers from this school asked whether I would work with their learners, I agreed and we found quite the opposite response than expected. From the list of comments translated mostly from Afrikaans (three languages are spoken at this school, namely English, Xhosa and Afrikaans),
learners “were initially surprised, found it exciting, enjoyable and energising, a change in class, a difference, refreshing, it opens the mind, keeps the mind from wandering, it made us happy, it was unexpected”. They “liked the teamwork, everyone does something, it is interesting, takes concentration, there is co-operation and it attracts your attention”. They also commented with a hint of amusement that they liked their teacher being one of the participants in the activities. The teachers remarked that afterwards, the learners “showed discipline, were more attentive, stimulated and many smiles appeared on faces”. It surprised them that “those who don’t usually communicate became more co-operative”.

Mediation. Making the shift from teaching to mediating appears to be the most direct way to bring about a change in the teacher–learner relationship as well as connecting the learner with the learning process. This can be illustrated by two brief examples experienced in the above groups. The first was a geography task in which learners were given an atlas and a blank map of Africa and asked to fill in the names of all the countries. One learner who finished early was asked if she knew the names of the countries. She answered “yes”. Yet when I named a few countries and asked her to indicate them on a blank map without reference to the atlas, she could not name one. This incident was mentioned in the staff session, to which the teachers unanimously exclaimed that the learner had scored a hundred percent having accurately transferred the names of the countries. If this were the desired outcome it would indeed be so, but if the learning outcome was to know the names of the different countries, the opposite holds true, in other words zero percent. When mediating, the whole issue of connecting learners to their learning and bringing them to attain learning outcomes needs to be made clear and explicit. The second example dealt with racial conflict existing in schools of mixed coloured and Xhosa-speaking learners. We put together a life orientation task asking each cultural group to bring forward a music event, a rap and a traditional Xhosa song, to learn from each other in the hope of fostering shared understanding. The teacher ended off by saying “let’s see which is best”. A simple systemic shift would have redirected this competitive closing comment to a co-operative “let each do their best”. This round of sessions had given me an opportunity to explore issues with teachers directly in class and to demonstrate how meaningful it can be to know when to capture these moments and turn them around. A succession of such insights and interventions can lead over time to a long-term shift in the learners’ sense of taking responsibility for their own involvement in the learning process and in attaining co-operation in class.

Third phase 2004. By the start of the next year, in 2004, the number of groups had doubled to eight to include two additional secondary schools from the above areas and two primary schools through prior connections, one of which was a special needs school. The creative mediator approach became intensified especially after an intriguing spontaneous debate arose in a Langa school around “culture versus civilisation”, triggered by a grade ten set work, an abridged version of Nelson Mandela’s Long Walk to Freedom (Mandela 1996). The class was divided in their opinion, one group believing that traditional culture is something of the past and should make way for education and civilisation,
challenging the other group who felt that culture should be strengthened in education. This topic was carried forward into the teacher workshop where the usual concerns prevailed, "how to get learners connected to learning" in classes of over sixty since it takes half the period "to collect their minds". Regarding arts and culture, the teachers recognise that "the learners are naturally talented in this area". Yet they feel that the education department "encourages career subjects like maths and science and not life learning support". "Arts and culture has no life here". Again, no traditional music was found in the curriculum and very little in extra curricular activity at these schools. Teachers felt that to become educated in arts and culture, they should be learning about Western art-forms. A series of collaborations were formed in these schools between arts and culture and the languages for example, extending into other learning areas using arts as the basis for mediating the lessons. Language teachers brought forward additional skills and interests such as drama and directing, and learners put together entire "curriculum productions" around their scripts, prose and poetry writing, set work enacting and composing. The results were astounding, where learners worked through the break times and often spontaneously presented their classroom creations to the rest of the school on the field, in the absence of school halls. On some of these occasions we worked alongside crowded municipal emergency relief operations that had moved onto the school grounds to assist victims of the neighbouring Joe Slovo informal settlement whose houses had been destroyed by fire. It merely remained for us to find the connectors to the learning outcomes of which they were in abundance but not identified and made explicit by the teachers. Learners responded that the programme "has shown us how to wake up our minds" and there was general agreement that "culture and civilisation" could indeed live side by side. Teachers responded that "creative mediator has brought out more creativity, the children have outdone themselves, we didn't expect that much from them, they did excellently and surprised us". They showed appreciation "for bringing this kind of teaching into our classrooms". The file, with feedback comments, teacher interviews, programme and journal notes together with personal belongings, was stolen in a hold-up robbery on 10 June 2004 at one of the Langa schools. I was later told that these armed intruders frequently enter the school grounds to interrogate teachers and learners who do not report this to the police for fear of losing their lives.

Closing. By the close of this phase in 2004 the Creative Mediator Programme had developed a much closer and more personal working relationship with participants in their learning contexts. Being in the classroom gave a better sense of how teachers and learners approach and perceive learning and enabled us to generate more direct and continuous feedback. In general, there was reluctance on the part of some participants to write journal notes, which prompted me to capture and note comments wherever I could. Some said they were uncertain about the consequences of writing down negative feelings and circumstances, a few saw it as extra time-consuming work and for others it was not the custom of their culture to express their feelings for discussion to people they do not know. Although, theoretically we have attained a democratic education system since 1994, "conditions in the schools remain vastly uneven and disparate" (Davidhoff 1997:101) leaving teachers in poorly resourced,
windswept and desolate areas demoralised. "The situation today is that even though segregation in schools is outlawed, the gap between the affluent schools and the poor schools is as big as, and in many cases bigger, than before 1994" (Breidlid 2003:100).

Although those engaged in in-service training "understand that teachers have a far deeper contextual understanding of their situation than any outside consultant, and that these understandings need to be made conscious to actively inform the change process", "consultants can and do bring critical expertise and freshness of insight into a situation" which together "can create a valuable starting point for a meaningful process of change" (Davidhoff 1997:101). With the creative mediator approach, the whole concept of action research had shifted to become more participatory in nature (Reason 1994). In this case, "the researcher is more dependent on those from whom data come, has less unilateral control over the research process, and has more pressure to work from other people's definition of the situation" (Elden 1981:261). Creative mediator learnt not to define anything in advance but to draw out experiences from teachers through encouragement and inspiration in which they are given time and opportunity to prepare their own premise for change, when often, their endeavours exceeded all of our expectations. During this process a dominant presenter-expert presence gave way to that of co-learner and co-operative partnership in participants' contexts, with a need to remain open to change in order to take in their circumstances so as to render my contribution relevant and meaningful to them on their terms: "teachers need to own the process of change" (Davidhoff 1997:101). After a period of building mutual trust, the concept of creative mediator became personified and embodied in their worldview and practice, which enlivened their sense of self. An awareness of greater patterns at play in our learning process featured more strongly, especially when learners surprised them with their own creative initiative and they learned to trust the natural flow process. Teachers also realised that learners are far more knowledgeable of their own abilities and capable of organising their own learning experiences, which meant less time taken up by teacher intervention. They enjoyed the changing dynamics in the classroom, which had moved away from conventional settings. The degree of confidence and courage taken by educators to tap into their own creativity during this programme showed their willingness to change and to become lifelong learners.

4.4 Reflexive refrain: emerging integrative framework

Being in the midst of the after-effects of a divided society, with the sense of an abundant yet untapped wealth of creativity has brought the realisation that we are dealing with a situation far beyond a mere redressing of the imbalances of an immediate past, but a worldwide phenomena as a collective humanity that has been dominated by the Western mind. With the emergence of a participatory epistemology of consciousness, we are no longer objective reflectors of a separately existing universe which our systems of education and inquiry still inhabit. We may have come full circle in recognising deeper patterns of life based on the reconciliation of the mythical and scientific in preparing for our own self-transcendence and connectivity with a unified universe (Tarnas 1996; Reason 1994).
Part C. Music as metaphor: a system of ideas

Part C presents music as metaphor, which emerged through the need for a meta-frame of inquiry during the fieldwork journey. It contains chapters five, six and seven, which draw together the major theoretical contributions that inform the metaphor-aspect underlying the meta-frame of inquiry, namely the systems worldview (chapter five) and speculative music philosophy (chapter six), into a proposed system of ideas (chapter seven). The systems worldview, the new science of holism, considered to be the paradigm of the information age, has come to replace the industrial and mechanistic age metaphors of the world as a machine, by depicting the world as a web of interconnected patterns of organisation. This view resonates with the ancient speculative music of the spheres metaphor which perceives the visible universe as an underlying organised harmony. The system of ideas proposed in this study integrates these metaphors to inspire a frame of mind that embodies holistic and aesthetic modes of understanding, rather than explaining, the world in which we live. It acknowledges metaphor as a basis of our conscious realisations and abstract conceptualisations.

Metaphor as a mode of inquiry. Metaphor, with its former associations to literary romantic rhetoric, was reclaimed in the 1980s as an agent of conceptualization across domains of thought (Spitzer 2004; Lakoff & Johnson 1999, 1980; Ortony 1993; Romanishyn 1989; Von Eckartsberg 1989; Johnson 1987; Bateson 1985; Keeney 1983; Ricoeur 1978; Black 1962). Based on the recognition that "the original presentation of reality is metaphorical" (Romanishyn 1989:6) and, that "metaphor opens up a world which reflects a way of seeing" (Romanishyn 1989:7), elusive meanings can be made available to us by permitting subtle understandings to emerge: "[m]etaphors are the very means by which we can understand abstract domains and extend our knowledge into new areas" (Lackoff & Johnson 1999:543). Metaphor therefore questions our existing assumptions and clears openings for new experiences by employing our ordinary conceptual resources in extraordinary "ways of putting ideas together to reveal new systematic connections between different aspects of our experience" and to "show us ways to extend our metaphors and other imaginative structures to deal with newly emerging situations" (Lackoff & Johnson 1999:542). In whichever domain of thought, metaphor sets up "a state of high creative and perceptive energy" that "involves bringing together previously incompatible ideas in radically new ways" (Bohm & Peat 1987:33–35). Metaphors are thus by nature systemic, dealing with pattern and complexity by making connections across different modes of inquiry from which new meaning possibilities can arise: "[m]etaphors are prime examples of the connection of meanings across otherwise disparate domains of meaning" (Holder 1995:19). They serve to enrich the cultural and aesthetic dimensions of connecting with our existence (Bateson 1985; Keeney 1983). Thus the conventional definition of metaphor, as its etymology informs us, namely the "transferring of a word from its literal signification" (Skeat 1993:282), from the Latin *pherein*, meaning to transfer or carry, and *meta*, meaning beyond or to rise, becomes extended to new domains of thought that invoke a process of raising up from the physical to the metaphysical. Worldview is "a consistent constellation
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of concepts, especially metaphorical concepts, over one or more conceptual domains” in which “[t]he entities and actions that are characterized by our conceptual systems, including our systems of metaphor, characterize our ordinary metaphysics” (Lackoff & Johnson 1999:511).

Music as metaphor. Speculative music is such a mode of metaphysics “constituted by metaphor and other embodied conceptual structures” (Lackoff & Johnson 1999:511). The music metaphors adopted in this text share views similar to those of the ancient speculative musicians whose metaphors were “not devices arbitrarily contrived” merely as poetic or descriptive nuances but predetermined “data of a scientific sort in this ontology” (Heninger 1977:119). In accordance with the metaphysics and aesthetics of these music metaphors, “only pattern and relationship are of interest, not the particular materiality embodying it” (Keeney 1983:151). The music metaphors in this text are not articulated in the same way as with theoretical structural analysis of music compositions (Spitzer 2004; Scruton 1997; Krantz 1987), which re-entered musicology when inter-disciplinary metaphoric potential also built bridges between critical approaches in music that had drifted apart, such as “between musicology, music theory, and music psychology; between the history of theory and present-day analytic methods; and between hermeneutic and technical engagements with musical structure (Spitzer 2004:3). Spitzer defines musical metaphor as “the relationship between the physical, proximate, and familiar, and the abstract, distal, and unfamiliar”, which “flows in opposite directions within the two realms of musical reception and production” involving opposite concepts of “the body” namely, “[w]ith reception, theorists and listeners conceptualize musical structure by metaphorically mapping from physical bodily experience” and, “[w]ith production, the illusion of a musical body emerges through compositional poetics – the rhetorical manipulation of grammatical norms”(Spitzer 2004:4). Image schemata “are structures that organize our mental representations at a level more general and abstract than that at which we form particular mental images” (Johnson 1987:23–4). Speculative music recuperates the metaphors of universal harmony by rendering visible its own implicit conceptual ordering and organisational dynamics as coordinates for a scheme of images supporting the system of ideas in this study. It is the position in this thesis that attunement to the metaphors of universal harmony can shift our entire worldview and reframe our epistemology.

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1 All mention of opposites in referenced passages has been reconsidered as complements in this study.
5. The systems view of the world: a new science of holism

This chapter discusses the systems worldview incorporated into the meta-frame of this study. Generally considered the paradigm of the current communication or information age, the systems view accommodates the changing worldview from former mechanistic perspectives of the world as a predictable set of separately functioning objects (Descartes [1642] 1951) towards a holistic view with a growing awareness of complexity, inter-relatedness and the self-organising nature of the universe (Harman 2000). It emerged around the 1950s following earlier theories on holism in science (Smuts 1926) and has various proponents, sometimes referred to as systems theory, systems thinking, systems philosophy, systems science, a systems approach or systems paradigm, the systems movement or systems practice. Each proponent has developed different systems concepts and methods in both hard and soft sciences across diverse disciplines such as physics, philosophy, medicine, biology, anthropology, cybernetics, economics, engineering, social sciences, cognitive and conceptual sciences, chemistry, mathematics and psychology. The most influential representation is that of general systems theory which has many authors (Capra 1996, 1983; Laszlo 1995, 1972a, 1972b; McNeil 1993a; Maturana & Varela 1992; Bateson 1991, 1985, 1972; Checkland & Scholes 1990; Senge 1990; Gharajedaghi 1985; Checkland 1981; Koestler 1978, 1967; Weinberg 1975; Ackoff 1974; Ackoff & Emery 1972; Von Bertalanffy 1968; Ashby 1956; Boulding 1956).

This study integrates the biomatrix systems approach, a general systems theory, into its meta-frame of inquiry to assert and organise the systems criteria by which the research process is addressed and assessed (Dostal et al. 2004; Cloete 1999; Járos & Cloete 1987). The biomatrix model was co-created by an inter-disciplinary doctoral research group of systems colleagues at the University of Cape Town, known as the biomatrix group. The biomatrix systems approach is an integrated systems theory believed “to have achieved a synthesis of the various systems theories” mentioned above into a coherent theoretical framework as well as contributing some unique concepts (Dostal et al. 2004:4). A brief exposition of the systems worldview is given below, followed by a summary of the biomatrix approach and an additional schema of systems epistemological principles that serve as criteria for higher order descriptions pertaining to complex human inquiry (Bateson 1985; Keeney 1983).

5.1 A general introduction to the systems view of the world

Changes in scientific thought brought on by principles of uncertainty in physics, resulted in a move away from the predictability of mechanistic thinking towards more holistic, ecological and systemic perceptions of the world (Weinberg 1975; Heisenberg 1971). It implied that life could no longer be described merely in terms of the separate reductionist parts of the Cartesian worldview (Descartes
The systems view of the world: a new science of holism

[1642] 1951), but that it could only be understood in terms of the whole: "[t]he systems view looks at
the world in terms of relationships and integration" (Capra 1983:266). New paradigm thinking has
shifted the metaphors from perceiving a world of building blocks, foundations, structures and separate
objects to processes and principles of organisation within the context of larger wholes, forming
complex webs of relationships between different parts of the unified whole that reveal integrated
perceptual and conceptual patterns (Capra 1996; Capra et al. 1992). It is this notion of a science of
wholeness that has become known as the systems view of life. In its attempts to revive the unity of
science, systems inquiry can be seen as the trans-disciplinary study of the abstract organisation of
phenomena and the investigation of concepts and principles of organisation common to all complex
systems, providing a basis for their unification by creating models to describe them (Banathy &
Jenlink 2000).

While influenced by it, systems characteristics stretch beyond the domain of physics, however, as the
values and practices of other disciplines began influencing a change in our picture of reality. Attention
turned to the life sciences, for example, or living systems, as complex integrated wholes rather than
mechanically functioning parts that are open to, and interact with, their environments, and through
which qualitatively new properties could emerge (Miller 1978). It was found that systems concepts
and principles could be applied across disciplinary boundaries, unifying various fields of study that
had formerly been fragmented. Thus a general theory of systems began to emerge through its founders
(Laszlo 1972a, 1972b; Von Bertalanffy 1968, Ashby 1956) as “an important means of controlling and
instigating the transfer of principles from one field to another” (Von Bertalanffy 1968:80). The ability
to shift concepts across systems levels, environments and contexts, emphasised the need for
descriptions in terms of connectivity and complexity from which new insights or properties could
emerge, often in unexpected and unpredictable ways.

Thus conventional scientific descriptions of an objective world have become transformed by an
understanding of the dynamic nature of life with its inseparable network and interacting web or pattern
of relationships (Weinberg 1975; Heisenberg 1971). The perception of a process nature underlying all
visible structure was given character by Heraclitus’s dictum dating back to ancient Greece, namely
that everything flows, translated and cited in the following texts “to emphasise the absolute continuity
of change in every single thing: everything is in perpetual flux like a river” (Kirk et al. 1983:195) and
“the whole of reality is like an ever-flowing stream, and that nothing is ever at rest for a moment”
(Burnet 1930:146). To maintain continual balance in the unity of river requires principles of (self-)
organisation that mark the image of a living world unfolding and evolving towards increasing order
and complexity (Gleick 1987). Process systems approaches have evolved in the expression of human
systems applications such as process-oriented psychology (Edwards 1996; Sabelli & Carlson-Sabelli
1989; Mindell 1982) and descriptions of the natural world have gained interest as ecological systems

5.2 The biomatrix systems approach: a web or pattern of life

The biomatrix approach refers to “the process of applying the biomatrix model, a specific systems approach with associated assumptions and concepts”, which “guides the practitioner in the development and selection of appropriate methods of inquiry” (Cloete 1999:127). The key ideas of biomatrix theory, meaning a web or pattern of life from the Greek bios, life and matrix, web or pattern, evolved from the efforts and applications of the inter-disciplinary biomatrix research group, who have taken up and debated its contextual position within the broader systems community. Formed initially as a doctoral research group under the guidance of György Járos,1 at the Department of Biomedical Engineering at the University of Cape Town in South Africa (Cloete 1999; Dostal 1997; Edwards 1996), the biomatrix research group has been in existence for over a decade since the first publications referring to the term biomatrix appeared (Járos & Cloete 1987), meeting regularly to share and update concepts and perspectives as can be gleaned from its bibliography of publications attached at the end of this document (Appendix F). Each member contributes from their respective discipline which includes medicine and biomedical engineering, physics, psychology, education, organisational development, music and the arts, in ongoing participation with the specific aim of creating a coherent and universal theory with generic organisational principles across these fields.

Grounded within the main assumptions of general systems theory (Weinberg 1975; Laszlo 1972a, 1972b; Von Bertalanffy 1968; Ashby 1956; Boulding 1956), the biomatrix has a special affinity with purpose based systems (Ackoff & Emery 1972). It also recognises the process nature of systems and the union of opposites (Edwards & Járos 1994; Sabelli 1989; Whitehead 1929, 1925) reformulated as the synergy of complements in biomatrix theory (Járos 2000; McNeil & Járos 1996), self-organising systems perspectives (Kauffman 1993; Jantsch 1979) and the evolution of wholes (Smuts 1926). Other systems influences include physics (Capra 1976; Heisenberg 1971; Einstein & Infeld 1966), chaos theory (Gleick 1987; Prigogene & Stengers 1984) and fuzzy systems dynamics (McNeil 1993b). The biomatrix model was formulated in response to the perception that the general systems paradigm does not offer “a conceptual space in which to visualise systemic ideas or any kind of conceptual map of how these ideas (i.e. various systems concepts) might relate to one another” (McNeil 1993a:204). Therefore, the biomatrix model aimed “to integrate the primary general systems concepts as well as

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1 György Járos was Head of the Department and Hyman Goldberg Professor of Biomedical Engineering, Faculty of Medicine at the University of Cape Town from 1979–1995.
some new concepts into a logically coherent, mutually reinforcing and explanatory model or conceptual map of ideas” (Cloete 1999:276). Whereas classical systems theories generally identify problems around which a systemic environment is then built, the biomatrix provides a meta-context within which the issues can come under focus. It regards a system as an organised whole.

The biomatrix model embraces the holistic nature of the mind in its design and application, as asserted in the methodology of human inquiry in the first chapter of this study (Reason 1981a; Mitroff & Kilmann 1978). Thus it guides the researcher through the use of holistic metaphors, analogies and graphic portrayals of its concepts as well as inviting analytical modes of thinking, facilitating a balance between divergent and convergent mental modes. Certain biomatrix terms have been introduced, as some of the concepts were new in the systems field, conveying novel ideas (Cloete 1999; Járos & Cloete 1987). Biomatrix terms provide a sense of coherence to the model and help to distinguish it from other systems applications. In practice, however, the biomatrix terms are often replaced with general descriptions or approximations appropriate to the field in question. The biomatrix approach is not a pre-set method to be followed in application; rather, it allows investigators to develop their own unique methods within their particular contexts. Its strength lies in its ability to guide the practitioner in the transfer of concepts and principles, as well as the forging of relationships between them in their conceptual organisation, within the relevant field of discussion.

Both systems theory and the biomatrix model remain in ongoing scientific debate and development within the systems community, inviting further comment and opportunity for application. A more comprehensive rendering of the model can be found in the biomatrix text as formalised by Cloete (Cloete 1999) and associated biomatrix publications and applications referred to in this chapter and throughout the study, as well as in the biomatrix bibliography (Appendix F). Key principles of the biomatrix approach, together with its postulates and expectations are introduced and discussed in summary under the different sub-headings below. They indicate unique contributions made to the field of systems theory namely, a dual complementary systems perspective, viz. process systems and entity systems and their associated concepts, as well as identifying and formulating generic aspects of systems viz. values (ethos), purpose (teleos), process, structure, substance and dynamic organization i.e. emergent or intended governance, as well as addressing and re-contextualising some of the general systems concepts, such as spiral recursion, holism and reductionism, and systems creativity, within the biomatrix approach.

5.2.1 A dual and complementary perspective on life

Although the biomatrix approach shares the same concepts as other systems theories, it emphasises a crucial ontological and epistemological difference in the way the universe is depicted, namely that,
when faced with an area of investigation, the biomatrix approaches it from a dual and complementary perspective. In other words, while most systems approaches recognise the interaction and change between systems and their parts, the biomatrix approach considers systems to manifest in one of two ways; either as the underlying nature that reveals the inter-connected threads or flow of processes and activities, or, as visible structures superimposed over these, the focalised fields or entities. That means one can either perceive a universe of entities interacting with one another or a universe of continual interaction giving rise to entities. The choice of perception resides with the viewer and the biomatrix model facilitates a shift between them. This is an important distinction made in the biomatrix, derived from the dual wave-particle nature in physics (Einstein & Infeld 1966). It introduces a view of life as a field of interchangeable matter, energy and information traversing space and time (wave-perspective) in which the focalised entities of our observable world (particle-perspective) emerge from a more subtle underlying flux (Bohm & Peat 1987; Bohm 1980). The biomatrix places equal value on either of these views as an independently recognised system in its own right, highlighting complexity and relatedness in life.

These complementary views invite, not only different ways of perceiving, but also different approaches in the way we conceptualise their respective organisational dynamics. It requires that we re-assert our mindsets flexibly to acknowledge and fluctuate between both these inseparable natures of existence. The biomatrix approach encourages the researcher to move recursively between the complementary perspectives, which are co-emergent, in other words they mutually create and sustain one another. In this way, we may generate or uncover new insights in an existing situation that could even lead to a transformation of the original state. The biomatrix resembles and represents this complex, inter-related and interacting web of process strings and focalised entities that exist in physical and conceptual space. The dual perspective can be visualised as a multi-levelled and multidimensional universal web consisting of interwoven process strings or threads, coming together as focalised entities or knots, radiating out again as threads to be connected to even further knots, using the analogy of a net (Figure 5.1).

While the biomatrix diagrams were conceptualised and co-developed within the biomatrix group, each of the biomatrix members have presented their own renditions in their respective works, publications and theses. The diagrams in this chapter more closely resemble those found in the most recent major biomatrix texts (Dostal et al. 2004; Cloete 1999) but are drawn in my own hand with personal touches.
The dual perspective thus gives rise to two complementary types of systems in the biomatrix, namely a continuity of flow-like process systems and focalised field-like entity systems, both of which are discussed in more detail below.

5.2.2 The process perspective of systems: a sense of connectivity

The process perspective, which in the biomatrix is perceived as a specific type of process-based system, arises around its strings or threads of activity processes. Within this view, each string or thread within the systems web can in turn be comprised of further strands. In the biomatrix, what directs and holds them together, is their shared purpose or outcome from the Greek *teleos*, goal. Thus, they can be conceptualised as goal-directed arrows representing clusters of purpose-based process threads in pursuit of their shared goal (Figure 5.2).
The biomatrix, unlike other systems approaches, acknowledges that processes do not merely manifest as a transformation of interacting entities, but actually have an equal and objective existence in their own right as process systems giving rise to entities. The process systems in turn can be identified in one of two ways, namely by tracing their actual flow of activities, or, by superimposing an additional conceptual projection that brings to light a specific underlying pattern of processes. The first way is to trace the flow of connectivity and continuity in a system through the actual flux of substance known as mei i.e. matter, energy and information. In the biomatrix this is essentially a dense network of interactions between points of transformation (Figure 5.3).

![Figure 5.3 Tracing the activity flow in a system as a continuity of processes](image)

The other way, and this is one of the most meaningful and insightful conceptual contributions made in the biomatrix, is to extract the purpose (teleos) strands from an existing web of mei substance i.e. the activity flow, and to reconfigure them as an additional conceptual projection onto a separate process matrix. In so doing, the activity strings become re-identifiable as independent thread-like process (teleos) patterns, an additional conceptual configuration super-imposed over the inherent flow of the actual substance of activities (Figure 5.4).

![Figure 5.4 Conceptual projection of process patterns superimposed over activity flux](image)
Often new relationships and contexts are identified in this way by focusing on dynamic patterns of organisation underlying actual activities in the network of flux within its substance of mei.

### 5.2.3 The entity perspective of systems: focalised activity fields

The entity perspective of a system occurs when one observes its activity field, that is wherever process strings cluster around a point of attraction, forming dense-like focalised entities. These focalised entities are positioned within the continuing process strings as a two-way flow directed outward as an exo-system and inward as an endo-system from the position of focus or reference in the biomatrix.

That which keeps the focalised field cohesively centred on itself as a whole is its central field or centro-system. Three further fields are added to this picture to facilitate the linking process by means of tapping. They are the outer tapping field or exo-tapping system, the inner tapping field or endo-tapping system, each of which reaches out to enrich the central tapping field or centro-tapping system which taps into itself while linking with the outer and inner environments respectively (Figure 5.5).

![Figure 5.5 The focalised field-like entity system](image)

The boundaries between these interacting and overlapping fields remain fuzzy (McNeill 1993b) which is a natural phenomenon of reality, as is the fractal nature of patterns within patterns in complexity theory (Gleick 1987). However, it is not the distinction of the boundary that is dealt with in the biomatrix, rather the identification of the focal attraction, the core values (or *ethos*) around which the field of associated processes arises. The extent or depth of the investigation depends on the focal perimeter chosen for the field of investigation such as a wide scope or narrower detailed focus.
When positioning field-like entities in relation to each other in space, a systems hierarchy naturally arises (Figure 5.6). The biomatrix refers to this as holarchic organisation, as wholes within wholes (Koestler 1978) or systems within systems much like a hologram (Talbot 1991) which extends into both its inner and outer directions relative to the level of reference. Once the entities in the field of focus have been identified, the investigator determines the levels of organisation of the respective interacting entities in their relationship to each other. These are typically comprised of at least three levels of organisation to distinguish the inner, central and outer environments of the level of reference.

Having identified both the focalised field-like entities and flow-like process activities in the dual perspective and linked their sub-systems and supra-systems in a holarchy within the web of life (Figure 5.7) one can begin to take a closer look at the generic aspects of the system under observation.
The systems view of the world: a new science of holism

5.2.4 The generic aspects of systems and their relationships

The biomatrix approach proposes that systems comprise generic organisational patterns. It responds by presenting itself as a multidimensional matrix of all those aspects of a system that are considered universally inherent or generic, and their relationships to each other. The generic aspects of systems are distinguished in the biomatrix as values (ethos), purpose (teleos), process, structure, dynamic organisation (intended or emergent) and its substance or mei (matter, energy and information). They each represent a different systems quality in pre-figured relation to the others, although membership functions may overlap as they all, to a certain extent, contain aspects of each other (Figure 5.8).

The generic aspects are considered to exist within an environment referred to as the biomatrix space, which is essentially described through its matrix of holarchically organised flow-like processes and focalised field-like entities. It refers to both physical as well as conceptual space, since our perception of reality considers them a unity, recursively generating each other (Keeney 1983). A distinction is made between processes or entities originating in either of these spaces, i.e. physical systems or conceptual systems, although their fields may overlap. In the biomatrix they complement and enrich one another. In the diagram (Figure 5.8), the mutually interacting generic systems aspects are pre-positioned in relation to each other as they appear throughout the systems holarchy. They are:
Values. The values of a system refer to the field of organisational guidelines associated with the nature of a particular system and the governing principles that direct and inform the behaviour of that system. It determines and discerns the preferred values in the interest of the system. It provides meaning and embodies a sense of self of the system.

Purpose. Purpose refers to the expected or preferred outcome towards which the system aspires, or is being directed or attracted towards. It may be recognised as an aim, goal, objective or ideal of the system, which either emerges or is projected onto the system. It may refer to an end state or to the means by which it achieves its values.

Process. Process in a system refers to the actual change or flux of activities over a period of time as it proceeds towards its end state. It may be regulated towards its purpose i.e. goal-directed, or remain open-ended with no preferred or predetermined outcome, or a combination of both.

Structure. Structure in a system refers to the activities or processes that appear relatively stable over a period of time, and which can be perceived as a form or configuration i.e. its spatial structure in physical or conceptual space, or as an action pattern i.e. its temporal structure over time.

Substance. The substance of a system refers to all that makes up the system and that which renders it perceptible to us, whether physical or conceptual. Its mei i.e. matter, energy and information constituents co-exist and are able to transform one into the other as it flows through a system's inputs and outputs in an active or supportive capacity.

Dynamic organisation. Dynamic organisation in a system collectively refers to the organisational guiding factors within a system, of which there are two predominant and interacting tendencies namely, emergent organisation and intended organisation or governance. Emergent organisation refers to the system's innate ability to organise itself through the interaction of its different aspects. This means that the outcomes of a system are not necessarily predetermined and may give rise to unexpected or unintended change. In complexity theory, for example, systems appear to direct themselves without any governed intervention, are adaptable and may gravitate towards more stable states by means of an attractor (Gleick 1987). Governed organisation on the other hand, is intended, planned or programmed into the system from within or without in its attempt towards attaining a preferred outcome. This mode of governance, while providing effective predetermined outcomes, may be inhibiting in other circumstances. It may hinder a system's natural unfolding potential for example in cases involving natural or living systems. These two organisational tendencies should ideally be in dynamic balance to assist the system through its natural phases of growth and creativity, maintenance and transformation.
When moving around the systems holarchy, the biomatrix invites multiple perspectives in terms of the generic aspects and encourages inter-disciplinary approaches when viewing a system, as certain disciplines become more relevant in different areas or spheres of focus.

5.2.5 Spiral recursion

The concept of recursion has been introduced into systems thinking to generate holistic images into patterned perceptions repeated over time (Bateson 1985; Keeney 1983). The biomatrix refers to this as spiral recursion because of the ability to recognise relatedness and interplay between different systems aspects as well as between levels of organisation within the systems holarchy (Figure 5.9).

The spiral may work its way around, up or down the systems holarchy in a complementary way, creating continual and often unexpected interactions and outcomes. It may, for example, serve as a useful technique for exploring the dynamic character of a system, such as the psychological process in human systems, in which events can be traced over time as manifesting a discernible pattern (Edwards 1996). This pattern can be qualitatively depicted as a methodological map to gain insight from the underlying dynamics of the psychological system where recurring events are gleaned and configured into a recursive activity spiral presented on another level of organisation conceptually.
5.2.6 Holism and reductionism

The biomatrix represents the whole complex living network and dynamic organisation of energy present in the universe. In this sense, we can know the whole but not comprehend it fully because of its vastness. We rely on reductionist perceptions to refine detail, which in turn leads to deeper understanding of the whole. Reductionist and holistic methods of inquiry into systems are thus compatible, each needing to retain respect in relation to the other: “[r]eductionism and holism, analysis and synthesis, are complementary approaches that, used in the proper balance, help us obtain a deeper knowledge of life” (Capra 1983:267-268). Reductionism, if taken to extreme, can break up the relationships in a complex network, leading to fragmented and out-of-context behaviour. Holism in the extreme can tend towards overly generalised concepts or statements, not necessarily grounded in the reality of a specific concern.

Although the concept of holism has been evolving since the beginning of the 1900s (Teilhard de Chardin 1959; Whitehead 1929, 1925), the first to actually use the term holism was South African statesman and scientist-philosopher, General Jan Smuts, in the 1920s (Smuts 1926). Seen as the tendency of nature to form wholes, it served as the systemic forerunner of Koestler’s holon and Von Bertalanffy’s hierarchy of organised wholes although Smuts has remained relatively unknown. His phrase, the whole is more than the sum of its parts, became popularised but not fully understood: “[t]he whole is in the parts and the parts are in the whole, and this synthesis of the whole and parts is reflected in the holistic character of the functions of the parts as well as the wholes” (Smuts 1926:86). The biomatrix group believes that Smuts’s ideas were ahead of its time and that they are becoming relevant again today (Járos 2002, 2001a). The biomatrix approaches the reductionism-holism issue with the suggestion that complementary modes of inquiry are needed that result in recursive patterns of analysis and synthesis and which implies integration as well as differentiation. Because of the complexity of existence the biomatrix acknowledges that many different ways are needed to gain as many perspectives as possible from a balance of both reductionist and holistic points of view.

5.2.7 Creativity, attunement and resonance in systems harmony

Central to the biomatrix, is the concept of symmetrical organisation of complementary processes and structures, relative to a common point of reference. The physics principle of symmetry and complementarity refers to two (or more) systems or processes co-acting in a mutually reflexive and recursive way, which is closely related to the concept of union of opposites (Sabelli 1989), synergy of complements (Járos 2000; McNeil & Járos 1996), also explored as binary opposites in philosophic and critical theory (Levi-Strauss 1963). In this sense, the flow of energy in a system is considered symmetrical in that it is in a continual state of flux between the inward and outward environments; and
complementary in that it is mutually interdependent, the one not being able to manifest without the other. The biomatrix asserts that "[t]he explicit statement and formalisation of this complementary and symmetrical organisation of teleos in all systems is one of the greatest contributions of the biomatrix model towards systems theory" (Cloete 1999:59).

Closely related to this, is the concept of resonance, which is a mutual attunement between overlapping and interacting systems so that they partake of each other's energy fields by means of tapping energy from adjacent inner or outer environments. Other systems approaches refer to this as integration, albeit largely the integration of these systems into a larger whole. With the biomatrix however, integration is considered to be a symmetrical and complementary process that originates from the reference level, integrating the system with its outer as well as its inner environment. This central or reference level of organisation in the biomatrix is uniquely conceived of as emerging from the interaction of its inner and outer environment, resembling the ouroboros symbol (Chetwynd 1998). It is responsible for keeping the system in balance as an autonomous whole, associated with self-organisation and self-referral around its guiding values and principles. These emergent levels of organisation are associated with complexity, creativity and evolution, in bringing forth a new system and in establishing a sense of self (Maturana & Varela 1992; Koestler 1978; Smuts 1926).

Systems harmony, a state of balance or wholeness, occurs when all the generic aspects of a system co-exist and relate in a congruent way. In reality however, there is a constant fluctuation to elements of resistance or interference, referred to as teleonomic entropy in the biomatrix, developed from the systems concept of teleonomic entropy (Járos 2001b; Katakis & Katakis 1986, 1982). These apparent imbalances may either restore themselves, or may modulate to other systems levels, thereby transferring and transforming the energy of the system, transcending the original state. In the biomatrix approach, harmony and its associated tension or resistance co-exist as a necessary complementary relationship and synergy of energies (Járos 2000; Muller et al. 1994).

5.3 Systems epistemology: criteria for making meaning

Systems epistemology concerns more holistic vision by changing our conceptual view to patterns that connect (Bateson 1972) i.e. "a way of discerning and knowing patterns that organize events" (Keeney 1983:95). The systems worldview refers to both the nature and organisation of the universe, representing the ontological perspective, as well as the nature of the inquiry i.e. our processes of knowing and the way we create meaning, representing the epistemological perspective. Systemically, we require an epistemology that can guide us in recognising and organising patterns of meaning in which the process of our inquiry becomes an integral part of our sense of self and the world. As participators and co-creators of the world (Maturana & Varela 1992), human values and insights are
unique and do not always fit into over-arching theoretical contexts. Interaction, dialogue and self-
reflection are essential in an eco-systemic climate and thus we need elaborate conceptual maps "to
give focus to the complexity of the inter-connected webs of dynamic and fluctuating patterns of
organisation" to facilitate the emergence of creative experiences (Van der Hoorn 1995:129). According
to Bateson and Keeney it is crucial that "the epistemological bases underlying patterns of
action and perception be made explicit and understood" (Keeney 1983:14) and, in the context of
philosophy, "epistemology traditionally refers to a set of analytical and critical techniques that defines
boundaries for the processes of knowing" (Keeney 1983:13). They have proposed a schema of systems
epistemological principles to facilitate the process (Bateson 1985; Keeney 1983), summarised below
the diagram (Figure 5.10).

![Figure 5.10 Schema for systems epistemological analysis after Bateson & Keeney](image)

*Making observations.* Making observations involves the inseparable relationship between the process
of knowing, perception and drawing distinctions when shaping our world, which is based on
distinguishing patterns of difference within the threshold of incoming knowledge at any given time:
"[i]t is only by distinguishing one pattern from another that we are able to know our world" (Keeney

*Drawing distinctions.* Drawing distinctions concerns selection between available alternatives as "the
starting point for any action, decision, perception, thought, description, theory and epistemology"
(Keeney 1983:18). It encourages connections between inner and outer contexts, circular or recursive
modes of organisation in addition to linear sequence, and the meaning-making opportunities that they
hold in the interaction between them for a more complete view that "leaves us with an altered,
expanded universe for subsequent investigation" (Keeney 1983:23).
Indicating punctuations. Indicating punctuations involves making observations and drawing distinctions by means of selective attention, goal orientation, perceptual filtering and applying values in meaning-making: "[t]he use of distinction to create indication is a way of defining ‘punctuation’" (Keeney 1983:25). These are made on the basis of foregrounding phenomena to frame and reframe frames of reference by “punctuating the stream of experience so that it takes on one or another sort of coherence and sense” (Bateson 1972:165), while the recursive relationship between meaning and context is an attempt to encourage the emergence of new meaning possibilities.

Marking orders of recursion. Marking orders of recursion involves discerning patterns from a metacontextual perspective. They are considered linear when employing analytic logic, and non-linear when engaging abductive logic, an outcome of the interplay between inductive and deductive methods. Recursive epistemologies interact in a self-referential way with the inquirer resulting in increasing degrees of abstraction. Bateson describes this as a zig-zag effect involving the continuity of processes through different inter-connected levels of organisation alternating between form and process in symmetrical and complementary relationships. For Keeney, orders of recursion in epistemological analysis flow between descriptions of simple actions (sensory based experience) interacting through patterns of organisation in their contexts, to be choreographed as patterns of patterns on a metacontextual level (theoretical abstraction). Again, a way to visualise recursion is to imagine the mythological creature ouroboros devouring itself so that “we can indicate a difference each time the circle travels through itself” (Keeney 1983:32).

Distinguishing logical types. Distinguishing different logical types provides a frame for drawing clear distinctions at different levels of conceptual organisation within the complex web of relationships created between the observer and the context. It serves to “prohibit expressions from oscillating between different logical levels” such as can arise “when a frame of reference is confused with the items within its frame” (Keeney 1983:29).

Creating double descriptions. In systems epistemology, double descriptions are used to evoke dialectical patterns that connect, to “generate a sense of the relationship as a whole” (Keeney 1983:41). While maintaining the autonomy of the original distinctions, it directs the inquirer to higher order descriptions, patterns, complementary and complex relationships, creating inclusiveness and unity within a diversity of distinctions. Bateson compares this to binocular vision. For example, when two views interact, each member punctuates the flow of interaction in monocular view. By combining both at a higher order of analysis, a sense of the whole system begins to emerge, forming a binocular
depth in view, in which the relationship can be termed either symmetric, i.e. a mutually emulated competitive interaction, or complementary i.e. different but mutually fitted to each other, or patterns of relationship between the symmetric and complementary themes (Bateson 1985).

**Complex metaphors.** Metaphors enable transfer of messages across multiple orders of abstraction due to their ambiguousness. They are by nature systemic, traversing many meaning-making possibilities beyond conventional modes of knowing, assuring a connectedness between known and unknown processes and purposes. In addition, they serve to reconnect us with the aesthetic dimension of life i.e. by moving from the quantitative towards pattern and quality we inevitably encounter considerations of an aesthetic nature (Bateson 1985).

**Narrative thinking.** Narrative thinking is encouraged through the use of free association and interactive meaning-making. It involves the use of symbols, story telling, metaphors and ritual to illuminate and explore interpretations that "enable higher order patterns to be discerned" (Keeney 1983:195). A story fluctuates between abstract and concrete realities, perceptually and conceptually reorganising what we know, indicating a shift in how meaning is made: "stories reveal how people punctuate their world and therefore provide a clue for discovering their epistemological premises" (Keeney 1983:13).

Referring to the diagram (Figure 5.10), none of the orders of recursion, namely action, context and metacontext are actually higher or lower than any of the others but are regarded as levels of systems within systems in which perception of whole and parts, for example, are complementary perspectives and our epistemology becomes richer if we consider both.

**Closing.** The above systemic epistemological descriptions, employed alongside the biomatrix systems approach in the conceptualisation of the integrative paradigm of this study, prepare the tone for the music of the spheres metaphors of speculative musicology upon which the study has co-evolved its meta-frame of inquiry towards a more aesthetic, holistic and integrated perception of the world. It is based on the concept of universal harmony which can also be visualised as attunement and co-creation across the vast inter-connected matrix or web of life, whether as a biomatrix net of connections, or, expressed in the wisdom metaphors of various cultures as cited, for example, in the Chinese Buddhist image of the Jewel of Indra which "symbolizes a cosmos in which there is an infinitely repeated inter-relationship among all the members of the cosmos" (Cook 1977:2):

Far away in the heavenly abode of the great god Indra, there is a wonderful net which has been hung by some cunning artificer in such a manner that it stretches out infinitely in all directions. In accordance with the extravagant tastes of deities, the artificer has hung a single glittering jewel in each "eye" of the net, and since the net itself is infinite in dimension, the jewels are infinite in number. There hang the jewels, glittering like stars of the first magnitude, a wonderful sight to behold. If we now arbitrarily select
one of these jewels for inspection and look closely at it, we will discover that in its polished surface there are reflected all the other jewels in the net, infinite in number. Not only that, but each of the jewels reflected in this one jewel is also reflecting all the other jewels, so that there is an infinite reflecting process occurring.

By orienting our views towards recursive, complementary and interdependent patterns that connect and organise the whole of life, we engage in creating aesthetic experiences that reflect a more encompassing systems epistemology (Bateson 1985, 1972; Keeney 1983). These patterns of interrelated wholeness can be transposed and expressed in the metaphors of music which is explored in the chapter that follows.
6. Speculative music: an ancient cultural cosmology

This chapter introduces the speculative music philosophy incorporated into the meta-frame of this study. Concerning cosmologies and creation myths as found within ancient cultures, in which the world was conceived in terms of sound or vibration, speculative music presents a cultural and aesthetic perspective or worldview to conventional scientific accounts of the world that came to replace the divinity of the sounding cosmos with a material reality (James 1994; Godwin 1989a, 1987a, 1982; Berendt 1988, 1987). This chapter revives the metaphysical speculations of its forerunners in Western heritage, notably the music of the spheres of the ancient Greeks that are rooted in the Pythagorean-Platonic tradition (Plato [ca 360 BC] 1987, 1977; Heninger 1977; Hawkins 1963; Guthrie 1962, 1950; Cornford 1945, 1937; Burnet 1930, 1924) which shows an affinity with other ancient cultural systems.

In Western cultural history, however, the progression of the theme in itself relays the story of the musical cosmos as an evolution of the scientific worldview from its mythological origins (Levenson 1997; Tarnas 1996), from which it has become dissociated, and, which is again resurfacing as a revival of the ancient concept of universal harmony (Godwin 1982).

This study recovers and reintegrates some of the ideas from the earlier influences, represented by revisiting key figures such as Pythagoras and Plato, as expounded predominantly in the Timaeus (McClain 1978; Plato [ca 360 BC] 1977; Heninger 1977; Cornford 1937), Boethius, who strove to preserve and institutionalise the doctrines that became a strong influence in the early middle ages and who coined certain terms that are used in this text (Chadwick 1990; Boethius [ca 505] 1989; Strunk 1981), and the controversial views of Fludd and Kepler at a crucial turning point in Western culture, with whom we begin to witness the divide between spiritual hermeticism and material scientific perceptions in the 1600s (Stephenson 1994; Haase 1989b, 1989c; Godwin 1979; Westman & McGuire 1977; Ammann 1967; Pauli 1955; Kepler [1619] 1952). Some contemporary contributions to speculative music include perspectives on its significance in today’s epistemology where it remains a specialised musicological study, or the metamorphosed subject of music composition, while appearing as the measurable underlying harmonic principles across disciplines in the natural sciences, showing the unifying power of the speculative music metaphors as our ancestors had proclaimed (James 1994; Cousto 1989, 1988; Godwin 1989a, 1987a, 1982; Haase 1989a; Lauer 1989b; Berendt 1988, 1987; Kayser 1950, 1946).

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I am indebted to the late Gunther Pulvermacher, former Dean of the South African College of Music at the University of Cape Town (1966–1973), who kindled my initial interest in this theme during a series of lectures given at the university in the early 1980s.
6.1 Sound cosmologies: music as basis for a world system

By associating sound symbolism with a "vision of universal order as being an interwoven configuration of wave patterns" (Lawlor 1982:4), contemporary physics (McTaggart 2003; Bohm & Peat 1987; Bohm 1980; Capra 1976) has approached views similar to those held in ancient times in which the world was founded on sound, nada brahma\(^2\) (Grimes 1996; Berendt 1987). Various cultures have reflected, through their origin myths, how the world came into being by means of a creative deity and seed sound that depicts the original vibration of cosmic unity and which set existence into motion (Figure 6.1). This original sound has been referred to by various other descriptions such as the \textit{om} (\textit{aum}, amen or I Am), the word or \textit{logos}, \textit{ngoma} as the voice of the ancestors, primordial sound, cosmic tone, praise song, world harmony, celestial music or cosmic music and the music of the spheres amongst others (Belcher 2005; Khan 1996, 1988; Smith 1996; Von Franz 1995; Tsai 1992; Schneider 1989a, 1989b; Sullivan 1988; Tame 1988; Blacking 1985; Mutwa 1985; Khanna 1979; Plato [ca 360] 1977; Campbell 1968; Stevenson 1968; Eliade 1964; Cornford 1937; Sachs 1943).

\[\text{Figure 6.1 Sacred Sankrit sound syllables of a creation deity of cosmic unity (in Khanna 1979 [n.p.])}\]

\[\text{\textit{Nada brahma} describes a flow of sound or a stream of consciousness, from the Sanskrit \textit{nado}, meaning sound and \textit{brahma}, the creator of the universe.}\]
Sound cosmologies are steeped in the belief that the principles of music underlie the natural order and structure of the visible universe. Music, and its system of organised harmonic relationships, was believed to enable archetypal contact with the different properties of energy in the universe, which we perceive as a continuum of wave phenomena: “[m]usic is the archetype of the cosmic order” (Godwin 1989b:22). The acoustic laws of harmonics, that extend through many disciplines beyond music, were considered to be “universal which defined the relationship and interchange between the temporal movements and events of the heavens and the spacial order and development on earth” (Lawlor 1982:6). For those who aligned sacred geometry with music ratios and proportion, it meant that human consciousness comprehends the field of frequencies as organised relationships between the conceptual and perceptual thresholds. The human mind has a “unique ability to perceive the transparency between absolute, permanent relationships, contained in the substantial forms of a geometric order, and the transitory, changing forms of our actual world” (Lawlor 1982:5).

Finding a connection between the physical and conceptual realms has been at the basis of these cultural creation systems in their attempt to formulate a description of humankind’s place in the greater cosmic scheme (Von Franz 1974). Although different disciplines, such as mythology, philosophy, cosmology, science and theology, have competed with varying degrees of dominance for a cosmological picture, underlying their attempts is the deep-seated ontological and epistemological quest for an understanding of human existence (Wertheim 1997; Henninger 1977). The world picture, as relayed through the sound cosmologies mentioned above, was presented in ancient times through mythological and spiritual systems embedded in cultural stories unburdened by the separation between subject and object in which certain deities assumed cosmic attributes that communicated our position in the universe (Godwin 1981). Music and science were closely aligned in this cultural view and the notion of separating them would have seemed improbable (James 1994; McClain 1978).

Throughout Western culture, however, the above-described picture of an ideal reality became replaced with a habitat of physical tangibility and concrete materialism as the scientific view gained dominance over the animated celestial beings of the cosmic spheres (Tarnas 1996; Westman & McGuire 1977). The shift in the 1600s to a scientific reality, while another cosmological landmark in that it opened up many new possibilities for humanity, introduced the Cartesian mechanistic view of the world functioning as a predictable machine (Descartes [1642] 1951) that had formerly been frowned upon in the Western community. By widening the gap between the ideals and practices within its own discipline, however, science also divorced itself from other cultural perspectives rather than containing or accommodating them in some way (Wertheim 1997; James 1994; Heninger 1977).

The mechanistic scientific view has had a profound impact on Western culture since the 1600s, resulting in the inevitable demise of mythological thinking as “[u]ltimate reality no longer resided among insubstantial absolutes, but rather among the mutable items spread before our unreliable sense
perception” (Heninger 1977:82). As the “search for the transcendental harmonies atrophied”, music became more and more removed from its original higher purpose of universal music, namely that of connecting earthly existence with eternal reality (James 1994:6). However, the quest of the scientific and the mythological worldviews remained the same, namely that of uncovering the master plan of creation, the universal formula or pattern that determines the structure and function of the existing world, whether conceptual or perceptual (Wertheim 1997). In previous ages, however, the ability to pose the relevant questions was considered the ultimate challenge. These were not subjected to the parameters of scientific answers or explanations within which they are now expected to conform. Such pursuits were referred to the more poetic and philosophic approaches to world systems, which included the domain of speculative music.

### 6.2 The speculative music approach to world systems

The speculative music approach to world systems, as the term implies, is based on the philosophical perception that it is not possible to have unmediated knowledge of the world, and that one can only come to know the world through the reflected nature of the mind. Hence speculative philosophy, derived from the Latin *speculum* meaning mirror, and *speculum musicae*, a term used by Jacques de Liège in the high middle ages (Strunk 1981; Bragard 1955), is considered to be such a mirror of the mind, making an apt re-appearance at a time when physics has called into question the assumptions of its predecessors (Wertheim 1997; James 1994). It is bringing the attention of the Western world back to the theme that graced the former cosmologies (Godwin 1982). There appears to have been an emergence of the theme at crucial transition periods, when civilisations faced an inevitable reform of its worldview (Wertheim 1997). The sections that follow will trace a brief timeline to highlight its recurrence and evolution in Western cultural history. This is not equivalent to an account of historical transference, which within itself is a fascinating study that deserves more just appraisal within its field of specialisation, namely musicology. Instead, it serves to bring attention to a way of life or worldview that is becoming appropriate again in our day as a means for universal understanding, not as “a body of knowledge” but as “a frame of mind” (Godwin 1982:387). Although variations exist in the interpretations of and commentaries on the earlier speculative music traditions, the sections that follow portray the passage of a few key contributors from its inception in ancient Greece, through the turn of the scientific era to contemporary re-emergence of the theme in order to give as comprehensive yet concise a view as possible for the purpose of this study.
6.3 Speculative music in the development of Western culture

For the pre-Socratic philosophers from ancient classical Greece, such as Heraclitus of Ephesos (Burnet 1930:130–168) and Pythagoras of Samos (Burnet 1930:276–309), forerunners in the speculation of the musical cosmos, “[t]he universe emerged from the potential of a divine concept” (Heninger 1977:82). Within the pre-Socratic tradition, reality ultimately resides with the deity who is infinite and unchanging, the idea in the mind of the creator (Kirk et al. 1983; Cornford 1962; Guthrie 1962; Burnet 1924). Our relative and changing world of time and space reflects and exists paradoxically within this eternal being, a simultaneous unity and diversity (Heninger 1977). A divine trinity is formed when these two worlds interact, resulting in three levels of existence (Figure 6.2). They are: the sphere of the deities i.e. the essential world or intellectualis mundus (conceptual realm of archetypes and angelic beings); the elementary sphere i.e. the sensible world or sensibilis mundus (physical sense-perceptible realm consisting of the elements of nature); and the mediating middle sphere i.e. the celestial world or caelestis mundus (realm of planets and stars).

![Figure 6.2 The three worlds of creation as a continuum and trinity by Bouelles (in Heninger 1977:85)](image)

Greek mythology ascribed to music a divine origin and a wider meaning to the word muse, as belonging to nine goddesses presiding over the arts and sciences. We glean from Plato’s Republic that music was generally thought of as being concerned with the pursuit of truth and aesthetics and for shaping moral character (McClain 1987; Plato [ca 360] 1987; Cornford 1945). In the Orphic doctrine,

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7 In African and Eastern cultures music is often linked with the divine goddess such as the sacred regard accorded to music, similar to the reverence paid to the mother earth deity in African culture (Nzewi & Galane 2005) and Hindu goddess also linked to music, for example (Srinivasan & Srinivasan 1999).
Orpheus as patron of music and ritual represents "the combination of the two elements" namely that of Apollo and Dionysus (Kirk et al. 1983:21). Thus there was a need for balance between two general streams, namely music for uplifting the spirits associated with Apollo, and music that produced an excitement of the senses associated with Dionysus. This "makes apparent the two opposite yet parallel tendencies" (Grout 1973:9–10) prevailing throughout the history of Western music in its sacred and secular pursuits.

The basis of Greek education therefore rested on discipline of the mind so that it may become refined and rise above the manifest concrete level of existence. In so doing, it could become a vehicle for philosophic contemplation of the timeless and abstract levels played out beyond the celestial realms. This would afford one the ability to tune in and hear the harmonic order of the music of the spheres: "[h]armonia or 'attunement' had for them a general, indeed cosmic, significance" (Kirk et al. 1983:233). To attain this state, the Greeks defined the three levels of distinction mentioned above as representing the archetypal universal principles, the diverse world of manifestation and the mediating music of the spheres. The latter was equated with the human sphere as a replica of its cosmic counterpart in which were recognised "the attributes of cosmic perfection" (Heninger 1977:144), thus incorporating the characteristics of both the conceptual and physical worlds. Western civilisation today attributes the source of the music of the spheres theme and the merging of mythology with science through music to the Pythagorean-Platonic tradition (Heninger 1977:81–143).

6.2.1 Music of the spheres: the Pythagorean-Platonic tradition

The sixth century B.C. was a tuning point for humanity, having produced the great figures of Buddha, Confucius, Lao-Tse, and Pythagoras, and in which "rational thought was emerging from the mythological dream-world" (Koestler 1968:22). For Pythagoras (ca 560–480 BC), his philosophic and scientific interests were reconciled in the concept of harmonia (Guthrie 1962, 1950; Burnet 1930, 1924) during a time in which "such a combination was not only possible but natural" (Guthrie 1962:181). Music was a system of sound governed by the same laws that operate in the whole of the visible and invisible creation: "music, and that of a kind far surpassing mortal conception, is produced by the motion of the spheres in their several orbits" (Hawkins 1963:63). In this respect, music is not a passive image of the orderly system of the universe, but also a force that contributes to the creation of the universe, hence the association of miracles with the legendary musicians of mythology (Burnet 1930; Guthrie 1950). Pythagoras was the first to use the term cosmos, meaning both "order and beauty" (Guthrie 1962:224). Tradition holds that he derived his cosmic monochord (Figure 6.3), which extends from the terrestrial to the celestial realms, to link his sound system to the divine principle of

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4 Harmony, as referred to here, is not of simultaneous concordant sounds as we use the term today, in that harmonia meant tuning or scale to the Greeks i.e. a succession of concordant ratios and (a melodic sequence of) intervals (Guthrie 1962, Comford 1937). That is, it is a broader philosophical concept than chordal relations as it also means cosmic attunement (Kirk et al. 1983).
universal order, and to demonstrate this with the laws of harmony as a music science still in use today: “the Pythagorean vision of the world was so enduring, that it still permeates our thinking” (Koestler 1968:27). In conjunction with early astronomical observation (Ammann 1967:201):

this amazingly well-ordered scheme of proportions, whose grades the ear can clearly distinguish by immediate perception as the experimenter can verify them by measuring the immediate length of the string, is probably the very foundation of man’s early belief in a harmonious order of the macrocosm and in the harmony of the spheres.

The universal instrument was measured in numerical ratios that translated directly into musical intervals (Hawkins 1963; Burnet 1924).

Pythagoras' view of the musical cosmos was based on the concept of dualism (Burnet 1924) in which numbers expressed not only quantitative numerical properties but also had a higher qualitative meaning (James 1994; Guthrie 1962; Burnet 1930). Unity (one-ness), for example, harmonises all the parts of the whole, and is derived from the arrangement of even and odd numbers within the figure of the tetractys (Figure 6.4) which, formed from the first four natural or whole numbers and their musical relations, is the basis of ever flowing nature to which the whole universe is attuned (Kirk et al. 1983).

Figure 6.3. Pythagoras’ cosmic monochord by Fludd (in Godwin 1979:45)
Plato (ca 427–347 BC) subscribed to Pythagoras' musical universe and extended the system of complementing opposites encapsulated in the tetractys. His mythical account of the creation of the cosmos and the musical division of the world soul is relayed in *Timaeus* (Corford 1937:66) as follows:

First he [the world soul] took one portion (1) from the whole, and next a portion (2) double of this; the third (3) half as much again as the second, and three times the first; the fourth (4) double the second; the fifth (9) three times the third; the sixth (8) eight times the first; and the seventh (27) twenty-seven times the first.

In this manner a new numerical sequence is formed by extended multiplication (Figure 6.5) in accordance with the harmonic, arithmetic and geometric proportions that represent the even and odd number series of the symbolic lambdoma resembling the shape of the Greek letter (λ) lambda (Kayser 1950, 1946). This constitutes the general formulas such as the main musical consonances, their intervals and ratios being the octave 2:1, the fifth 3:2 and the fourth 4:3, and by their means of proportioning, everything relates to everything (McClain 1978; Hawkins 1963; Burnet 1924).
infinite" (Heninger 1977:97). Thus the creating world soul began with an archetypal idea, which was realised by means of physical extension into a time and space reality, and further delimited by the four elements that demonstrated the reconciliation of opposites by means of their inter-relations and interdependence between the formal and material extensions (Figure 6.6).

Figure 6.6 Music of the elements in the formal and material worlds by Fludd (in Godwin 1979:46)

And so, the world soul began the process of creation firstly with fire to make the world visible, followed by earth to give it solidity. In order to hold them together two means were placed between the extremes, namely water and air. These were arranged according to the proportional harmonic relationships between the spheres of the four elements, the outcome of which is "a unified system by these two interlocking progressions" (Heninger 1973:100). The result is a self-contained and coherent system governed by a dynamic equilibrium in which the perpetual transmutation of the elements amongst themselves "remains constant despite the continual flux, and therefore equal to the amount of every other element" demonstrating the Pythagorean paradox of four-in-one (Heninger 1977:105). The tetrad informs every level of the cosmos, resulting in a complex and integrated network of correspondences between the various levels of creation. In Plato's world of the Timaeus it is not relevant "to draw the line between philosophy and poetry, metaphorical and factual statement" (Koestler 1968:56).
6.2.2 The quadrivium of Boethius: preservation of the doctrines

The Pythagorean-Platonic tradition prevailed throughout the ages, influenced by different eras and scholars, weaving through the changing worldviews of the theologians and hermetic humanists amongst others (Godwin 1987a, 1987b). In the fifth century, Boethius (ca 480–524), in an attempt to make an earnest contribution to the preservation of the higher knowledge and to ensure its transmission, adapted and translated the Pythagorean-Platonic doctrines. His treatise *De institutione musica*, the most influential in the mediaeval era and one of the first musical works printed, became established as the foundation of Western music theory (Boethius [ca 505] 1989; Gibson 1981). It concentrated its efforts into reformulating the original four disciplines of arithmetic, music, geometry and astronomy for which it became the basic text. These were thought to be responsible for connecting the inner being with the cosmos and elevating the mind to transcend the world of sense perception in order to abstract the invisible realms beyond earthly existence (Chadwick 1990). They collectively formed the *quadrivium*, an attempt to "organise the diversity of creation into a comprehensive scheme" (Heninger, 1977:126). The three spheres of music education became known as *musica mundana*, the actual dance of the heavenly bodies, *musica humana* which reflected the same ratios as their planetary counterparts and therefore aroused the soul, and *musica instrumentalis* the practical music played on instruments (Strunk 1981). The distinction made between music practitioners and music theorists of the time was more pronounced than it is today, in the words of Boethius: "[h]ow much more admirable, then, is the science of music in apprehending by reason than in accomplishing by work and deed" (Strunk 1981:85). The main function of music, in terms of its higher purpose, was that of seeking out relationships in connecting the universe, "an activity the quadrivium placed in the discipline of music" (Heninger 1977:132).

6.2.3 Fludd and Kepler: world harmony in transition to the scientific age

Probably the most prominent reappearance of the theme of universal harmony as a revival of musical speculation occurred with Robert Fludd (1574–1637) and Johannes Kepler (1571–1630) who, although they were contemporaries, and both followers of the Pythagorean-Platonic tradition, indicated the divide which was to occur between the spiritual hermetic and material scientific views: "Kepler deals with the outer material world, Fludd with the inner, spiritual world" (Ammann 1967:225). While Fludd, who is relatively unknown today, completely reconstructs hermeticism during a time when it was on the wane (Godwin 1979; Ammann 1967), Kepler, for many however, remains a name associated with mathematics, optics and astronomy where he made a considerable contribution to upcoming scientific trends by discovering the laws of planetary motion.

Pythagorean universal harmony had become especially enriched in the renaissance by the hermetic worldview, after the Egyptian Hermes Trismegistus, with the use of cosmographic imagery (Heninger 1977:132).
Fludd's greatest inspirations as hermetic philosopher lie therefore not so much in his written texts of which two are acknowledged here (Ammann 1967) namely, *De musica mundane* (1617) and *Monochordum mundi* (1622), as in his accompanying diagrammatic illustrations (Figures 6.3 and 6.6) which, even though geocentric depictions, remained symbolically valid (Godwin 1979). One of the last of his era to mentally encompass a holistic unified vision of the universe, he was especially influential with his illustrations of the divine monochord in affecting the relationship between the celestial and terrestrial (Godwin 1979). Fludd's models are "not a kind of truth that can be cross-checked against empirical facts", but rather, it appeals "to a form of consciousness that we would today call aesthetic" and they "are to be judged, therefore, not as representations of the cosmos, but as maps of symbolic thought" (Spitzer 2004:153). Kepler asserts that geometry can match or attune finite external sensory reality with indeterminate internal archetypes: "[t]his cognitive notion of harmony blends the optical model of matching percepts to archetypes with the acoustic model of attunement of systems and entrainment to a source" (Spitzer 2004:153). Both Fludd and Kepler relate the invisible realm to perception by determining the coordinates for the musical universe in its abstract and physical extremes around a conceptual centre: "[t]o explain means to render visible, while understanding entails a metaphorical 'seeing'" (Spitzer 2004:153). Whereas Fludd's cosmology subscribes to hermetic metaphor, Kepler's reflects the emerging scientific approach (Pauli 1955).

Today, few may even be aware that the accomplishments of Kepler were an outcome of a greater lifelong passion, namely his belief in the harmony of the world (Stephenson 1994; Haase 1989b, 1989c; Hawkins 1963; Kepler [1619] 1952) as set out in his first publication, *Mysterium cosmographicum* (1596), and his later more comprehensive account in the *Harmonice mundi* (1619). What set Kepler aside from his contemporaries, particularly evident in the disputes over his quantitative pursuits in the dialogues with Fludd, was his devotion to seeking scientific evidence for the historically transferred Pythagorean-Platonic tradition i.e. "to use harmonic principles as an aid in understanding the natural world" (Stephenson 1994:5). He declared "there is need for louder sound while I climb along the harmonic scale of the celestial movements to higher things where the true archetype of the fabric of the world is kept hidden" (Kepler [1619] 1952:1040) while showing that "astronomical experience bears witness that the universal consonances of all the movements can take place" (Kepler [1619] 1952:1044). Thus, while remaining an ardent follower of the ancient doctrines, his main challenge was to make his conceptual speculations accord with observable data (James 1994; Stephenson 1994; Haase 1989b, 1989c). Kepler's model of harmony or attunement is thus a "fit between perceptions of the world and geometrical musical archetypes in the mind" (Spitzer 2004:140), his search for physical causes always being guided by geometric assumptions (Westman & McGuire 1977), thus one in which "the symbolical picture precedes the conscious formulation of a natural law" (Pauli 1955:171). This remained his premise when "seeking to discover the divinely instituted harmony that pervades the universe and binds its diverse parts into a concordant whole" (Heninger 1977:132).
Kepler therefore set out to demonstrate his musical disposition of world harmony by means of geometric construction of the planetary spheres. By embodying the geometrical principles of abstract harmony he was able to inscribe and circumscribe the spheres in and around the Pythagorean and Platonic solids of the *Timaean* cosmology (Figure 6.7). Accordingly "the ratio between two neighbouring planetary orbits is always of such a magnitude that it is easily apparent that each and every one of them approaches the single ratio of the spheres of one of the five regular solids, namely, that of the sphere circumscribing to the sphere inscribed in the figure" (Kepler [1619] 1952:1017). Within this three-dimensional perception of the cosmos, although "an error begetting truth" (Koestler 1968:263), Kepler found the ratios between the orbits of the planets to be congruent and in so doing also confirmed his reverence for the sun and his acceptance of the emerging Copernican model (Koestler 1968) of a heliocentric universe: 5 "the reflection struck my mind", what did the ancient Pythagoreans mean, "who used to call the centre of the world (which they referred to as the 'fire' but understood by that the sun)" (Kepler [1619] 1952:1081). Contrary to advice, Kepler proclaimed "the Copernican system to be literally, physically and incontrovertibly true" (Koestler 1968:254) and consequently "inverted the music of the spheres to heliocentric form" (Stephenson 1994:27). His continued scrutiny of the physical structuring of the cosmos and its underlying patterns of organisation in planetary arrangements, eventually led to his unveiling the elliptical orbits of the planets. This he relays in his greatest work consisting of five books, the *Harmonices mundi* (1619). Here, his revised scientific insight into the planetary ratios provided a more comprehensive basis for harmonic speculation and enabled him to translate the astronomical measurements into music relationships replacing the circular concept of his forerunners. This presented somewhat of a dilemma to the idealistic perfection described in the ancient texts since the ellipse lacked the reassuring archetypal appeal of the circle (James 1994; Heninger 1977; Koestler 1959). Kepler concludes however, that the creator would have revealed a preference for the harmonic properties over the geometric perfection of the circle since "the elliptical form is necessary for the intervals to be generated at all, which would have been impossible with circular orbits" (Haase, 1989b:119).

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The early Greek texts indicate that this comparison of fire with the sun was not necessarily an anticipation of the heliocentric theory, since the fire in the centre of their system could have been an invisible source or could even have denoted a geocentric fire in the core of the earth (Guthrie 1962; Burnet 1924). Because of the controversial nature of this hypothesis in earlier times, it is possible that commentary remained obscure.
The simultaneous sounding of the orbiting planetary spheres, their notes changing according to varying distance and speed from the sun, led Kepler to assert that the movement of the heavens was an everlasting polyphony (James 1994; Koestler 1968). Previously planetary harmony had been assigned sequentially (refer to footnote 4), i.e. melodically, to sounds (Stephenson 1994). The ordering of higher sounds, for closer and faster orbits, with lower sounds, for further and slower orbits, gave the first glimpse of a music system that was about to evolve into the harmonic period in Western music in which the participating voices are characteristically grouped from high to low around a central tonality (Rameau [1722] 1971). Kepler had proposed that the four-part voice arrangement of soprano, alto, tenor and bass “is also prefigured in the heavens” (Stephenson 1994:184). Heliocentricity confirmed that “planets more distant from the sun move more slowly than those closer to the sun” (Stephenson 1994:88). Baroque musical thought was itself becoming subject to empirical verification, its scientific method having absorbed and adapted the proportionality of abstract geometry underlying renaissance analogical thinking, bringing it into accord with the four elements (Spitzer 2004). Linear counterpoint transformed into vertically articulated chordal harmonic space: “[h]armonic counterpoint entails a concept of musical line at a higher level of abstraction than linear counterpoint, one that is perceptible beneath the surface of elaborate figuration” (Spitzer 2004:172). Around the time that Isaac Newton, another follower of the Pythagorean tradition, formulated his theory of gravity in the late 1600s (Newton [1726] 1972), an invisible force inspired by Kepler’s laws of planetary motion (Koestler 1968), the system of four-part harmony, also referred to as functional harmony, which has “the natural momentum of Newtonian mechanics” (Spitzer 2004:215), was firmly established in Western music.

Another significant phenomenon occurred with baroque harmony regarding the evolution of tonal systems in music history (Lauer 1989b) and corresponds to what Kepler may have experienced as a fallen state of humankind from divine perfection. Musical progression became embedded in a heliocentric harmony, a closed tonal universe of interlocking circles of fifths orbiting around the tonal centre (Rameau [1722] 1971). The tuning mechanism derived from this system formed a cycle of twelve identical or pure fifths (McClain 1978). Consequently, with the octave being divided into twelve semitones, some intervals were tempered to accommodate fluent and equidistant transfer between keys. The difference between these two types of cycle is known as Pythagoras’ comma and produced certain cosmological implications since the former ratio of pure fifths was regarded as sacred by the ancient musical systems (Tame 1988). The other cycle of fifths, the twelve tones or intervals accommodated to fit equidistantly within the octave, also known as equal temperament, it was believed, although departing from the heavenly ideal, could now be used in another perfect system of harmony which in turn would hopefully lead humanity back to the divine. J. S. Bach (1685–1750) was the first major composer to demonstrate this departure from tradition when he wrote The Well-Tempered Clavier. It covers the complete circle of keys as a unified design striving for a comprehensive and balanced tonal architecture and which opened up the harmonic possibilities for the centuries that followed.
An orthodox cosmologist expecting to find perfect circles and harmonious proportions in the universe inspired by the inward ways of knowing, Kepler was also an empiricist using data gathered by new instruments that externalised this knowledge and which brought about the departure of humankind into a scientific worldview (Levenson 1977; Wertheim 1997; Tamas 1996). What Kepler considered as the all-embracing synthesis of world harmony, he refers to the “archetypes of universal order” or pure harmony whereas sensory harmony “is merely an echo of it” (Koestler 1968:389). After Kepler, the theme submerged, taking on more subjective and poetic tones in the field of the arts while a more material reality and mechanistic science predominated over Western epistemology (Koestler 1968). Musical divinity turned back inward, to be found in the spirit and “not in a remote and theoretical cosmos that could only be comprehended by increasingly abstruse mathematics” (James 1994:196).

Fragmentation between the disciplines, such as mathematics and music, arts and sciences, set in so that from this time “[t]he harmonies of the spheres will continue to be heard as poetic metaphor but not as scientific truth (Stephenson 1994:11).”

6.4 Contemporary revival of speculative music

By the time Albert Einstein published his general theory of relativity in the first part of the 1900s (Einstein 1951), that re-introduced divine transcendence into science, the Pythagorean music of the spheres had re-emerged in the Western scientific world. Implicitly in tune with the ancient speculations in search for a unifying field of existence as a complex vibration force, “[h]ere at last was the realisation of the Pythagorean dream of embracing the heavens in a set of mathematical relations” (Wertheim 1997:175). While Einstein was unifying time and space into a continuum by viewing the cosmos as a whole, Schoenberg began introducing his system of atonality into composition, namely the equal treatment, or unity, of all twelve tones: “Schoenberg viewed the unity of tonal space, where (horizontal) motives and (vertical) chords are interchangeable” (Spitzer 2004:110). Atonality dissolved the tonal foundations and central gravity that had governed Western music since Newton (Schoenberg 1987). Thematic traces of universal harmony had appeared in contemporary composition such as in Mahler’s monumental work, Das Lied von der Erde (1908) as well as in the hermetic influences in Holst’s Planets (1917) and in Hindemith’s opera Die Harmonie der Welt (1951) which bears the same title as Kepler’s astronomical masterpiece. In the latter work, which is an attempt to synthesise his theories on harmony and tonality with cosmological symbolism, Hindemith takes an explicitly astronomical view of harmony in the way that Kepler had taken a musical view of the cosmos (Hindemith 1952). Greek composer Xenakis makes use of mathematical stochastics and probability theory in his compositions in an attempt to bridge chance music or indeterminacy with twelve-tone serialism, true to the cosmic causality of his Pythagorean-Platonic heritage (Xenakis 1971). Chance music, such as that of John Cage included intuitive influences in the interpretation of performance.

With Stockhausen we see the influx of Eastern philosophy in his orientation to cosmic music.
Speculative music: an ancient cultural cosmology

(Stockhausen 1989) and his search for the more intuitive and spiritual dimensions of sound to “create a new musical time-space” (Machlis 1963:431). Music has also been aligned with quantum mechanics (Eagle 1991) and microtonal music composition. It appears as if the inner harmonic cosmology had changed hands with expressions in composition. However, herein is to be found a greater revelation according to the speculative musicians.

By following a linear and progressive epistemological path, Western music has returned to the theme of universal harmony by presenting it as the subject of its compositions: “music’s creations mean the same as mythologies meant to older epochs” (Lauer 1989a:151). Whereas in earlier times music was a source of universal order to which the soul vibrated in accord, its transformation through eras of musical thought has led to the emergence in our time of actively and conceptually organised music as autonomous and abstracted compositions with an objective existence (Spitzer 2004). Some scholars agree that the shift to a scientific worldview has necessitated a more practical rendition of the cosmic theme by involving the composer to assist in bringing divine revelation down to earth (Lauer 1989b). With the evolution and gradual assimilation of ambiguity and the ever-increasing complexity of tonal systems, musicians today find themselves between the worlds i.e. between mystic intimation and intellectual rationalism, between magical fascination and technical construction, between intuition and reason (Hamel 1986). In ancient cultures creation rituals evoked the deities to bring order and harmony into the world and to disclose to humanity the deepest mystery of creation. In the Western world, creation myths are assigned to ancient times and distant cultures, while in actuality they exist here and now, being re-evoked by the need for a mythical consciousness (Berendt 1987; Lévi-Strauss 1978).

The revival of speculative music is therefore a timely one, albeit the domain of a few specialists in the music field (Godwin 1982). While world music is gaining ground as a newly found globally shared cultural experience (Campbell 2001; Lundquist et al. 1998), a general reinvigoration of universal harmony is occurring across disciplines as a result of scientific alignment of the acoustic laws of harmonics (Cousto 1989, 1988). Some of the studies that have emerged include reconstructing harmonic principles in agreement with mythological and philosophical traditions (Haase 1989a; Kayser 1950, 1946), acoustic and cosmic symbolism of foreign cultures (Schneider 1989a) and evolution of tonal systems (Lauer 1989b). Former texts are being reviewed and translated for their significance today (Stephenson 1994; Haase 1989b, 1989c; Godwin 1979; Pauli 1955) while interest in the more subtle qualities of music are to be found in related studies concerning the inner nature of tone (Steiner 1987; Rudhyar 1982). The revival of the theme is augmented by a host of contemporary writings that extend beyond the field of music since harmonic laws allow for inter-connectedness between different disciplines. This implies that wave frequencies anywhere along the frequency spectrum can be transposed to reveal the properties of music embodied in the natural sciences.
chemistry, atomic physics, crystals, the double helix spiral and many more (Cousto 1989, 1988; Tame 1988; Berendt 1987). Thus, as the earlier traditions beheld, it shows the ability of music to establish relationships and unify the vast matrix of life. It demonstrates both the invisible underlying laws of music in the universe as well as the visible, formative potential of sound. The effect of sound on matter has been demonstrated by observing the impact of harmonic vibrations on various substances, such as cymatics (Jenny 1967), creating simple geometric shapes (Figure 6.8) reminiscent of the sacred mandalas (see Figure 6.1) devised by ancient cultures in search of patterns of wholeness.

![Mandala of geometric patterns created by harmonic sound frequencies](Doczi 1985: 133)

**Figure 6.8**

Closing. Today’s generation of speculative musicians believes that, despite the ability to determine the manifestation of these undercurrent frequencies in the natural world, the purpose is not to justify the musical universe by way of scientific confirmations based on detached observations. Whereas “natural scientific thinking, necessarily causally oriented, can only conceive of the world in a partial manner” (Haase 1989a:108), the harmonic worldview represents a transcendent teleological perspective. It recovers a valid complementary way of connecting and tuning in to the universe (Berendt 1988). The merit of music, together with its speculative counterpart and metaphorical conceptualisations (Spitzer 2004), lies in the direct realisation, experience and participation in the dance of creation. While Western consciousness has become distracted from its inner celestial pursuits in favour of outer terrestrial concerns, speculative musicians believe that “whatever *maya* [illusion] is woven in earthly time, the spheres sing on undisturbed in their region of perpetual certitude” (Godwin 1982:29).
7. Metaphor-aspect of the meta-frame: a system of ideas

This chapter merges the contemporary systems worldview with the ancient Pythagorean-Platonic speculative music tradition discussed in the preceding two chapters into a unique system of ideas. The system of ideas represents the metaphor-aspect of the meta-frame of inquiry proposed in this study. It is my own attempt at presenting a trans-disciplinary frame of mind to conventional Western scientific methods of inquiry to contribute to new ways of knowing and understanding the world and our relation to it as a systems whole. It hopes to restore the wisdom of cultural mythological thinking, preserved in many indigenous cultures such as Africa, Asia and India, into its worldview which, as the previous chapter highlighted, is inherent in Western cultural heritage. Hence from the Western perspective, the age-old metaphysical ideas and music speculations are recalled and juxtaposed with current systemic and scientific perspectives in the metaphoric descriptions of this chapter, augmented where appropriate with other disciplines and cultural images. The main purpose of the system of ideas is to inspire and enable a shift in the mind of the reader so as to include intuitive, imaginative, mythological, spiritual and aesthetic qualities of meaning-making in human inquiry.

The major impetus for an epistemological shift relies on the ability to change our mental position towards patterns of organisation and dynamic relationships from which new frames emerge (Bateson 1985; Keeney 1983). These frames may appear as archetypes in the sense of “a systematic repertoire of ideas by means of which a given thinker describes, by analogical extension, some domain to which those ideas do not immediately and literally apply” (Black 1963:241). Thus “a detailed account of a particular archetype would require a list of key words and expressions, with statements of interconnections and their paradigmatic meanings in the field[s] from which they were originally drawn” (Black 1962:241). This may then become contextualised within their analogical extensions “sufficiently rich in implicated power to be a useful speculative instrument” while at the same time yielding to experience (Black 1962:242). Metaphorical thought makes the abstract insights possible as they “are conceptualized via multiple complex metaphors” (Lackoff & Johnson 1999:73), and across domains of correspondences characterised by consistent reference image schema with a distinctly multi-layered and multidimensional topographical orientation (Ortony 1993; Lackoff & Johnson 1980; Ricoeur 1978). These can be organised and mediated by image, symbol, myth, schema or analogy depending on the context within which they are described: “[a]n image schema is a structure for organizing our experience and understanding” (Spitzer 2004:60). They “generate complex patterns of meaning” in terms of “their gestalt characteristics, that is, their nature as coherent, meaningful, unified wholes within our experience and cognition” (Johnson 1987:41).

Ten central concepts have been assembled into the metaphoric titles of the system of ideas that embody the musical world creation. They form the sub-headings of each section of the chapter,
namely: 1) The music of the spheres: metaphor of universal harmony, 2) Unity and diversity: a dual systems harmony, 3) The three worlds: emergence of a mediating middle, 4) Duality of perspectives: a field and flow of frequencies, 5) The spherical vortex spiral: a bridging of worlds, 6) The golden middle: a transcendent mediating centre, 7) Division of unity: composition of the world creation, 8) Organisational matrix: dynamic patterns of relationship, 9) The greater unified whole: an integration of worldviews, and 10) The music archetypes: integrating metaphor and mediator. They constitute the basic tenets or insights that are embedded one within the other in an inter-related way. My own accompanying original graphic images have been devised, not only to illustrate and elucidate the text, but also to co-develop participating concepts¹. They become useful "in identifying the key structural features of the schemata and in illustrating their key relationships" (Johnson 1987:23).

7.1 Music of the spheres: metaphor of universal harmony

Central metaphor. The main premise in the system of ideas is that the perceptible universe is governed by underlying principles of music, which extends throughout the whole of creation.

Key ideas.

- The philosophy of speculative music as expressed in cultural creation mythology and the scientific systems worldview merge into an integrative metaphor of universal harmony that acknowledges existence as consisting of organised and inter-connected wave patterns.
- The musical universe is viewed as a purpose-based system, forming an ideal archetype or pattern of life based on the concept and laws of harmony.
- Universal harmony portrays the created world as a moving image of the eternal ideal world.
- The principles of harmony embody the synergy of complementing forces.
- The solar system resonates with the harmonic worldview and serves as a symbol for the music of the spheres metaphor.

Introductory description. The system of ideas is based on the harmonic view of the universe drawn from the cosmological descriptions of speculative music (Godwin 1982; Heninger 1977; Plato [ca 360 BC] 1977) as well as the systems worldview (Capra 1996; Járó & Cloete 1987; Laszlo 1972b). According to the Pythagorean-Platonic music of the spheres tradition (Guthrie 1962; Cornford 1937; Burnet 1924), the creative force behind the universe is that of a divine purpose. It symbolises the pattern and relationships of the planets in our solar system and greater cosmos which affects all life by embodying the principles of music as a means of organising and understanding the nature of the world.

¹ The graphics were inspired by a collection of diagrams that include cosmographical illustrations (Heninger 1977), universal music schema (Godwin 1979), sacred geometry (Lawlor 1982), alchemical psychology (Jung 1968b) and the works of Paul Klee (Klee 1978, 1977) amongst others, in which the latter shows how "the experience of reality which is acquired in seeking aesthetic value is no less concrete or less conclusive than that which is acquired in scientific or philosophic research" (Argan 1978:11).
7.1.1 Creation myths: cultural perspectives and the systems view

Creation myths "are concerned with the ultimate meaning, not only of our existence, but of the existence of the whole cosmos" (Von Franz 1995:1). They describe not the origin of our external cosmos as much as the inner origin of human conscious awareness, particularly the case in African, Eastern and Asian cultures, and we can assume that in the early stages of human development there was little differentiation between the inner and outer worlds (Von Franz 1995). While cultures portray different animated versions of crossing the threshold of creation, they show certain archetypal features that link them on a collective level of consciousness (Von Franz 1995). Generally, the myths depict the ongoing relationship between order and chaos, destruction and creation (Chetwynd 1998). Often the energies of creation are given life as characters presiding over the laws of existence and deciding its fate, and many refer to music as the ultimate source of creation (Berendt 1988). For example, the early Greek Apollo and Dionysus portrayed the cosmological prototype of the complementing creative forces respectively representing the spiritual and physical body. Apollo, crowned with the golden rays of the sun, plays on a seven stringed lyre that resembles the seven planets and seven-note diatonic scale. He pursues noble values and inspires wisdom while complementing partner Dionysus is constantly in search for the pleasure of the senses (Lauer 1989b; Jung 1971; Guthrie 1950). The ancient Vedic deity Brahma creates earthly life from the heavenly seed sound and the Hindu Shiva creates the world while playing on an hourglass drum held in one of his many arms and a flame of destruction in another (Smith 1996). It is believed that while he dances, life will continue to exist but should the music stop, all will return to the original essence. A creation story on the human race being descendent from Africa can be found in the Avu of Alafrika, a narrative about Oma, the original woman (Nzewi 2004). In Africa certain instruments, such as drums, the marimba and the Shona mbira dza vadzimu (voice of the ancestors) are created to uphold the wisdom teachings and music facilitates this communication with the ancestors, the spirits and the creator (Diallo & Hall 1989; Mutwa 1985; Berliner 1981). The weaving motif can be found in the West African Dogon tradition where the world is awakened each day at dawn by the song of an ancestral deity weaving the strings stretched between the upper jaw of heaven and the lower jaw of earth (Belcher 2005; Schneider 1989a), and in the Indian concept of maya (illusion) which represents the veil of worldly appearances (Grimes 1996; Pintchman 1994). In Western culture, the idea of a deity creating a harmonically ordered cosmos finds its most eloquent expression in the Timaeus (Plato [ca 360 BC] 1977; Cornford 1937).

These cultural cosmologies resemble principles found in contemporary systems theory: "[e]very viewpoint of reality" whether from cultural beliefs or science "is a system of ordering and relating" (Von Franz 1995:245). By importing musical metaphors into the systems view the universe might be described as one in which everything participates in a great continuous cosmic composition. A constant flow of frequencies characterises every dance and permutation of energy as it weaves its
sonic patterns in an inter-related and inter-connected way through a multi-layered and multidimensional chord of possibilities. The contributing patterns consist of frequency emission and reception capacities, transmitters and transformers of eternal balance and harmony within and around them. Depending on the degree of inherent resonance or tuning relative to the position of participation and co-creation in the universe, divergent versions of the grand orchestration can be heard directing the world music, which coheres in holocosmic fashion within a central all-encompassing unified sound. According to Hofstadter's perception of Bach's fugal compositions, life can be likened to a harmonic labyrinth in which "we hear music recursively" (Hofstadter 1987:129). In summary, at the basis of these musical cosmologies lies the belief that out of the unifying sound originates the diversity of all existing vibrations in the universe, ordered and in constant dialogue with its source.

7.1.2 Universal harmony: divine creation as an ordered system

By admitting metaphors of harmony into worldview, as the purpose and organising disposition of the universe, a conceptual change in our perspective of reality is required in order to adopt a qualitatively more subtle dimension of experience. In the account of creation as relayed in the Pythagorean-Platonic tradition, the creator ordered the world to resemble the eternal living pattern (Heninger 1977; Cornford 1937). It was not possible, however, to bestow this attribute fully on the created universe since "[t]he world cannot be eternal, like its pattern", so the creator determined to make a "moving image of eternity which remains for ever at one" (Plato [ca 360 BC] 1977:51). Universal music was considered a measured system of sound and number as motion in vibration. And thus the world was created in the living image of harmony to connect the eternal model with its manifested image. The principles of harmony that appeal to the metaphors in the system of ideas are sketched below:

The concept of harmony. By general definition harmony means combining sounds to form an agreeable whole (Piston 1973; Rameau [1722] 1971; Fowler & Fowler 1970; Riemann 1962) and different cultures and eras in music, e.g. Africa (Agawu 2003b), have formed their own systems of agreeable sound combinations. Harmony is therefore considered relative to the musical setting or tuning system in question. From an acoustic perspective, namely the study of harmonics, the harmonic value of a tone is determined by its frequency composite in relation to other tones i.e. as a universal phenomenon, regardless of the cultural music system (Berg & Stork 1982). For Spitzer, harmony denotes more than just a technical music category and he identifies five levels of harmony: "the compositional, the theoretical, the cosmological, the scientific, and the metaphorical" (Spitzer 2004:142). Metaphorically, harmony is a concept of universal order intrinsic to all existence, and technically, a contrapuntal structure of well positioned and proportioned sounds, the mediation of divine harmony via the active world of practical music. In Western culture co-existence between these two states of harmony is epitomised in the 1600s by the emerging empirical science demonstrated by
Kepler in his harmony of the world which "mixes speculation on the music of the spheres with probing astronomical observations" (Spitzer 2004:144). Kepler consequently proposed two types of harmony namely, sensible harmony i.e. ordering by measured sensation, and, pure harmony i.e. existing in the soul, being causally connected through geometric archetypes. "Kepler's scientific conception of harmony marks a crucial move in the history of music theory, because it establishes a link between harmony as a compositional category and a more abstract sense of it as an epistemological model" (Spitzer 2004:145).

The cosmic monochord. The harmony between the macrocosm and microcosm was given expression, also in the 1600s, by Fludd's hermetic epistemological model of the Pythagorean monochord (see Figure 6.3) connecting heaven and earth: "[t]he monochord is a thread of continuity coterminal with the chain of being" (Spitzer 2004:141). A schema stretching in opposite directions, it is tuned by the divine hand of the creator while "[t]he earth anchors the monochord and is the ground for the acoustic fundamental" (Spitzer 2004:141). The division of the cosmos is a measure of proportion, marking off the intervals of the universal hierarchy simultaneously ascending from the fundamental and descending from the divine (Godwin 1979; Ammann 1967). The mythic string contains all the intervals of the harmonic series: "[a]ll notes are contained within it" (Berendt 1988:5) and all intervals relate to each other. The systematic division of sounds within sounds resembles the holographic image of the universe (Talbot 1996; Bohm 1980). The cycles of sound are demarcated by a recurring pattern of proportional ratios, the most prominent of them being the octave (Rameau [1722] 1971).

The law of the octave. Division of the unison tone occurs along the mythic monochord, which ranges from the most ordered whole numbers to the most complex frequency ratios, positioned as a series of consonances and dissonances (Rameau [1722] 1971). According to Pythagorean theory, the perfect consonance resides in the unison and the smaller the ratios become, the more the intervals deviate from consonance to dissonance (Hawkins 1963; Guthrie 1962). The terms whereby sounds are considered consonant or dissonant are relative to the music context and have changed over the course of music history (Lauer 1989b). It has been argued on the basis of physiological or sensory perception (Helmholtz 1885) and may differ between cultures (Nzewi 1997). Recurring cycles of sound occur within the octave, "the most perfect consonance, so perfect that it gives the impression of duplicating the original tone, a phenomenon for which no convincing explanation has ever been found" (Apel 1970:589) and is the only interval common to practically all scale types ever evolved. The mysterious occurrence of the octave can be demonstrated by dividing a string length in half so that the vibrations double (McClain 1978). The octave law has made it possible to transpose the cosmic sounds intuitively discovered by ancient speculations into audible ones (Cousto 1989, 1988). The orbits of the planetary system for example, can be transposed via logarithmic procedure into audible range. With this procedure one can demonstrate the harmonic relationship that exists in the inherent structure
between natural phenomena across different fields (Berendt 1987; Kayser 1946). These harmonic laws establish a musical basis for the governing of life in resonance with universal principles. What appears as an abstract harmony aligns with physical sensory perception: “our direct, intuitive response to this phenomenon of sound (the octave) coincides with its concrete, measured definition” (Lawlor 1982:13). Abstract harmonic concepts align with the physical perception of sound: “we experience in this auditory perception a simultaneous interwovenness of interior with exterior, and we can generalise this response to invoke the possibility of a merger of intuitional and material realms” (Lawlor 1982:13). “Harmony implies relationships” and with music “quantity becomes quality” (Godwin 1979:18). This is the essential spirit of harmony according to the speculative musicians who believed that contemplation thereof could bring one in resonance with universal order: “[b]y seeking the invariable relationships by which forms are governed and inter-connected we bring ourselves into resonance with universal order” (Lawlor 1982:14).

7.1.3 The sun tone and solar system as a unifying symbol

The sun as centre of our system necessitates a transfer of the ancient speculations to a heliocentric universe in the system of ideas (Figure 7.1). Kepler, who lived on the threshold of the scientific age and an ardent advocate of the heliocentric system scientifically, but who nevertheless retained a strong fascination for Pythagorean ideas, designated the sun as primary image in his system: “[t]he sun in the midst of the movable stars, itself at rest and yet the source of motion”, bears the image of the creator (Pauli 1955:173). Contemporary astronomer and mathematician Cousto, as a consequence of studying Kepler’s laws of planetary motion, mathematically derived a hypothetical frequency of the sun based on Plato’s perception of the planets “in the lesser circles moving faster, those in the greater more slowly” with closer orbits to the sun having a higher frequency than those further away (Cornford 1937:112).

Cousto refers to the sun tone as the transcendental principle since “[t]he tone of the sun is based on a limit value in our solar system, which is exactly at the threshold between contraction and expansion” (Cousto 1988:83). According to North American Indian myths the sun is a symbol, not of personal consciousness, but of “consciousness as a whole” (Von Franz 1995:203). The system of ideas takes its departure from this image of the sun tone (Figure 7.2). The “sun as a symbol of unity” (Westman & McGuire1977:15), is a “visible, unifying symbol of the indivisible deity” (Westman & McGuire1977:6), and serves as a basis for graphic elaboration and exploration into the nature of the musical universe.

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2 According to Cousto the sun tone exists in theory only, as with zero temperature, which does not actually occur in nature (Cousto 1988).
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Figure 7.2 Symbol of the sun and frequency of the planetary orbits (adapted from Cousto 1988)

Conceptual relevance. Speculative music philosophy and the systems worldview are evidence of the great shifts in human perception to accommodate changing perspectives of reality. The scientific view has had a powerful impact on the divide between the measurable world and its spiritual origin. The tendency has been to accept the word and measure of a select community of scientists who set out to explain natural phenomena. Faculties of re-creating or co-creating the universe lie dormant in a society subjected to proven formulae. The celestial spheres have become distant bodies out in space, disconnected and impersonal. By recalling their mythological origins as having valid influence on, and by re-evoking their participation in contemporary worldview, we move closer to more holistic and ecological orientations to life. The metaphor of the music of the spheres as a mode of inquiry introduces an imaginative approach to worldview. It reclaims our understanding of a multidimensional world that seeks to restore a sense of deeper meaning and connectedness with life than the fragmented picture we hold at present. It provides a unifying symbol for the diversified universe.

7.2 Unity and diversity: a dual systems harmony

Central metaphor. Unity and diversity represents a dual perspective of the universe in which the diversified created world co-exists relative to its unified ideal, each of them a reality reflected within the other and linked by a harmonic continuum.

Key ideas.

- Unity and diversity form a dual systems harmony that links the intangible ideal realm with the tangible physical realm of life.
- The musical universe is perceived as a complex web of sound, or pattern of vibrations, arranged from high to low frequencies along a harmonic continuum.
- Unity and diversity mutually co-create one another, each being explicitly expressed in its own right as well as being implicitly present in its reflected other.
- The harmonic worldview represents a qualitative dimension for tuning in to the universe and requires a shift from visual modes of perception to auditory metaphors.

![Diagram: Still Point of Unity and Diversity](Image)

**Figure 7.3 Unity and diversity as a dual systems perspective of cosmic harmony**

**Introductory description.** Unity and diversity finds natural expression through the symbol of the solar system in the system of ideas. Unity is perceived as one-ness or wholeness, represented by the still point of the sun. It forms the unison as the original all-encompassing seed sound of the divine deity. This sound contains the potential vibrations for all existence and continuously differentiates creation into a reflected diversity. The cosmic monochord, a harmonic continuum containing the full spectrum of frequencies stretched between celestial unity and terrestrial diversity, generates patterns of ordered relationships that underlie the whole of creation and which keep it in continuous connection to the original source.

### 7.2.1 The world soul contemplates the celestial and terrestrial worlds

The system of ideas adopts Plato’s version of the visible world as a reflected image of an ideal model (Cornford 1937). The creating deity distinguishes between “that which always is and never becomes from that which is always becoming but never is” (Plato [ca 360 BC] 1977:40). The former, the intelligible realm, is apprehensible by contemplation of a higher nature, being eternally the same and imbued with soul, while the latter, the sensible realm, is subjected to continuous change in time-bound existence. The world soul “is engaged in a perpetual process of thought about both the sensible and the intelligible realms” (Plato [ca 360 BC] 1977:46). In the system of ideas this is conceptualised as a continuous connected flow between the extremes of unity and diversity (Figure 7.3).

Kepler adopted the image of the sun as the central point: “the sun is a certain body in which [resides] that faculty of communicating itself to all things, which we call light. For this reason alone its rightful place is the middle point and centre of the whole world, so that it may diffuse itself perpetually and uniformly throughout the universe. All other beings that share in light imitate the sun” (Pauli
And, "not only does light go out from the sun into the whole world, as from the focus or eye of the world, but conversely also by royal law these returns, so to speak, of every lovely harmony are collected in the sun from every province in the world" (Kepler [1619] 1952: 1081). Although Fludd's universe was not heliocentric, "symbolically it is still entirely valid" (Godwin 1979: 19). He depicted the sun as the union of two interpenetrating triangles, a formal pyramid (from the world of forms) facing downwards with its apex on the earth, and a material pyramid (from the world of matter) extending upwards with its apex in heaven (see Figure 6.6). The system of ideas portrays the dual interlocking concept from a sun-centred perspective as depicted below (Figure 7.4), showing unity and diversity each implicit in one another.

The system of ideas presents the solar sphere emanating from point to surface, translating unity as the inner point and diversity as the outer expression. Plato visualised the creator using a "spherical shape, with extremes equidistant in all directions from the centre, a figure that has the greatest degree of completeness and uniformity" (Plato [ca 360 BC] 1977: 45). Kepler sees the matching between external impressions and pre-existent inner images or archetypes as a kind of awakening: "[f]or, to know is to compare that which is externally perceived with inner ideas" (Pauli 1955: 162). The centre point is the origin of the spherical body and the outer surface an image of the innermost point, as well as the way to arrive at it. That is, the outer surface is understood as "coming about by an infinite expansion of the point beyond itself until a certain equality of all individual acts of expansion is reached. The point spreads itself out over this extension so that point and surface are identical" (Pauli 1955: 168–9). Hence "there exists everywhere between point and surface the most absolute equality, the closest unity, the most beautiful harmony" (Pauli 1955: 168–169).

Reference to central, as the point of the circle, does not equate to the general use of central in the system of ideas.
7.2.2 A web of sound: the universe perceived as a harmonic system

In the system of ideas harmony refers to all vibrations, waves or sounds embedded in the one ultimate sound linked along the harmonic continuum ranging from the lowest frequency positioned on earth to the highest frequency positioned in the sun. This conceptual frequency spectrum demonstrates the degree of density increasing from heaven to earth. Resonating with the speculative musicians’ view that “[m]usic is the archetype of the cosmic order” (Godwin 1989b:22) and that “underlying the apparent solidity of matter there is nothing but a network of vibrations” (Godwin 1989b:13), the system of ideas affirms its primary link with the systems view. Here the dense focalised entities of the observable world emerge from a more subtle underlying flux, as observed in physics (McTaggart 2003; Bohm & Peat 1987; Bohm 1980) and systemically, one can move recursively between these two complementary states of existence, which mutually create and sustain one another (Járos & Cloete 1987). In the system of ideas therefore, an additional dual perception exists in the linking harmonic continuum. This duality is inextricably linked within the flux and fabric of existence but can be separated out and re-configured conceptually. In the systems context, it establishes a linking continuum between the conceptual and physical realms of existence, providing a qualitatively different dimension of experience. In speculative systems that honour the “ontological primacy of tone over matter” (Godwin 1989b:23), sound has “less to do with a precedence in time than with an ever-present hierarchical superiority” (Godwin 1989b: 13). Priority is given to a sounding cosmos over the visible. It requires a qualitatively different way of tuning in to the universe.

7.2.3 A qualitative dimension for tuning in to the universe

The notion of a sounding cosmos provides an opportunity to transpose the observation-based and objective outer-eye perception of the universe to a more intuitive and subjective inner-ear experience of life (Berendt 1988). This shift effects a distinction between the accurate certainty of quantitative measurement as an objective science determinable by the senses that involves logical and critical faculties of mind, and the qualitative nature of knowing which considers inner intuitive impulses that reveal the hidden essence behind the manifest and measurable world. The system of ideas honours both but creates an opportunity that gives greater presence to the latter.

We derive some insight into the visual and auditory metaphors from the disputes between Kepler and Fludd at the threshold between a spiritual and scientific worldview. Fludd argues that Kepler “excogitates the exterior movements of the created thing” whereas he (Fludd) “contemplate[s] the internal and essential impulses that issue from nature herself” (Pauli 1955:196). Yet the speculative side of Kepler acknowledges along with Fludd that the physical world is the realisation of pre-existing archetypal images as the invisible source which strives “to preserve a unity of the inner experience”
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(Pauli 1955:207). Plato ascribes the ability to measure time to visible cycles, e.g. day and night, in the sky and the experience of underlying harmony through the ability to hear their movement: "I think we may say that, just as our eyes are made for astronomy, so our ears are made for the movements of harmony and that the two are, as the Pythagoreans would say, and as we would agree,... sister sciences" (Plato [ca 360 BC] 1987:340). It is this hearing of "harmonious movement" in the Republic (Cornford 1945:249) that forms the basis of elaborate discussion in the Timeaus (Guthrie 1962). The system of ideas holds both quantitative and qualitative views in relation as an inseparable systems harmony. It rests on the symbol of the ear as a logarithmic spiral “linking the earthly and immanent with the infinite and transcendent” (Berendt 1988:1).

Conceptual relevance. The unity and diversity perspective relays the concept of a systems harmony, not merely as a transposition into a frequency perspective, but as a way of introducing a qualitatively different dimension of experience along a higher and lower harmonic continuum. It presents another dual impression superimposed over, and inter-related with, the systems web of life although it remains qualitatively different. The system of ideas presents its own set of images to open up another way of tuning in to the universe. The purpose is to embrace both the scientific and spiritual worldviews. On the one hand systems theory, drawing from contemporary physics, has demonstrated a new synthesis of science with ancient views. On the other hand, the revival of the harmonic worldview shows a more qualitative way of understanding the universe. Value is placed in the simultaneous embracing of both worldviews, as a middle way that can lead to a deeper unity of life.

7.3 The three worlds: emergence of a mediating middle

Central metaphor. A central realm in the harmonic systems holarchy mediates the interaction between the inner realm of unity and the outer realm of diversity in the dual systems perspective.

Key ideas.

- The living cosmos breathes between the dual states of being: it expands or ascends towards a higher realm i.e. a state of liberation which is unity or universality; and contracts or descends towards a lower realm i.e. a state of manifestation which is diversity or individuality.
- The universe is a holocosm i.e. wholes within wholes, of vibrations emanating from the higher dimensions and reflecting back from the lower extremes to create complex patterns of existence in an emerging mediating middle realm.
- The three worlds represent an upward (inward) directed world, a downward (outward) directed world and a central directed world.
- The three realms resemble the ancient musical model of universal music, instrumental music and the mediating music of the human system.
- The universe is both transcendent and immanent i.e. both (pre-)dispositioned or intended, and self-organising or emergent.
Introductory description. The Western world has inherited both a scientific-material and a transcendent-idealistic universe. It seems inevitable that the contemporary community would seek reconciliation between the material and the spiritual (Wertheim 1997; Tamas 1996; Laszlo 1995). In this respect the system of ideas closely resembles the ideal approach of the Pythagorean-Platonic transcendent musical world order but also includes the systemic principles of emergence and selforganisation. It represents a world thus transcendent and immanent, the creating deity eternally flowing from the all-encompassing unity as waves of diversified emanations, and returning to its source (Heninger 1977) with the emergence of a third mediating world as a central organising realm in the harmonic holocosm.

7.3.1 A harmonic holocosm of worlds within worlds

Systems harmony reflects a continuous sense of unfolding order and connection throughout the universe (Heninger 1977). In the harmonic spectral system every individual tone contains all others as overtones. The relationship, or the interval, that exists between tones as well as their overtones creates continuous interacting harmonic proportions. The cosmic monochord is therefore also a holarchy (Koestler 1978), or hologram (Wilber 1982), or holocosm (Weber 1989; Bohm 1980) of notes within notes, or spheres within spheres, in which “each sphere contains the other” (Chetwynd 1998:105). The pebble-in-the-pond image, also termed the physics of the ancient om-sound, in which vibrations emanating from the higher dimensions reflect back from the extremes forming complex criss-cross patterns, has been perceived in sound creation myths to be “the precipitation of matter” (Tame 1988:210). These interference patterns are visible manifestations of an endless enfolding of the whole cosmos (McTaggart 2003; Briggs & Peat 1984; Bohm 1980).

![Figure 7.5 The three worlds: unity, diversity and the mediating middle](image)

In the system of ideas, the breathing cosmos, its descent from point to circle, creates a progressive contraction and densification of frequencies down to the tangible material realm. From the extreme of the material, the vibrations ascend in frequency, expanding back up to the point of the celestial realm.
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(Figure 7.5). The symbol of the scale or cycle of steps consisting of notes spiralling through the frequency spectrum links the world of above with that of below. It can be thought of as different layers of consciousness unfolding along the world axis. As “circles of heaven” (Chetwynd 1998:239) these layers often form a mythological alignment with the orbits of the planets: “the idea of an ascent through the seven spheres of the planets symbolizes the return of the soul to the sun-god from whom it originated” (Jung 1968b:57).

7.3.2 The central realm as a reciprocal connection between worlds

In the system of ideas the central realm is symbolically aligned with the human system, the self that emerges from the interaction of point and circle. According to Kepler's speculation (Pauli 1955), the human soul as an image of the creator, is both partly point and partly circle. As a reflected point on the circumference of the circle, the self receives from and is shaped into form by the divine archetypal harmonies that radiate forth from the deity. The more contemplative and imaginative attributes are therefore assigned to the point aspect, while activity and movement belong to the circle aspect of the self. The human being as an image of the creator has an innate knowledge of, and an ongoing connection with, the forms of eternity impressed into the external circular expression. Kepler refers to this process of inner recognition as “the reciprocal connection of the circumferential figure with a central figure” i.e. the point (Pauli 1955:183–184) in which “all internal reception or meditation is caused by external movement, every inward function of the soul by outward movements” (Pauli 1955:185–186). The principle of reciprocal connectivity adopted by the system of ideas is similar to the systems concepts of requisite variety (Ashby 1956) and systems coupling: “we speak of structural coupling whenever there is a history of recurrent interactions leading to the structural congruence between two (or more) systems” (Maturana & Varela 1992:75), as well as that of symmetry and complementarity (Járos & Cloete 1987).

In the system of ideas the reciprocal centre between point and circle is given a mediating existence between realms. Kepler used the symbol of the sphere to represent an image of the trinity in which the middle appeared “in the equality of relation between point and circumference” (Pauli 1955:160). For Plato the body of heaven is visible, but the soul invisible and endowed with harmony so that he “postulated on the one hand an intelligible and unchanging model and on the other a visible and changing copy of it” (Plato [ca 360 BC] 1977:67). Now a “third needs to be distinguished”, so the creator mixed a third existence intermediate between them and from this threefold distinction creation was divided proportionately. This third existence has no definite character of its own “[f]or it continues to receive all things, and never itself takes a permanent impress from any of the things that enter it” (Plato [ca 360 BC] 1977:69).
In the system of ideas the three realms of existence resemble the three musical worlds of the ancient universal model (Chadwick 1990; Boethius [ca 505] 1989; Heninger 1977) namely, *musica mundana* as the inner realm, *musica instrumentalis* as the outer realm and the *musica humana* as the central sphere. The notion of an emerging self was given expression in the psychology of Jung as the coming into being of a new centre embracing the contents of both the known and the unknown worlds (Jung 1967). Symbolically the centre is also referred to as the world axis, the "central core of life" or the "invisible principle which connects" the human being with the cosmos (Chetwynd 1998:37). The system of ideas connects the point to the circle by means of a downward (outward) directed flow, an upward (inward) directed flow and a centrally directed flow around the self as mediating middle (Figure 7.6). In the diagram the *ouroboros* represents the central self continually renewing itself (Chetwynd 1998; Jung 1968b). Referring again to Kepler, as the "outer circle is drawn around the centre, so is action directed outward whereas cognition and meditation are performed inwardly; and as the circle is related to the point so is outward action to inner contemplation" (Pauli 1955:186). Reciprocal tuning thus takes place from both sides, namely towards the point of unity i.e. shorter wavelength and higher frequency, and towards the circle of diversity i.e. longer wavelength and lower frequency. From any position of reference within the system of ideas one can focus on a unified inward or diversified outward directed perspective and their inter-relationship. For Kepler, "[i]n so far, then, as the souls are perceptive of the celestial radiations and are thus moved by them, as it were, with an inward, self-contained movement, we must regard them as points; but in so far as they in turn cause movement, that is to say, transfer the harmonies of the radiations which they have perceived into their operations and are stimulated to action by them, they ought to be considered as circles" (Pauli 1955:187). In systems terms, this arrangement constitutes a holarchically organised symmetrical and complementary duality (Cloete 1999), or a holocosm (Weber 1989).
7.3.3 The creating cosmic deity as both transcendent and immanent

From the above it becomes apparent that on the one hand we have the unfolding of a divine plan into a manifest material universe and, with the notion of an emerging middle on the other hand, an evolutionary cosmology. In Plato's "system of the world" the absolute forms are given a reality separate from those that embody them in the world (Cornford 1962:56). Sheldrake's description of morphogenetic fields and morphic resonance in his hypothesis of formative causation suggests that "the invisible organising principle of nature, rather than being eternally fixed, evolve along with the systems they organize" (Sheldrake 1989:114). The study of the nature of purposeful and self-organising systems has revealed the principles and patterns of organisation that relate to unfolding creativity and evolution (Kauffman 1993), which in biomatrix systems terms is referred to as being both emergent and intended (Cloete 1999). The system of ideas closely resembles the ideal approach of the Pythagorean-Platonic transcendent musical order reciprocally reflected in the world but also includes the systemic principles of emergence and self-organisation representing thus, through the mediating middle, a world both transcendent and immanent.

**Conceptual relevance.** The system of ideas has introduced the concept of an inward and outward directedness between the realms of unity and diversity, related by means of a mediating centre. The circle or realm of diversity in the representing image bears inherent knowledge of its eternal counterpart the point or realm of unity. The central realm emerges from their ongoing reciprocal relation, reflecting the qualities of both. Thus they co-create each other and the dynamic of their relatedness depends on the degree of tuning in accordance with higher and lower frequencies along the harmonic continuum. In doing so, they demonstrate both the principles of a transcendent existence, relayed by the Pythagorean-Platonic tradition as well as an immanent existence of emergence and self-organisation in the systems approach. The interplay between these two complementary ordering tendencies rests on a further dual perception of the universe, namely a field-like (structure and form) and flow-like (process and activity) perspective.

7.4 Duality of perspectives: a field and flow of frequencies

**Central metaphor.** The dual perspective of the unity and diversity continuum is immersed within the duality of a time and space reality creating the perception of a field and flow of frequencies throughout existence.

**Key ideas.**

- A duality of complementing perspectives exists within the musical universe
The dual systems perspective of a field (entity system) or flow (process system) of energy can be visualised respectively as a sphere and spiral within unity and diversity.

Sphere systems resemble a field perspective of spheres within spheres symbolised by a cosmic mandala which establishes a sense of balance and wholeness.

Spiral systems resemble a flow perspective as a continuous linking spiral symbolised by the harmonic spectrum or cosmic monochord which establishes a sense of continuity and connectedness.

Sphere and spiral systems co-create one another i.e. a system emerges from the interaction between the field and flow perspective.

Introductory description. The primary duality in the system of ideas is that of unity and diversity. However, there exists in the texture of life an inseparable web of inter-connecting and complementary dualities, each within themselves representing the whole of existence. Whichever one is chosen as a conceptual or epistemological tool for understanding the universe becomes foregrounded and abstracted for the purpose of the inquiry. The set of complementing dualities is broadly illustrated by the field-like sphere and flow-like spiral that creates a distinction of the visible world as an image of its auditory counterpart (Plato [ca 360 BC] 1987, 1977; Comford 1937). This perception gives presence to the underlying processes and patterns emerging from the harmony of the world.

7.4.1 A duality of complementing perspectives

Various cosmological descriptions of the universe are based on dual and complementary perspectives (Von Franz 1995). The system of ideas asserts its primary duality as an ideal pattern of unity and diversity gleaned from speculative music while it interfaces with the systems worldview in order to become grounded in a time and space actuality. Each of these in turn hosts a dual perspective describing a different yet inseparable and complementary reality. The systems web of life as formulated in process systems approaches (Sabelli 1994; Járos & Cloete 1987) gives priority to the underlying process nature of life and a dual perspective emerges on the basis of wave-like processes or focalised entities whether in conceptual or physical systems (Cloete 1999). The latter perception is located within the wave-particle duality of physics, a metaphor of light formed from the electromagnetic wave spectrum, a particular band of frequencies within the universe which acknowledges that our visible world emerges from a more subtle underlying flow of reality (Bohm & Peat 1987; Bohm 1980). The system of ideas represents the whole web of vibrations in the universe as a synthesised systems perspective by means of a frequency field and flow duality.

7.4.2 A field and flow of frequencies: sphere and spiral systems

The system of ideas, inspired by the images of speculative music, is based on another range of waves within the universe, namely the harmonic frequency spectrum (McClain 1978). These frequencies are
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transferred through the music metaphors to extend across conceptual and physical systems (Cloete 1999). In this duality, the apparent solidity of the manifested outer world constitutes a crystallised form or field of frequencies, while the underlying vibrations of their inner harmony resemble a continuous flux or flow of frequencies. One could say that the force that coheres between them consists of an interchangeable form, wave and pulse continuum as found in the study of cymatics by Hans Jenny (Jenny 1967). One pole of the continuum reveals a patterned, figurative formation (form) and the other a kinetic-dynamic process (wave), the whole being generated and sustained by its eternal periodicity (pulse). This threefold combination of structure, dynamics, and periodicity, considered the basis for organising matter with the use of sound vibrations (see Figure 6.8), invariably appear as one. They are inconceivable one without the other. By taking away any one aspect, the whole ceases to exist. The inseparable form-wave-pulse unity of the sound metaphor is similar to the matter-energy-information trinity of the light metaphor in the electromagnetic wave spectrum. As the matter-energy-information metaphor links process and entity systems, the form-wave-pulse metaphor links field and flow systems of frequencies along the harmonic continuum in the system of ideas.

COSMIC MANDALA COSMIC MONOCHORD

Figure 7.7 Dual perspective of field and flow systems based on spheres and spirals

The frequency field and flow perspective, equated with entity and process systems, is thus a superimposed perception over the unity and diversity duality. These webs of existence are interconnected but can be separated out conceptually in the system of ideas to depict their respective dimensions. For example, the holographic nature implied in the multidimensionality of the sphere can be lifted out by means of a polar graph to reveal geometrical images embedded within it such as the spiral extending in dual directions connecting all possibilities of life (Figure 7.7). These dual and complementary systems mutually co-create and dynamically interact with each other although each of them constitutes a system in their own right. The dual perspective of unity and diversity is a qualitatively different dimension of experience within the web of life based on harmonic principles. The physical and conceptual spheres of the two dualities are inextricably linked, overlap and interact with each other. Focalised field systems resemble a mandala sphere representing a sense of balance and wholeness in a system and frequency flow systems resemble the cosmic monochord spiral providing a sense of continuity and connectivity in the system. The sphere depicts the eye-version of
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the system and the spiral the ear-version. As the eye imprints the image of the outside world onto the retina as a mirror between external and internal life, the ear transmits and transforms incoming external frequencies into inner neurochemical signals along a continuous cochlea spiral. These images support and link the complementing views between the dual ways of perceiving the world.

7.4.3 Physical and conceptual reality: a further distinction of dualities

Reality, in this context, thus refers to physical reality and conceptual reality. The biomatrix systems model distinguishes between conceptual and physical systems i.e. wave-like processes and focalised entities existing in both physical space e.g. as objects and in conceptual space e.g. as ideas (Dostal et al. 2004). In the system of ideas conceptual and physical realities form an additional linking continuum as an ideal system by means of the unity and diversity perception of the music metaphor (Figure 7.8). These dual realities give rise to each other and remain in continual dialogue and mutual relation. This is achieved in a self-referencing manner by forming reciprocal relations between them. The spiral continuity enables a view in which frequencies become increasingly lower or dense when scaled towards physical reality and higher or less dense towards conceptual reality. Any system of reference is made up of a configuration of these frequencies that determines its location and quality as both a field and flow along the harmonic continuum.

![Figure 7.8 Linking continuum between physical and conceptual domains](image)

**Conceptual relevance.** The system of ideas addresses a complementary and compatible set of dualities in the web of life. The relationship between physical and conceptual reality occurs on a qualitative dimension along the unity and diversity continuum. Systems field, or entity perspectives, and flow, or process perspectives, are transferred to the metaphors of the music of the spheres as sphere and spiral systems. The dualities are interdependent but can be separated out conceptually. Their mutual relation can be projected as a complex multidimensional and multi-layered matrix represented by the spherical vortex spiral.

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7.5 The spherical vortex spiral: a bridging of worlds

Central metaphor. The spherical vortex spiral provides a multi-layered and multidimensional image that emerges from the continual interface of complementing dualities.

Key ideas.

- The multi-layered and multidimensional image of the vortex emerges from the interaction of sphere and spiral systems in the complementary duality of unity and diversity.

- Vortexes emanate from the interface of the unity and diversity continuum with the time and space domain.

- The eternal and temporal relationship between the realms is held by the position of impact between the dual perspectives.

- The spherical vortex spiral serves as a bridge of synchronicity or meaningful connection across realities.

- The concept of recursion, resonance and resistance determines the dynamic relationship between the dual systems.

Figure 7.9 Spherical vortex spiral as an interface between dual perspectives

Introductory description. The image of the spherical vortex spiral emerges from the interaction of complementing dualities within the system of ideas. The primary interaction emanates from the interchange of the point and circumference within the unity and diversity continuum, which in turn interfaces with the time and space reality from where the sphere and spiral perception can be identified. Meeting points between complementary energies occur as meaningful coincidences in our consciousness based on the principle of synchronicity proposed by Jung (Jung 1955). The term describes an acausal connecting principle between the inner unified cosmos with the external world. There is “a common flow – the whole organism and each one of its parts are working in conjunction for the same purpose – the great principle extends to the extremest part, and from the extremest part it returns to the great principle” (Jung 1969b:490). The spherical vortex spiral represents a symbolic and abstracted image of the interacting multi-layered and multidimensional energies that reside within the system of ideas.
7.5.1 A vortex of multidimensional and interfacing energies

The spherical vortex spiral illustrates the Pythagorean-Platonic deity eternally flowing from the all­
compassing unity as waves of diversified emanations, returning to its source (Heninger 1977; Cornford 1937). The “entire universe, with all its spatial and temporal states, is but the spiral manifestation of the still centre; as it rotates it expands, and while still rotating it contracts and disappears to the source whence it came” (Purce 1974:18). The sphere and spiral, while partaking in the same activity, respectively present a subtle difference in perception of the vortex. In the vortex sphere the “extremities, the centre and the periphery, flow into each other; essentially they are interchangeable”, and “[a]t the point of maximum contraction, the expansion begins” The vortex spiral is “a continuum whose ends are opposite yet the same” (Purce 1974:8-12). In the system of ideas they form a simultaneous movement in both directions i.e. eternity extending inward towards unity and outward towards time-bound diversity. The spherical vortex spiral acts as a bridge between the co-emergent and co-creating qualities representing the complementary dual systems perspectives (Figure 7.9). That is, the vortex sphere (field perspective) emerges from the interaction between its associated spirals and the vortex spiral (flow perspective) emerges from the interaction between its associated spheres although each displays subtle differences in qualities not present in its complementary partner. What holds them together is their shared purpose in accordance with the principles of harmony and equilibrium as found in the Chinese yin-yang symbol “whose interlocking spirals are a symbolic cross-section through the spherical vortex” (Purce 1974:19). This image is reminiscent of the toroidal systems topology proposed by McNeil in which a dynamically organised system comprises interacting continuities, cycles, loops and links with timing and scaling factors relative to an environment and percipient (McNeil 1994). It shows how the inside is the outside, how the centre connects to the periphery and how phenomena at different positions are inherently related i.e. “[i]t directly offers a way to visualise dynamic stasis of vorticles amidst flux” (McNeil 1994:1466). What keeps these energies in dynamic balance in the system of ideas is their degree of attunement to the whole and to each other, regulated by the concepts of resonance, recursion and resistance.

7.5.2 Resonance, recursion and resistance: concepts of attunement

The spherical vortex spiral is a universal principle reflected throughout existence (Purce 1974). It appears in any scalar form that extends from the vast spiral galaxy to the smallest particle as a holocosmic correspondence to the whole (Weber 1989; Bohm 1980). The principle of resonance connects patterns across different levels of scale (McTaggart 2003; Peat 1991). The continual turning in through itself is referred to as recursion in the system of ideas, which is a constant transformation of the available amount of energy in a system as it passes through the vortex. It accounts for the presence
of star material in human beings for example (Peat 1987). The vortex also demonstrates the close link that can be forged between the space-time and frequency domains if one were to consider time not as an independent concept but as duration of periodic phenomena following one another in regular succession (Cousto 1988). The period of oscillation, i.e. the number of repetitions during a certain length of time, is referred to as frequency. Vibration is a unit of periodic phenomena e.g. a day or year cycle. Consequently the vortex draws the relationship between high and low frequency and the time and space perception into closer contact. For example, a longer string with a larger spatial aspect has a lower tone and slower vibration rate with a smaller temporal aspect. Likewise, a shorter string with a smaller spatial aspect has a higher tone and faster vibration rate with a larger temporal aspect (Berendt 1987). The system of ideas acknowledges the close correspondence and inter-changeability between these different dimensions of existence which, according to their degree of transmission and reception, can attune to the full spectrum of wave frequencies. This is made possible by the principle of resonance in which one can “transfer something that exists in time and space into the ‘spectral domain’ – a kind of timeless, spaceless shorthand for the relationship between waves, measured as energy” (McTaggart 2003:106). The dynamic between multiple layers and dimensions is maintained by means of this resonance i.e. the degree of “tuning into” (McTaggart 2003:119) the unity field (or zero point field) similar to the “[h]armonia or ‘attunement’” of the speculative musicians (Kirk et al. 1983:233), and by means of continual recursion between them. What is termed resistance determines the degree of ease with which a system attunes i.e. transacts or transfers energy with other systems or systems aspects which is more fluent when there is a high degree of reciprocal connection or harmonic compatibility in the way they are tuned in to each other. The concept of systems resistance in the context of attunement is affiliated to that of telentropy in the biomatrix systems model which determines the probability of the system reaching its aspired goal (Cloete 1999). Telentropy “can be defined as the measure of uncertainty” within a system (Járos 2001c:51) based on the concept of teleonomic entropy (Katakis & Katakis 1986).

Figure 7.10 Spherical vortex spiral and the relationship between the dual worlds

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By tracing the flow of resonance, recursion and resistance through a system and its multidimensional vortex one can create coherence in the interplay between the upper and lower levels of the unity and diversity continuum as well as inward and outward directed flows of the space and time domain (Figure 7.10). In the qualitative dimension, clarity in tuning results in concordant or resonant effects while disturbance in the flow results in systems dissonance, as reflected in human and living systems (Dodds & Járos 1994). A higher order of attunement between dimensions results when meaningful connections are established based on the principle of synchronicity (Jung 1955).

7.5.3 The principle of synchronicity: a bridge between worlds

Apart from being able to explain events in cause and effect sequences, certain patterns of non-linear relationships can emerge through a system of “acausal connectedness” that provide “meaningful cross-connections” between time-bound existence and the eternal (Jung 1969b:417-519; Jung 1955). With his principle of synchronicity Jung “attempts to articulate a single unified system which embraces both matter and spirit and throws a bridge between time and eternity” (Stein 1998:200). Synchronicity, a quality of simultaneity or of a falling together in time, holds the realms together in equivalence, i.e. hidden symmetry. For Jung the inner qualitative world of complex archetypes, images and intuition have an equal value to and impinge on human consciousness as much as the external quantitative world of objects. He refers to them as two parallel realities that are synchronistically related, organised and co-ordinated (Peat 1987; Jung 1955). Jung jointly explored with physicist Wolfgang Pauli – who investigated the archetypal patterns in Kepler’s scientific ideas, namely that of pre-existing harmony which unifies the higher and lower worlds – the thesis that continuity exists between the human psyche and the physis or physical world (Jung & Pauli 1955). For Jung “synchronicity is not a philosophic view but an empirical concept” which can be termed neither materialistic nor metaphysical (Jung 1969b:512). The system of ideas gives presence to the hidden harmonies revealed in the synchrony between complementing worlds.

Conceptual relevance. The spherical vortex spiral presents a multi-layered and multidimensional image of interfacing complementing dualities kept in continual systems balance and relatedness. The concept of recursion, resonance and resistance relates the systems continuity across these dimensions and establishes the degree of concordance or dissonance within and between systems. Apart from causal connections, the principle of synchronicity offers meaningful acausal cross-connections between the eternal and time-bound realities. At any position within the spherical vortex spiral, these energies can be focussed and projected as an abstracted matrix to reveal the golden middle in the meeting of complementary dualities.
7.6 The golden middle: a transcendent mediating centre

Central metaphor. The mutual crossing of complementary dualities creates a double mediating centre or golden middle that is symbolically found in mandala figures.

Key ideas.

- A mutual crossing of centres results from tuning in to the dual perspectives of unity and diversity as well as the space and time continuum.
- The symbolic sacred marriage between the dual continuums occurs on the level of self and provides the golden middle that unites with the transcendent.
- Attunement occurs between adjacent levels in both holarchies i.e. outward and inward as well as upward and downward on a higher level of perception in relation to the centre.
- The mandala, represented by the circle and square, is a universal symbol for the centre that depicts the union of spirit and matter on the level of the self.

Introductory description. The mandala symbol in the system of ideas presents a central crossing or golden middle that emerges from a higher mutual interaction of the unity and diversity continuum interfacing with time and space contexts. These double centres are visualised as linking potentials in the multidimensional vortexes associated with constellations of spheres and spirals of activity. The patterns and processes that appear embody and enliven the unique qualities of each perceived centre. The purpose is to raise them to higher levels of awareness, a transcendent state perceived as an ultimate union and wholeness of existence. Described in the alchemy of the self as the sacred marriage, it embraces both the world of the material and the world of the spirit on a higher, transcendent level of existence (Jung 1968a, 1969a; Lawlor 1982).

7.6.1 The sacred mandala: a central crossing of dual perspectives

Various symbol systems express the mandala, Sanscrit for circle or magic circle (Grimes 1996), as the basic archetypal pattern of the cosmos “which spins from itself the web of life” (Chetwynd 1998:251). It depicts the central crossing of the inner world of spirit with the outer world of matter. Ancient doctrines based the cosmological creation of order on the relation of geometric figures that recall the archetypes of existence (Lawlor 1982; Cornford 1937). To render the concept symbolically visible in the system of ideas (Figure 7.11), unity and diversity is further aligned with the circle and square which forms the most regular portrayal of the created world scheme (Heninger 1977). The circle is an infinite expression of unity,
eternity and divine perfection, the unmanifest spirit beyond measure. Unity is restated in the square to render it manifest, comprehensible and measurable. The square represents the finite possibilities as expressed on the physical realm of diversity. This quaternity “which makes possible a whole judgement” (Jung 1969b:512) appears as one of the central axioms in the alchemy of psychology as found in the words of Maria Prophetissa and translated by Jung as: “one becomes two, two becomes three, and out of the third comes the one as the fourth” (Jung 1968b:23). While the spiralling monochord is implied in this description, “the mandala symbolizes, by its central point, the ultimate unity of all archetypes as well as of the multiplicity of the phenomenal world, and is therefore the empirical equivalent of the metaphysical concept of the unus mundus” i.e. the unified cosmos (Jung 1968a:463).

Figure 7.12 The double centre representing the golden middle

The system of ideas presents the crossing vortex of the interdependent and co-creating dualities as a double wheel. In the Timaeus, the creator took the whole fabric of life, divided it down the middle and placed them crosswise, bending each around to form two circles, one inner and one outer (Cornford 1937). He named the outer circle after the nature of the same i.e. undivided, and the inner after the nature of the different with further divisions, the two revolving in contrary senses and in relative proportion to each other (Plato [ca 360 BC] 1977), formerly known as the limited and unlimited in the original Pythagorean duality (Burnet 1930). Thus the creator found a meeting point between the eternal and time-bound by “fitting the two together centre to centre” so that “the soul was woven right through from the centre to the outermost heaven” (Plato [ca 360 BC] 1977:50). The mandala enfolds the motif of an interlocking synchronicity when an action emanates from their mutual contact. This appears to be the pivot where spirit and matter meet (Jung 1955), and when such “a constellation exists and eternity breaks through momentarily into our temporal system, the primal unity actively manifests itself and temporarily unites the double structures into one” (Von Franz 1974:263). In the system of ideas this double image also relays the alchemical axiom: as above so below, as within so without (Stein 1998; Jung 1968b).

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4 Plato was referring to the outer fixed stars and the inner moving planets in his cosmological picture and it may suggest an armillary sphere, as with the spindles of necessity in The Myth of Er in the Republic (Cornford 1945) although McClain is not convinced of this association (McClain 1978).
7.6.2 Alchemical axiom: as above so below, as within so without

Diagrammatically, the dual directions of the mandala in the system of ideas can be represented as the crossing of two sets of bipolar streams, or a four-way flow resembling Leonardo's knot, ultimately a multidimensional web connecting spirit and matter (Figure 7.12). Not only does it connect the dualities, but shows how they co-create and enhance each other. For example, this can be illustrated by the tuning mechanism of a radio in which balance is maintained between reception and transmission frequencies crossing each other to reveal different stations, i.e. centres. In the system of ideas the vertical polarity is based on the unity and diversity continuum, a qualitative range of frequencies stretched from low to high. The direction of movement upwards towards unity and universality defines the search for liberation. It refers to a freeing of the spirit, the path of transcendence. The stream of energy moving downwards towards diversity and individuality defines a search for manifestation towards the physical and concrete. It moves towards contraction and form, the path of immanence. This in turn is tempered by the horizontal polarity based on the three dimensional time and space reality of the world we inhabit, extending along the systems web of life. The crossover stream whose expression is directed towards outward forms is found on the left and that directed towards inward forms on the right. The resulting pattern or constellated field defines the unique qualities of a referenced system, while remaining linked between levels and dimensions. Here they come together as an abstracted higher order matrix represented at each systems centre. The more connections made while rising to higher levels of awareness achieves more complexity and multidimensionality in the hieros gamos or sacred marriage in the golden middle (Jung 1969a, 1969b).

7.6.3 The golden middle: transcendent centre of the unified self

The union of the double dualities into a symbol of wholeness is one in which the timeless merges with the time-bound to embrace both the world of the material and the world of the spirit in a reciprocal manner while moving towards ever-higher realms of universal or spiritual integrity. The golden middle thus emerges as a higher union of archetypal patterns of greater order and coherence that transcend the time and space continuum even though immersed within it (Jung 1969b:67–91). It is described as the disposition whereby a transcendent state can be achieved (Jung 1969a:355–384). In some cultural systems the sacred mandala, symbolised by the quarternity contained within the circle, serves as a means of invocation of the deity or communion with a higher being (Grimes 1996; Allen 1992; Wilhelm 1984; Khanna 1979). It is often a ritualistic passage of material involvement across a progression of pathways and gateways in its initiation into ever higher spiritual realms.

In sacred geometry the practice of squaring of the circle symbolises the harmonisation of the intuitive and infinite with the material and finite through the laws of harmony (Lawlor 1982). One of the ways
in which teachings could lead the mind back towards the higher worlds was through Pythagorean proportional relationships of equivalency i.e. between two ratios, of which the ultimate expression is the golden section (Burnet 1924) which contains within it a close approximation of the fibonacci series of numbers (Powell 1979). The golden spiral is the thread through all dimensions occupying the whole frequency spectrum, integrating higher with lower. The external source of experience is recognised as being in a continuous flow of relationship with inner faculties of perception and cognition. It is the relationship and not the external object itself that we are experiencing: “[i]n proportional thought there are no fixed quantities, only fixed relationships. The quantitative value may shift but the relational configuration remains the same” (Lawlor 1982:45). This is necessary for progression and extension i.e. division of unity: “the entire proportional universe that results from it relates back to it and is literally contained within it” (Lawlor 1982:47).

**Conceptual relevance.** The golden middle synchronises and synthesises the abstract universal essences with the world of sense appearances into a coherent image. The movement from one, as an absolute, a beginning, through the intermediate numbers two and three to the symbol of actual completion and wholeness in the number four, which again is one (Jung 1968b), symbolises both a division and a union. It requires of each centre along the continuum to be clearly distinguished and related to the whole before being re-integrated as a higher union. This division of unity is achieved through the systemic and ordered division of the world creation into constituent patterns and processes.

### 7.7 Division of unity: composition of the world creation

**Central metaphor.** The unity and diversity continuum is based on a qualitative higher and lower dimension of existence according to the division of the world creation into constituent patterns and processes.

**Key ideas.**

- The world creation is composed of generic patterns and processes that are harmoniously related to one another and continuously transforming one into the other.
- The basic constituents indicate differences of quality (essences) that are expressed through their equivalent substances or quantities (appearances) represented by the natural elements.
- The division of unity is performed by way of relationship between the qualitative and quantitative nature of its constituents.
- The sphere or field perspective marks a gateway for each of the constituents positioned along the spiral or flow perspective as a pathway for the interlocking division of unity.
- A central or reference system provides a focal balance between the pathway and gateway perspectives.
Constituent parts of a system reflect the universal principles of the whole and each is embedded within the other in a holocosmic and inter-related way.

**Introductory description.** The system of ideas bases its division of unity on the Pythagorean-Platonic custom of classifying the constituents of the created world according to the natural elements (Heninger 1977; Cornford 1937). All substances were regarded as combinations of these basic elements, and it was thought that others could arise by combining them in certain proportions. The elements were originally designated symbolic values so that numerous correspondences could be set up across disciplines as a way of seeking cohesion and continuity in the universe. Since the physical world was a reflection of an ideal conceptual world, the symbolic purpose was to transform the grosser vibrations of the physical world into becoming more refined. To accomplish this, the elements were given a particular order in the generic structure of the cosmos. This creates patterns of possibilities in the relations between the basic constituents. Once the elements were clearly defined, their proportions and interactions determined in a diverse practical reality, it was believed they could in turn uncover the underlying qualities that would resolve the connection between humanity and its creator.

### 7.7.1 The composition of creation: generic patterns and processes

According to the Greek philosophers, the composition of the world is engaged in a definite pattern of harmonious relationships (Cornford 1937) consisting of four elementary constituents, “earth, air, fire and water, the whole available amount of which is used up in its composition” (Plato [ca 360 BC] 1977:43). And “from such constituents, four in number, the body of the universe was brought into being, coming into concord by means of proportion” (Cornford 1937:44). The creator thus put the universe together in a way that would effect “the closest unity between itself and the terms it is combining; and this is best done by a continued geometrical proportion” (Plato [ca 360 BC] 1977:44). For this, the body of the world requires two means to connect its companion members. Accordingly, the creator “set water and air between fire and earth, and made them, so far as was possible, proportional to one another, so that as fire is to air, so is air to water, and as air is to water, so is water to earth, and thus he bound together the frame of the world” (Cornford 1937:44). It will follow necessarily “that all can stand in the same relation to each other, and in so doing achieve unity together” (Plato [ca 360 BC] 1977:44). They indicate differences of quality continually recurring in different external appearances by means of a constant process of cyclic transformation. As such, they are archetypal essences with no stability as permanent expressions. The substance is that in which the process takes place and in which the qualities appear (Cornford 1937; Plato [ca 360 BC] 1977). Correspondences of the elements in physical nature become images of the concepts they embody (Heninger 1977).
Metaphor-aspect of the meta-frame: a system of ideas

Figure 7.13 Generic constituents of the world creation

The originals or inherent forms (ideas) on which the qualities of the elements are modelled exist in themselves, "imperceptible to our senses but apprehended by thought" (Plato [ca 360 BC] 1977:71). Plato is in accord with Heraclitus who wanted something from which the qualities could be "separated out" and "something which of its own nature would pass in turn into it" which he found in fire (Burnet 1930:145) creating an "upward and downward path" through air, water and earth (Burnet 1930:163). In the system of ideas the division of the world creation is based on these principles of ordering the elements and retains the symbolic relation between them (Figure 7.13). This reflects the unfolding of the division of unity along the continuum between heaven and earth (Chetwynd 1998). It reveals the harmonic relationship between quality and quantity.

7.7.2 Division of unity: the relationship between quality and quantity

Both the qualitative and quantitative nature of number and frequency are considered in the system of ideas. The division of unity was originally conceived in the Pythagorean doctrine on the assumption that the diversity of the empirical world belongs to an underlying eternal world of unity. Their symbols constitute the archetypes of order that contain the preconditions for effecting the harmonic division between matter and spirit (Heninger 1977; Hawkins 1963). Each number in this cosmological system unfolds quantitatively as well as qualitatively: "[w]hereas numbers above the threshold of consciousness appear to be quantitative discontinuities and qualitative individual numbers, in the unconscious they interpenetrate and overlap" (Von Franz 1974:65). This is likened to a continuum in which all numbers qualitatively represent an indivisible whole and in which every individual number represents the continuum in its entirety (Von Franz 1974). Translated in the system of ideas, the concept resonates with the harmonic spectrum in which all frequencies are proportionately related to the fundamental tone and similarly "signify different rhythmic configurations of the one-continuum" (Von Franz 1974:75). In the symbolism of numbers, the Pythagorean tetrad is given priority as the ordering principle of the whole (Cornford 1937).
One as unity. The number one signifies the indivisible whole. While it forms a single unit and beginning point of the natural number series, it extends into infinity indicating a complementary relationship between quality and quantity: “quantitatively it forms the unit, qualitatively it contains the whole sequence of natural numbers” (Von Franz 1974:62). Individual numbers form the time-bound quality of the one continuum: “from the quantitative point of view, it consists of an ever-repeated addition of one unit, while from the qualitative viewpoint we must postulate that the one-continuum always remains the same” (Von Franz 1974:64). In the system of ideas one represents the central point of unity as well as a single individual point on the circle of diversity. It encloses the ultimate unity of all individual points from the central point to all emanating diverse points as an all-encompassing oneness.

Two as duality. The number two qualitatively expresses the principle of duality, associated with repetition and division, or “the symmetry aspect of the one-continuum” (Von Franz 1974:64). It constitutes in geometry the directional axis for the basis of even or odd permutations in the Pythagorean tetractys (Burnet 1924) and stands behind the discovery of complex number (Von Franz 1974). The number two also contains the threshold and dual image between the eternal and the reflected or symmetrical physical appearance. It resembles the symbol of the cosmos as a dynamic twofold reciprocal rhythm of yin and yang (Wilhelm 1984). In the system of ideas it also represents the two-directional passage between complementing dualities.

Three as the trinity. Three involves a mediating presence and inserts a symmetrical axis into the two-rhythm as a symbol of the dynamic process i.e. it “introduces a directional element into the oscillatory rhythm of two, whereby spatial and temporal parameters can be formed” (Von Franz 1974:103–104). It can be illustrated by the inseparable threefold unity of structure, dynamics and periodicity in the study of wave phenomena previously mentioned (Jenny 1967) or the three essential spheres, the inner (micro) central (meso) and outer (macro) spheres contained one within the other (Chetwynd 1998). In the system of ideas, the trinity presents the emergent centre, a qualitative experience based on “forming the passage between the transcendent and manifest realms” (Lawlor 1982:12).

Four as wholeness. The quaternity is a universally accepted symbol for the divided whole (Lawlor 1982). This fourfold aspect is found in many systems, such as the division of the horizon into the quarters of the compass, the four seasons and the four elements. By wholeness unfolding into four, distinct characteristics regarding their relationships are made known. According to Plato, the creating deity required certain orientations and connections in order to bring abstract thought into physical reality (Plato [ca 360 BC] 1977; Cornford 1937). The body of the universe therefore sets itself up in two complementary pairs that are linked by a mean, a continuous geometric proportion in which for Plato, “the similarity of the relations of these numbers to one another brings about their unity” (Von
Franz 1974:127). A quaternary attitude of mind is thus required to transform archetypal ideas through their passage into time-bound consciousness.

In the system of ideas the ordering of these numbers reflects the descent from unity, becoming first a relative duality and then an emerging trinity before its material manifestation in four, again a wholeness5, where one becomes a single point on the band of diversity.

7.7.3 An interlocking system of pathways and gateways

The generic ordering pattern of the constituents of the world creation unfolds as an interlocking network of gateways and pathways through the levels and dimensions in the system of ideas. The pathway enfolds each constituent part as a downward spiral arranged from fire, air and water to earth and upward again along the dual flow (Figure 7.14). Their relationship to each other is determined by the proportional scaling from the dense terrestrial to the refined celestial frequencies, each depicted as existing one within the other in a holocosmic way and able to continuously transform into each other.

![Figure 7.14 The generic constituents as an interlocking system of gateways and pathways](image)

Apart from the spiral path where the elements make their "transient appearance" as gateways in the "flux of shifting qualities" (Cornford 1937:181), a synthesis and equilibrium is contained in the connection between companion members, namely in the symmetrical crossing of two complementary pairs as the four primary orientations of creation. The extremes fire and earth, and the mean qualities air and water are patterned as a quarternity within the circle characterised as "a set of contrary qualities" (Guthrie 1962:79) subject to cyclic transformation (Cornford 1937; Taylor 1928).

5 The Greeks also equated a fifth element (ether) with "the universe as a whole" (Guthrie 1962:267–268).
The spherical complementary arrangement constitutes an inter-related yet subtle difference in the perception of their organising principles to the spiral movement which completes and connects the cycle between heaven and earth. In addition, the threefold structure of the deity needs to be included in each perception. That is, by applying the Pythagorean concept that the soul consists of a tetrad together with the trinity of the deity, which interpreted by Jung means “circle and quaternity on one side and the threefold rhythm on the other interpenetrate so that each is contained in the other” (Jung 1968b:307-8). In the system of ideas this relation between threefold rhythm of the outer, inner and central, together with the fourfold rhythm of the qualities determines the dynamics of its organisational principles. This makes possible the relationship of a reference centre between the sphere and spiral perception as being higher or lower in the unity and diversity continuum. It is the maintaining of this equilibrium that, according to Heraclitus, “forms the ‘hidden attunement’ of the universe” (Burnet 1930:163).

Conceptual relevance. The division of unity pursues the relationship between the physical and ideal worlds in an orderly and harmonious fashion by providing the rhythm of number and frequency as the key to moving between their qualitative and quantitative dispositions. A system of pathways determines the relationship of processes within the direction of flow along the higher and lower frequency spiral, while gateways determine the level of reference associated with the position along the spiral. A reciprocal and organisational dialogue ensues: “[o]ne comprises wholeness, two divides, repeats, and engenders symmetries, three centres the symmetries and initiates linear succession, four acts as a stabilizer by turning back to the one as well as bringing forth observables by creating boundaries” (Von Franz 1974:74). The mutual relation between these rhythms keeps them in continual and dynamic balance.

7.8 Organisational matrix: dynamic patterns of relationships

Central metaphor. The organisational principles of the generic constituents in the world creation are based on dynamic patterns of relationship between the eternal qualities and their external appearances within the unity and diversity continuum.

Key ideas.

- Organisational patterns in the unity and diversity continuum are created by a dynamic balance between motion and rest, i.e. between the still point of the eternal world and its relationship to the motion of the temporal world.

- The world creation is held in balance by a constant state of organised relation between its generic constituent parts stretched between the eternal and temporal worlds.

- A central organisational dynamic emerges in the dance between coherence and change created by the interface of expanding and contracting energy fields and flows.
• Integration (unifying) and differentiation (diversifying) act as organising principles within the matrix of pattern relationships at any position of reference.

• A system inherently strives towards order and harmony by tuning in and creating resonance within itself while remaining in continual relationship with its contextual environment.

**Introductory description.** According to Plato, motion and rest are determined by "disequilibrium between the four elements" or constituent qualities of the world body that cause the process of transformation between them "to continue unceasingly" (Plato [ca 360 BC] 1977:81). Motion can never take place in conditions of unity, as stillness can never exist in the relative world of diversity. Rest and equilibrium are always associated, motion and equilibrium always dissociated. Thus, "[t]he circuit of the whole, within which the constituents are comprised, being spherical and therefore naturally inclined to return on itself, hems them in and allows no space to remain empty". So, "fire has achieved the maximum interpenetration of the rest; air the second, having the second finest particles; and so on with the others" (Plato [ca 360 BC] 1977:82). The system of ideas transposes this image into its organisational matrix to determine the relationships and dynamics between constituent parts, their processes and pattern possibilities.

### 7.8.1 The world creation as a matrix of organised relationships

Since the world exists "as a matrix of indivisible inter-relation" (McTaggart 2003:14), mediated by "exchange of energy, which is constantly redistributed in a dynamic pattern" (McTaggart 2003:27), it requires organisational principles that accommodate complex networks of patterns as transient energy constellations emerging from the underlying flow of processes. Recalling for a moment the image of vibrations emanating from a centre point and reflected back from the circumference, the system of ideas demonstrates the holistic and holocosmic nature of its relationship patterns. Waves are carriers and encoders of information, constantly interchanging to create interference patterns that can be transferred non-locally to all other parts of the cosmic system at once and, a change in any constituent part of the world creation affects coherence in every other part of the system as a whole (Laszlo 1995). Constituent patterns and processes that arise out of the interaction of expanding and contracting webs of waves and their inter-connections continuously strive for dynamic balance within the whole amount of available energy. These are recursively maintained by a resonance or tuning between all constituent environments of the system. When a system shows a high degree of resonance it is said to be consonant, concordant or orderly. When a system shows a high degree of resistance it is said to be dissonant, discordant or disorderly. This is relative to its position of exchange between multi-layered and multidimensional environments. The concept of tuning contributes to the systems state of balance and stability within itself and within the whole context and cosmos. As mentioned before, it can be likened to the regulation of transmission and reception frequencies that it draws out from or emits to its respective environments. An increase in tuning can lead to enrichment, increased possibilities and
organised complexity within the overall propensity of a system, showing new patterns emerging; while a decrease in tuning can result in depletion and eventual demise of the system (Járos 2001b). In the physiology of consciousness of the universe, each system knows its own inherent tuning frequency for change and coherence (Wallace 1993; Sheldrake 1989). If a system exceeds its resonant capacity, it may disintegrate or change its frequency identity and be transferred to another state of being (Cloete 1999). Tuning therefore ensures that systems, their constituent parts and environments remain replenished, resilient and mutually beneficial to themselves and to each other. A reciprocal process in the direction of inward, outward and self-directed activity achieves this dynamic equilibrium.

### 7.8.2 Integration and differentiation as an organising principle

Harmonic governance in the system of ideas is based on the inherent organisational dynamic between the eternal ideal and the relative world. Heraclitus referred to the tension of opposites that are inseparable, "two sides of the same process" (Burnet 1930:165). The "view that the soul is a 'harmony', or rather an attunement, is intimately connected with the theory of the four elements" (Burnet 1930:295) and so "the apparent strife of opposites in this world is really due to the opposite tension which holds the world together, so in pure fire, which is the eternal wisdom, all these oppositions disappear in their common ground" (Burnet 1924:62). Where the upward and downward paths meet in fire "there is no separation, there is no relativity" (Burnet 1930:166). Complementary and polar opposites have remained in philosophic discourse throughout time and appear in the systems literature such as social systems, natural and human processes as well as aesthetics: there is unity in opposites and opposites in unity (Sabelli 1989). When we "consider the changes in states or levels of consciousness that may be involved in new paradigm research" (Rowan & Reason 1981:113), conventional notions of opposites are challenged on three main levels of dialectical thinking: namely, the interdependence of opposites (e.g. dark cannot exist without light); the interpenetration of opposites (e.g. dark exists within light); and the unity of opposites (i.e. opposites as an unbroken unity in which each extreme becomes the other). The terms synergetic or complementary relationship is used in the present text when dealing with complex and multidimensional systems, proposed as the interplay between two mutually reinforcing tendencies, such as integration and differentiation, rather than that of a union of opposites which can be misleading in its interpretation (Járos 2000; McNeill & Járos 1996).

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6 The synergy of complements is the interplay between two mutually reinforcing tendencies rather than a union of opposites. It can only happen if the inward and outward are vector quantities. As vectors they can add to create the third force, the central. If inward and outward opposed one another, the resultant would simply be the difference between the two. If they are equal you would land up with a resultant of zero (personal note, G Járos 07 June 2005).
The principle of integration and differentiation therefore rests on a systems capacity to organise the dynamic complementary relationships within its constitution. The vibration rate of the higher dimensional unified energy slows down and becomes dense as it approaches diversity and vice versa, affecting the rate of transmutation of frequencies between the elements. Each frequency gateway provides a relative degree of resonance or resistance in its dual passage of flow depending on its placement along the path (Figure 7.15) e.g. fire has greater natural resonance towards higher states and greater resistance to the lower, requiring more effort to manifest its qualities. The more the system integrates and differentiates its natural frequency capacity, the higher it rises along the qualitative scale in the unity and diversity spectrum. This means that it gains more awareness of itself as a differentiated system and of the whole as a unified system without necessarily relinquishing its contextual position in the dynamic order of the reflected world. This state is referred to in the Pythagorean-Platonic view, and in many spiritual systems, as rising above the material world by having a more enlightened perspective of existence.

The Eastern system of the chakras, referred to as kundalini, for example, is known to function on this basis (Leadbeater 1990). Chakras are creative energy centres perceived as spinning discs or torroids of energy in a multidimensional vortex that provide a conduit for spiritual energy passing into physicality. At the base chakra lies the coiled serpent, asleep until conscious awareness is raised from the individual’s lower state to a higher state of universal unity at the crown chakra. Although consciousness is raised, it is achieved by a two-way flow between the ascending and descending currents through each chakra until balance is attained between them in a mutually heightened state of awareness. The chakra system is aligned with, but not equated with its physical counterpart situated along the spinal column, the endocrine system: “chakras are not physical entities in and of themselves” (Judith 1996:5). They operate as a kind of separate electromagnetic field “yet they have a strong effect upon the body as they express the embodiment of spiritual energy on the physical plane” (Judith 1996:5). In the system of ideas, differentiation of each quality or element along the spiral means giving recognition and expression of its potential in a diversified context on whichever level it
manifests. Integration means absorbing the qualities into the systems whole as a transcended or higher self. A lower self, or quality, is one that remains bound by the diversified effects of a relative world.

7.8.3 Consciousness as the cosmic dance of change and coherence

Each of the complementary synergies positioned along the inward and outward path in the system of ideas needs to be made conscious by the central referencing system as a "self-referral consciousness" (Wallace 1993:21). That means "the simultaneous coexistence of unity and diversity within pure consciousness" (Wallace 1993:228) and "this field of pure consciousness at the deepest level of the human mind is the same universal field of pure consciousness at the basis of all existence" (Wallace 1993:22). The field and flow systems exist as creative energy waves of probability that can collapse into identified states only when measured or influenced by an observer (Heisenberg 1971). The resulting coherence emerging from flux and change, based on the particle and wave perception, is thus interchangeable and simultaneous, a sort of "participatory relationship" (McTaggart 2003:13). It has been suggested that the nature of human consciousness itself interacts with the environment to create order, thus in effect co-creating existence: "the coherence of consciousness represents the greatest form of order known to nature" so that, by our attention, "each of us creates the world" (McTaggart 2003:160). Change and coherence keeps consciousness connected with the cosmos: "[p]erfect coherence is an optimum state just between chaos and order" (McTaggart 2003:66).

In the system of ideas, each quality has its own resident frequency and, as part of a resonant system, forms a harmonic relation to the whole i.e. a relative higher or lower state, as well as a reflected appearance, or holocosm, in all other qualities. A strengthening of any one quality reverberates to all other qualities. Any excessiveness or deficiency in the system's ability to receive, to assimilate or express energy can result in an imbalance (Cloete 1999). The effectiveness of the system lies in maintaining dynamic balance within the whole. Tuning in both directions is imperative for the growth and development of every system. A quality in closer proximity to the higher level faces greater resistance in its differentiating function towards the lower level and vice versa, a quality in closer proximity to the lower level faces more resistance towards the higher levels. Each spiral rung increases or decreases in frequency, and, each sweep of the circular face emerges in a four-directional sphere. The organisational matrix can be transferred across the multi-layered and multidimensional universe (Figure 7.16) in which we can foreground different systems aspects and their links to determine a higher order "pattern which connects" (Bateson 1985:20) the system to its meta-context of possibilities (Keeney 1983).
The degree of tuning is therefore relative to its inherent frequency. A quality needs to tune in to both its inherent frequency to ensure coherence i.e. preservation of the system, as well as exercise its intended frequency tuning to differentiate and bring about change i.e. redirection of the system's energy. The interaction between the two interweaving forces creates the energy flow through the system's centre that results in these two distinct organisational tendencies. Dynamic organisation is thus both intended (causal) and emergent (acausal) in the dance of change and coherence.

**Conceptual relevance.** The dynamic organisational matrix provides the system of ideas with the propensity to abstract the meta-patterns of relationships amongst systems qualities. It assists in determining the system’s state of change and continuous coherence. The different qualities are enlisted in the service of the frequency spectrum that determines their degree of relation to each other as well as to the extremes of diversity and unity in the whole of the world creation. On a meta-contextual level, the way we choose to view the world impacts on our conscious awareness and in turn influences the world around us. At the present time, in which our experience of reality has become rather complex and fragmented, it may be beneficial to investigate the relevance of strengthening the symbolic relationship with the ideal world into a greater union within the self.

### 7.9 The greater unified whole: an integration of worldviews

**Central metaphor.** The system of ideas integrates the ideal-conceptual and the actual-physical realms with the logical-scientific and the symbolic-mythological worldviews into a greater unified whole.

**Key ideas.**

- The system of ideas merges the higher realm of the internal spiritual world with the lower realm of the external material world into a coherent system.
- The musical universe seeks an integration of worldviews between a logical-scientific and a symbolic-mythological universe.
• Extremes balance and unite in the principle of harmony which is universal and which encompasses a greater unified whole.
• The eternal and relative worlds are mutually reciprocal and governed by omni-causal principles.
• The greater union embodies the dual perspectives in their upward and downward as well as inward and outward directions on the basis of: as above so below, as within so without.

**Introductory description.** In the system of ideas, the complementing dualities and worldviews are integrated into a greater unified whole. It offers a new paradigm for raising one’s awareness to a higher order or deeper dimension of purpose and meaning. That is, it presents an opportunity to make the invisible metaphors of harmony underlying the universe visible by mediating a subtle shift in worldview so that new patterns of order can emerge and constellate in our consciousness. Ultimately, it seeks balance and reconciliation between the speculative philosophical worldview with the empirical scientific worldview to explore the implications for a contemporary systems cosmology: as above so below, as within so without.

**7.9.1 Seeking reconciliation between symbolic and scientific views**

In the system of ideas, reality is the whole. Reality is both conceptual and physical and neither the scientific nor the symbolic view on its own can represent the whole of reality. The systems worldview, the new science of holism, includes issues of relatedness, values and quality but has not as yet become fully integrated into contemporary life and practice. For example, there is still a tendency on the part of scientific society to regard ethnic cultures as under-developed communities who have not been exposed to the technological advances of the Western world and who are inadequately educated and reliant on nature or external powers for their survival and wellbeing. The use of intuitive or divinatory sources of information is frowned upon. The position in the system of ideas is that each of these respective communities brings a particular strength to their worldview. However, as part of a greater whole, it should not be to the detriment of, what is considered, their complementing other. They should strive to develop and include, instead, the complementing qualities to become integrated wholes, whether on the level of the global community, or on the level of the self. The respective symbolic and scientific communities need to foster understanding between them and to form supportive and complementary partnerships. For many indigenous communities who embrace the symbolic worldview, life is a celebration of return and renewal in a circular passage of time with an eternal connection to harmony and relationship, and not progression of separate and causal events (Courlander 1996; Von Franz 1994; Olson 1980; Campbell 1968; Eliade 1964). For these communities, symbol “is not an abstraction or a reflection of reality”, rather it “permits direct connection with the energies, spirits, and animating power of nature” i.e. they are not considered metaphors, images, representations or abstracted archetypes, instead “they are the reality itself” (Peat 1994:257). This is different to the way a scientific world uses symbol and metaphor, in which
conceptual models and frameworks employ abstract mental representation, fragmentation and objective distance that involves reason and logic to describe or explain phenomena, even in the interpretation of symbol itself. There is thus a distinct difference in description to what is termed conceptual and physical in these respective worldviews.

7.9.2 A greater union between the conceptual and physical worlds

In the symbolic worldview, cosmology is integrated directly into physical life expressing the relationship with nature and the creating deities through celebration and ritual that engage closely with the unified consciousness (Von Franz 1995). It is not a separate conceptual pursuit as with the scientific worldview which, on the other hand, moves from the externally visible world of objects towards the inner essence by means of detailed analysis and abstracted conceptual systems in which the mind “assembles itself into something tangible in the manifest world” (McTaggart 2003:159). A series of incidents exploring the movement between separate realities from different cultural views, as documented by anthropologist Carlos Casteneda in his encounters with the Mexican, Don Juan (Casteneda 1973), occurs by apparently fixing different assemblage points in consciousness (Casteneda 1993). Symbolic societies “rely upon the ear to reveal a world of energies and vibrations” that honour their relationship with it as a continuous unified state of flux and flow. They do not seek, as their scientific counterparts do, the stability of concepts or analysis in the material world to bring them in harmony and balance with the whole (Peat 1994:276).

In an essay, “Two Kinds of Thinking” (Jung 1967b), Jung distinguishes on one hand the directional thinking prevalent in the Western view which has accordingly produced the readjustment of the human mind to which we owe our modern empiricism and technology. The other kind, fantasy thinking, is invested in myths and dreams, apparently undisturbed by the outward nature of the world, their vitality and continual rejuvenation welling up from an inner source to produce an ever-changing succession of forms. The goal of its interest “does not seem to have been how to understand the real world as objectively and accurately as possible, but how to adapt it aesthetically to objective fantasies and expectations” (Jung 1967b:21). According to Jung it is not appropriate to regard the former as more intelligent since it is merely our material knowledge that has increased but not our intelligence: “we have become rich in knowledge, but poor in wisdom” (Jung 1967b:19). There was a time however, when mythological thinking was universally recognised as a legitimate truth. By evoking myth, dream and fantasy, directional thinking can be brought in contact with the deepest and oldest layers of the human mind, lying buried beneath the threshold of consciousness (Jung 1967b). These two kinds of thinking can also be referred to as logical and mythological worldviews (Chetwynd 1998). The system of ideas asserts that mythological perceptions are not scientifically verifiable (Bateson 1991). Instead, the symbolic-mythological and the logical-scientific worldviews seek a shared and greater unity.
7.9.3 The unified whole: towards a coherent systems cosmology

The idea of symmetry between these worldviews in the system of ideas demonstrates a kind of synthesis or synergy in which their complementarity is only apparent on the actual level of a relative or diverse physical world. The integration of physical and conceptual realms with scientific and symbolic worldviews resides on a higher level of deeper unity. This is similar to what Jung and Pauli sought in the collaboration between psychology and physics with their acausal connecting principle (Jung & Pauli 1955). The ideal is for them to become complementing views of the same reality in a simultaneous embrace of the quantitative and the qualitative. The only acceptable point of view appears to be “one that recognizes both sides of reality – the quantitative and the qualitative, the physical and the psychical – as compatible with one another” (Pauli 1955:208). As we engage in inquiry within the new paradigm, conventional approaches to consciousness are no longer appropriate: “[i]t is increasingly clear that there are many different ways of being in this world, many levels of awareness about alternative ‘spaces’ that we may occupy either permanently or temporarily, but the trouble is that we have few clear or shared ways of identifying these or of talking about them” (Rowan & Reason 1981:114). A greater unification of worldview impels one to recognise the significance of the symbolic-mythological as well as the logical-scientific in a mutually compatible way, one in which archetypal images can participate in the creation of empirical scientific concepts for a more complete understanding of reality. This can result in an ongoing relationship of infinite possibilities as “a sort of self-generating feedback loop across the cosmos” (McTaggart 2003:30).

![Figure 7.17 The greater whole: a unified view](image)

The system of ideas places the dual perspectives in auxiliary positions along complementing axes (Figure 7.17). It is drawn from similar diagrams such as those of Jung and Pauli (Jung & Pauli 1955) as well as the symbol diagrams for mythological and logical worldviews (Chetwynd 1998). In the figure, the conceptual realm is aligned with indestructible energy from the tetrad of Jung and Pauli, referring to the eternal, and the physical realm with their space-time continuum, referring to the time-
bound relative world in the unity and diversity metaphor. Likewise, the mythological view is aligned with their inconstant connection through contingency, equivalence, or meaning (synchronicity) and the logical with constant connection through effect (causality). Superimposed over the figure are symbols from the mythological and logical worldviews by Chetwynd in which the mythological world is aligned with wisdom and intuition that reveal inner meaning, and those of values and feelings that reveal relationships directed to the outer world. The logical view represents knowledge attained through thinking by involving concepts and theories, and images and sensations that are aligned with the external physical material world. Together they represent an omni-causal world on the level of self (Figure 7.18). This description of an underlying unified force creating material diversity as a self-interacting and self-referral field of pure consciousness is similar to the account given by ancient traditions of the world that has become displaced by science (Wallace 1993). It also reflects the ancient Greek view regarding “[t]he assumption of an imperceptible reality behind the perceptible” and for “seeking a unity behind the multiplicity of phenomena” (Guthri 1962:78). This cosmological scheme inhabits any system as a holocosmic model within the whole: “the universe repeating and enfolding itself at every level” (Peat1996:258), to produce a unified worldview. In the system of ideas, the higher union explores patterns that connect these different views of existence by introducing anologic thinking: “[l]ogic is goal-orientated and passes judgement” whereas “[a]nalogy ponders and establishes relationships” (Berendt 1988:60), the hallmark of the harmonic worldview.

Conceptual relevance. The integration of the complementing views, the symbolic-mythological and the logical-scientific, in the system of ideas unfolds a unified systems cosmology for embracing diverse perspectives on life. Meaning is derived from multiple contexts, not only from theories and concepts but also from images and stories (Bateson 1985). “There is no single, unique reading to a story, but rather many enfolded and interpenetrating levels, none of which needs be thought of as being more fundamental than any other”. Understanding “comes from a direct experience of the dance between the levels of meaning” (Peat 1994:264). The image of the sun in the music of the spheres signifies the “one expression of the harmony of all things, a harmony that extends from sky to earth
and can never be fragmented into separate domains” (Peat 1994:265-166). It represents both the eternal presence and its recreation by day to demarcate duality. The harmonic worldview as primary reality ignites the relationships of all that exists and offers another way of experiencing the complex universe.

### 7.10 Music archetypes: integrating metaphor and mediator

**Central metaphor.** The metaphor and mediator aspects of the system of ideas are integrated according to the harmonic ordering and organisation of the world creation through the music archetypes that exist on the ideal realm as qualities and their actual physical equivalents, the music elements.

**Key ideas**

- The system of ideas culminates in the merging of the ideal metaphor of the music archetypes with the actual mediating music elements.
- The music archetypes and their reflected music elements follow the harmonic ordering and organisation as the constitution of the world creation.
- The music archetypes and music elements namely rhythm, harmony, melody and tone are arranged in the same order as the natural elements from the terrestrial to the celestial realms.
- The music archetypes resemble the ideal pattern of a transcendent higher self co-creating the domains of universal music, instrumental music and the music of the human being with the inner, outer and central domains of a lower embodied self.

**Introductory description.** In the system of ideas, the music archetypes bring the whole creation to harmony and order by giving the music elements a definite pattern in the physical world. The physical music elements emulate their ideal archetypes. They are symbolically aligned with the natural
elements to adopt the same arrangement in the world scheme, a unique contribution of this text. Thus they unfold within the metaphor-aspect in a specific order along the cosmic monochord spiral and occupy prefigured positions in the cosmic mandala sphere. The mediator-aspect links the different world bodies in a harmonious way. The mythological Mercury personifies the mediator as the messenger between the multi-layered and multidimensional worlds and their constituent parts.

7.10.1 Metaphor of the music archetypes and music elements

In the system of ideas, the unity and diversity continuity is mapped by the metaphors of the circle and square as the cosmic mandala sphere and the spiral as the cosmic monochord. Revisiting their symbolic meaning from the perspective of the ancient philosophers, “[t]he circle, of course, represents divine perfection; but its infinity and eternity are rendered finite and timely – that is, made operative in our physical world – by transformation into the square of an elemental tetrad.” Furthermore, “[t]his positioning of the basic qualities suggests that they are ambivalent, existing in both the conceptual realm (the circle) as essences, and also the physical realm (the square) as actualities.” And, “through their agency, the unified perfection of the circle is reduced into the palpable diversity of four elements” (Heninger 1977:185). The system of ideas uniquely transposes this ancient pattern of the natural elements in the world composition and their arrangement to the four main music elements, also known as the “four qualities of music” (Tracey 1948), as archetypes of the world creation, namely rhythm, melody, harmony and tone.

Figure 7.20 The cosmic monochord of the music archetypes and music elements

The first premise proposed in this unique rendering is that the basic music elements as we know them i.e. the generic parameters that make up the music in any culture, reflect their original archetypes. In other words, the ideal pattern of music exists in the eternal spiritual world and “physical music is but a reflection of the spiritual reality” (Steiner 1983:6). The next step is to order these music elements or
archetypes in the sphere and spiral perception of the unity and diversity continuum, namely the mandala sphere and the spiral monochord. Each of these perceptions brings a subtle difference in the organisational dynamics of the world harmony. In its expression as a sphere, it fills out the four directions or quadrants of the circle and square as dichotomous pairs: tone and rhythm on one axis, melody and harmony on the other, each implicit in the other (Figure 7.19). As a spiral, it ranges in order from the element rhythm on the terrestrial realm, through harmony and melody to tone on the celestial realm (Figure 7.20). Reflecting on cosmic music, "[i]f a certain harmony did not join the diversities and opposing forces of the four elements, how would it be possible that they could unite in one mass and contrivance?" and, "[w]hence if you imagine one of these things which supply such diversity taken away, then all things would seem to fall apart and, so to speak, preserve none of their consonance" (Boethius [ca 505] 1989:9). And, as with the natural elements, each musical element is embedded within the other and can transform one into the other. Together they make up the whole musical body of the world creation: "just as, on the one hand, adjustment of pitch in lower strings is such that lowness does not descend into silence, while, on the other hand, adjustment of sharpness in higher strings is carefully monitored less the excessively stretched strings break", the whole corpus "is coherent and harmonious within itself" in the same way we discern with cosmic music. (Boethius [505] 1989:9). Unlike the use of conceptual maps and theories in Western systems in which the map is not the territory, the maps of mythological or indigenous traditions contain symbolic value that connects matter to spirit in a direct and sacred way (Peat 1994). Music has this innate connecting ability and the speculative music maps reflect human proportions that contain the attributes of a harmoniously ordered universe (Heninger 1977).

7.10.2 Three music worlds: universal, human and instrumental music

For Plato, the human soul and body has the same structure as the world soul and body: "[t]hey copied the shape of the universe and fastened the two divine orbits of the soul into a spherical body", the head, "the divinest part of us which controls all the rest" and "then put together the body as a whole to serve the head" (Plato [ca 360 BC] 1977:61). Views proposed by Steiner, support the mapping of the music archetypes in the whole human being: "[p]icture the whole human being who experiences the element of melody gives you the head of this spirit". The ability "to experience the element of harmony gives you the chest, the central organ of the spirit; and the ability to experience rhythm gives you the limbs of the spirit" (Steiner 1983:68). The world of tone existing in the spirit body is brought into physical reality with audible music. Identifying with their archetypal existence, "[w]e experience musical pleasure when outer tones correspond with those within" and experience the image of a higher world when "the world of tone speaks to the innermost being" (Steiner 1983:19-20). The musical world body corresponds to the original tradition of the musica mundana, musica instrumentalis and musica humana (Chadwick 1990,
The notion of music rituals or music-making ignites the path or journey through the different bodies back to our origins and to the creator and accounts for the many sacred music traditions: “the role of music in our concrete world is that of mediator” (Schneider 1989a:84). In the system of ideas, this mediating role can be represented by the mythological figure Mercury, the proverbial messenger between the worlds. In earlier music eras, music theory was assigned to the mind and practical music to the body and emotions while the sensation of tone created proportional relationships between the inner and outer worlds (Boethius [ca 505] 1989; Helmholst 1885): “[w]hsoever penetrates into his own self perceives human music” (Boethius [ca 505] 1989:10).

7.10.3 Mercury: music mediator and messenger between the worlds

In the system of ideas, the mythological Mercury is chosen to represent the mediator or messenger between the different musical world constituents. Known to have invented the magical lyre on the day of his birth, he was said to have been able to command the forces of nature with music. The instrument was later given by his brother Apollo to his son Orpheus who likewise had the power to enter into different worlds, to charm and heal with his music. Mercury traces the music elements through the different bodies of the world creation, aligning each with the effect on its human counterpart. Steiner had already alluded to the aspects of music aligned with the human being. The “element of harmony takes hold directly of human feeling”; “[t]he element of melody guides the musical element from the realm of feeling up to that of thinking” and the rhythmic element “is related to the nature of will”. Just as “harmony can tend upward toward thinking, so it can tend downward toward willing” and “[m]elody thus carries harmony upward; rhythm carries harmony in the direction of willing” (Steiner 1983:64-67). While different musical eras and cultures have awakened different musical meanings, the mapping of music metaphors into life awakens patterns from their inherent archetypes. For example, “[a]t every period in which people have considered music’s position in the world, the metaphor of rhythm has provided an interface between the patterns of stress peculiar to music and the cycles of life and the universe”, and, “[b]y virtue of its intrinsic order, rhythmic pattern is linked not only to physical motion, but also to the geometry of the world in general, and to the rationality of the mind itself” (Spitzer 2004:212). The mediating role of music articulates an aesthetic ordering, not only into concepts and knowledge, but experientially on all embodied levels of being (Bresler 2004a; Spitzer 2004; Lackoff & Johnson 1999). The system of ideas elaborates on the concept of music archetypes being mapped in the transcendent body of creation and embodied in the human being which can be enlivened by the experience of music-making. Transference of the music images in the metaphor-aspect of this system of ideas to the mediator-aspect follows in the next chapter, explored through mediator maps that enliven the whole self in the context of education.
Conceptual relevance. The idea of as above so below, as within so without is found in various systems of spirituality, alchemy and psychology that regard the human being as a reflected model of the cosmos (Peat 1994; Godwin 1979; Heninger 1977; Jung 1968b; Cornford 1937). The same harmonic laws direct the structure and function of these different dimensions of being: “the human being enfolds the cosmos and within the order of body and mind can be found the cosmic order” (Peat 1994:258). The system of ideas has provided the metaphors with which to explore the body of the cosmos or the musical world creation as the metaphoric embodiment of the self which, through speculative music philosophy, quantum physics, consciousness and transpersonal psychology and the inter-connected systemic perceptions of the world, is perceived as extending in an inter-connected way throughout the whole universe (McTaggart 2003; Laszlo 1995; Wallace 1993; Jung & Pauli 1955).

Afterthought. The schema of music metaphors presented above is founded on philosophical and metaphysical concepts of the speculative musicians as well as assumptions of systems theorists supported by related fields. In this chapter they are configured into a unique system of ideas. Instead of engaging from the perspective of critical review or scholarly commentary as is customary in philosophical debate, the ancient doctrines are given direct presence in the text as mythical descriptions relaying concepts alongside contemporary scientific views: the ideas are “mythic rather than rational in kind” (Kirk et al. 1983). Together, they seek to restore a sense of coherence and consistency in worldview. The study establishes a central position from within which a complementing ideal transcendent view of life can be associated with an immanent empirical view of the physical world. The propositions residing on the level of the ideal are not intended to be verified in actual life. Rather, they participate in a process of inquiry about both the perceptual and contemplative worlds with equal authority and with a sense of reflexivity (Alvesson & Sköldberg 2000). Normally a proposition arises in response to a certain kind of reflection, the way in which it is articulated and presented prompting the search for evidence or verification. In the context of this study however, they have become absorbed into what phenomenological inquiry terms, an all-encompassing philosophical reflection, which is more universal as opposed to propositional reflection, which is restricted to a more particular state of affairs. A “propositional reflection is carried out in order to test the truth of the proposition that emerges from it” (Sokolowski 2000:189), in other words, it is carried out in the interest of verification. Propositions can however, also be found within philosophical reflection, where they are contemplated and not verified. Here their truthfulness rather than their truth are recognised. They do not attempt to substitute or be substituted with the empirical. They merely look on “with calm detachment and greater lucidity” in a way that suggests we should “leave everything as it was, for otherwise we would change the very thing we wish to examine” (Sokolowski 2000:190–191). In the next chapter, their contemplation continues as an embodied philosophy (Lackoff & Johnson 1999) of the musical self, in closer dialogue with research concerns raised in the documented educational field contexts discussed in the former chapters.
Part D. Music as mediator: a metaphoric guide

Part D presents music as mediator, which is an extension of the system of ideas. It contains chapters eight and nine, which create a metaphoric guide as mediator maps of the self (chapter eight) with general implications for education (chapter nine), that constitute the mediator-aspect of the meta-frame of inquiry. The metaphoric maps embody the system of ideas as a guide for extending the self across three domains of existence namely, the inner self as ways of knowing, the outer self as ways of relating to the world, and the central self as ways of being and becoming, affording greater connectedness between learner and learning on the basis of self-reflexive co-participation. The emergent central self mediates between a transcendent universal self and an individual embodied self that encompasses the physical, emotional, mental and spiritual as a greater whole. Former fieldwork concerns are revisited within a broader context of education concerns.

Mediator as guiding metaphor. Mediator, usually associated with a person adopting a detached intermediate position in a contrary situation, holds another meaning in a metaphoric context. Metaphorically, the mediator archetype can be aligned with the mythical figure of Mercury as “personification of the centre” (Chetwynd 1998:256), positioned as a symbol of reconciliation between “the one essence and the many appearances” (Chetwynd 1998:257). The Roman Mercurius, also referred to as the Greek Hermes and Egyptian Thoth is known in ancient mythology as the messenger of the gods, and has been likened to the trickster figure playing in the shadows between the thresholds of the higher and lower worlds (Jung 1968b). The trickster can be found in many cultures such as Ananse of the Ashanti peoples in Africa who has frequent encounters with the supreme sky god and who owns all the tales and stories (Belcher 2005; Courlander 1996). Mercury mediates the potential wholeness of the self by having equal access to all domains of being: Mercury is “messenger of the potential wholeness of the psyche, by crossing the threshold between conscious and unconscious” and is “an ambivalent figure, the embodiment of both sides, both attitudes, not either/or but both/and i.e. both conscious and unconscious” (Chetwynd 1998:406-407). Mediation is associated with the Latin medius or medium, i.e. to act “as a means” (Skeat 1993:278). Thus the metaphoric mediator enables a means of transfer in the continuous passage between representing patterns of the self. According to Jung, the alchemical attributes of Mercury can be aligned with the functions of the human psyche as “quantitative estimates of energy” whose relative strengths are determined by a compensatory relationship between the conscious and unconscious (Jung 1969b:3-66). This concept mirrors Plato’s symbolic distribution of the whole amount of energy in the world creation through the archetypal elements and their natural equivalents, which are held in relation to each other (Henninger 1977; Cornford 1937). Jung believes “the psychological mechanism which transforms energy is the symbol” (Jung 1969b:45). Western civilisation today places great demand on directed conscious function and this entails dissociation from the unconscious (Jung 1967b) so that “a powerful counter-position can
Music as mediator: a guiding map of the self

build up in the unconscious" which "may have disagreeable consequences" (Jung 1968b:71).\(^1\) Jung links Mercury with the transcendent function, which arises from their union or, equal access to both attitudes (Jung 1968b:67–91), in the rounding out of the self as a whole (Jung 1969a).

Music as mediator. Image schema "can be extended and elaborated metaphorically to connect up different aspects of meaning" (Johnson 1987:65). Metaphor can therefore be used directly as mediator, i.e. in abstraction rather than specific application, as an approach to seeking the relational and integrative in our comprehension from whence novel concepts may emerge (Ortony 1993). Mapping the ontology of a music of the spheres metaphor guides our metaphysical inquiry into the nature of being itself, from existence on the realm of being to the process of coming into being, or becoming. Central to the Pythagorean-Platonic metaphysics "is the metaphorical conceptualization of the essences of things in the world as ideas perceived by the mind" i.o.w. "we know our ideas directly" (Lackoff & Johnson 1999:367). Hence our concept of the self is fundamentally metaphoric, although a philosophy in the flesh, since "the very structure of reason itself comes from the details of our embodiment" i.e. "[t]he same neural and cognitive mechanisms that allow us to perceive and move around also create our conceptual systems and modes of reason" (Lakoff & Johnson 1999:4). These abstract concepts, structured by multiple complex metaphors, exemplify "the cognitive unconscious, the embodiment of mind, and metaphorical thought" (Lackoff & Johnson 1999:73). Metaphoric maps also chart territories beyond the realm of thought processes by taking concrete and personal experiences as a conceptual and reflective articulation "placed into another plane of meaning" that guides us to expanded states of consciousness (von Eckartsberg 1989:22). The metaphor of a map in itself, as a frame of reference, implies a journey to explore, and which directs us on our way as opposed to a model or theory which describes what it is (Metzner 1971). Spitzer distinguishes between cognitive and aesthetic metaphor: "art affords a richly grained mode of experience that is valuable precisely because it cannot be subsumed by concepts" (Spitzer 2004:77), and music aesthetics organizes thought, which is diametrically opposed to cognitive metaphor theory's view that thought organizes music: "music structures thought as much as thought structures music" (Spitzer 2004:92). Music thus exemplifies a higher kind of rationality that transcends concepts in which "[c]onceptualization is lifted up to a higher dimension of aesthetic experience" (Spitzer 2004:78). As with Spitzer, the music metaphors of this thesis are presented through hermeneutics rather than the reflective distance of critical theory because it includes embodiment in creative aesthetics, establishing links with epistemology which "foregrounds the connectivity between ourselves and our frameworks of knowledge" (Spitzer 2004:79).

\(^1\) All mention of the unconscious in references is reconsidered as unity consciousness in the mediator guide.
8. Mediator-aspect of the meta-frame: a metaphoric guide

This chapter presents a metaphoric guide as the mediator-aspect of the meta-frame of inquiry, devised as a metaphoric map of the self. The purpose of the mediator-aspect is to complement and extend the metaphors and key concepts of the system of ideas presented in the former chapter and to accommodate and enliven their assumptions as a guide within general education contexts. This is achieved by devising metaphoric maps of the musical self from different levels and dimensions of inquiry that serve as an illustrative counterpart for exploring the contextual implications of the conceptual ideas on a meta-level of discussion. In so doing, the systems inter-relatedness between the interfacing metaphor- and mediator-aspects become visible while some of the ideas and activities experienced in the former field contexts (see chapters two, three and four) are revisited retrospectively, having recursively co-contributed to the development of the meta-frame of inquiry.

The mediating maps provide a metaphoric guide for entering into a worldview based on pattern organisation and systems relationships that encompass different perspectives and modes of description (Bateson 1985; Keeney 1983). This requires an epistemological change that moves beyond the apparent Cartesian split between an inner and outer self, a change that "means transforming one's way of experiencing the world" (Keeney 1983:7). Here, the self is not perceived as a separate entity but one which recursively co-creates a world between outer sensory experience and inner abstracted images to form connections through an internalised metaphoric system from which we mediate our experiences to derive a coherent system of meaning (Van der Hoorn 1995). An aesthetic understanding of change re-contextualises the self with a respect and appreciation for the embodied and inter-connected whole, mediated through metaphor (Spitzer 2004; Lackoff and Johnson 1999, 1980; Ortony 1993; Johnson 1987). The purpose of the metaphoric maps is "to present a more comprehensive framework for understanding change" (Keeney 1983:9) by presenting a set of schemata that focuses on "embodied patterns of meaningfully organized experience" (Johnson 1987:19).

The mediator metaphors are founded on maps of the self presented on three domains of existence and their organisational dynamics, namely the inner domain: ways of knowing, the outer domain: ways of relating to the world, and the central domain: ways of being and becoming. Each domain represents its own respective and inter-connected four-fold division of generic qualities as the spiritual (intuitive), mental (thinking), emotional (feeling) and physical (sensing) aspects of self. These culminate in a meta-pattern of the transcendent and embodied self as a greater unified whole. A brief exposition of the metaphoric self follows as an introduction to the discussion. The diagrams accompanying the metaphoric maps are my own.
8.1 Introduction: an exposition of the metaphorlic self

The mediator maps of the self reflect the multi-layered and multidimensional constitution of the world creation as a dynamic and self-organising system. It is mapped out in patterns of connections between the unity self and individual self as three worlds or domains namely, the inner self: ways of knowing, the outer self: ways of relating to the world and, the central self: ways of being and becoming. These are viewed from both a field-like perspective of interacting worlds within worlds (Figure 8.1) and a flow-like perspective creating a linking continuum between a higher and lower self (Figure 8.2). While both perspectives depict versions of the same system of self, the subtle variations in their respective conceptualisations yield different sets of relationships and organisational dynamics.

Each of these domains of self, namely the inner, outer and central domains, in turn comprises the four generic qualities or dimensions of self represented as the spiritual self, mental self, emotional self and physical self on each of the respective domains. In a field-like perspective these depict a sense of balance and wholeness within self (Figure 8.3), while the flow-like perspective focuses on their linking continuity between the higher and lower self (Figure 8.4).
The three domains or layers of the self thus each encompass four dimensions or qualities of being which are embedded within one another, enfolding from within and unfolding upon each other as a holocosmic representation of the self (Figure 8.5). From this map of the self a matrix of connections can be established defining the qualities on each of the domains in certain reference contexts so as to show their relatedness to each other and to the whole from whence complex multi-layered and multidimensional dynamic patterns of inquiry becomes possible (Figure 8.6).

From the interaction and flow between the inner and outer self emerges the central self which, once the qualities have been brought in balance and connectedness with the whole, appears as the embodiment of the lower self of its ideal transcendent archetype, the higher self. Taken together, the field and flow perspectives of these domains can be arranged according to the division of the greater whole, encompassing both the cosmic mandala and spiral monochord metaphors. That is, by crossing the ideal-conceptual and actual-physical axis with the logical-scientific and symbolic-mythological axis that delineate the generic constituents and processes of self, the spiritual self, mental self, emotional self and physical self across the inner, outer and central domains to present a holistic and integrative map of the self (Figure 8.7).
This meta-perspective, with its metaphoric configurations of the self, has the potential to open possibilities for mediating a deeper understanding and experience of life and learning in the context of education. It makes a vital contribution firstly, by extending the learning environment as crossing all three domains of the inner, outer and central self as well as the respective qualities of the spiritual, mental, emotional and physical self, and secondly, by including a central sense of self as distinct from an outer and inner environment, which is not apparent in other theories of the self. This marks the self-organisational dynamics of the self around its own centre. It is explored below through the different domains of self, namely: ways of knowing as the domain of the inner self, ways of relating to the world as the domain of the outer self, and ways of being and becoming as the domain of the central self, before culminating in the unified self.

8.2 Ways of knowing: domain of the inner self

The inner domain of the self represents the inward dimensions of the world creation, namely ways of knowing. It identifies with the *musica mundana*, the cosmic archetypes, in the music of the spheres metaphor (Chadwick 1990; Boethius [ca 505] 1989; Heninger 1977). Its concern is to raise the mind in its efforts to derive understanding of the way we come to know our self in terms of how we relate to the world in general: "In the context of philosophy, epistemology traditionally refers to a set of analytical and critical techniques that defines boundaries for the processes of knowing" (Keeney 1983:13). These include the "cognitive unconscious, the embodiment of mind, and metaphorical thought" (Lakoff & Johnson 1999:7). As descriptions of worldview differ between cultures, disciplines and individuals, coherent and integrative conceptual frames of reference are needed to accommodate diverse perspectives that aim to create harmony within self and society (Mans 2005; Benking 2000, Van der Hoorn 1995). Awareness of different ways of knowing on the inner levels of being establishes the epistemological premise for creating meaning and purpose, and provides the basis through which we define our existence and connectivity with life (Capra 1996; Bateson 1985; Keeney 1983).

8.2.1 Ways of knowing: the systems concept of mind

As gleaned from chapters five and six, both the systems and speculative music views imbue our perception of the world with the notion of a living network of relationships. Our systems of knowing, referring to the scientific view, were previously marked by structural terms such as fundamental principles, foundations and basic building blocks (Capra 1996). These, however, have begun to experience some uncertainty and groundlessness in the Western world (Heisenberg 1971). This "sense of loss of foundations in contemporary science and philosophy" (Varela et al. 1993:29) has paved the way for more inter-connected and relative perspectives in which no discipline appears more
fundamental than any other in describing the world and, in which the realisation of the effects of colonisation on indigenous cultures such as Africa (Mudimbe 1994, 1988) has led to a renewed respect and revival of indigenous knowledge systems (Odora-Hoppers 2002). Not only has this given rise to new knowledge systems and networks, but has, above all, called into question the very process of knowing itself as an inseparable part of our description and experience of the world (McTaggart 2003; Varela & Shear 2000b; Maturana & Varela 1992). Some of the perspectives that have contributed to the changes in our systems of knowing are mentioned below.

Process of knowing. Mind, perception and cognition as a process of knowing distinct from an entity that processes knowledge or information, found expression in the work of the process systems thinkers (Maturana & Varela 1992; Bateson 1991, 1985). The systemic concept of mind traverses many levels of knowing beyond the body and is broader than that of thinking being located in the boundary of the brain, so that the brain is merely a particular structure through which the mind manifests complex patterns of knowing. The "mind can never be limited to what goes on within the boundaries of the skull" (Keeney 1983:109) and is a mere sub-system of the mind of the creator (Bateson 1972). The emphasis has shifted to mental processes as a recursive system with higher orders of patterns that connect. It recognises other processes of knowing, such as abductive modes that rely on analogic thinking, which extends across seemingly disparate and non-linear terrain to form complex connections and metaphoric understandings (Ortony 1993; Bateson 1991, 1985, 1973).

Neural networks and patterns of connectivity. Research in neural networks has contributed to our changing perceptions about the process of knowing to involve patterns of connectivity and coherence (Petsche & Etlinger 1998). Knowledge of the brain, its structural layout and neurological functions, have impacted on different theories and models of mind over time. These include the left and right hemispheric models (Sperry 1964), the triune brain model which consists of the older hindbrain or reptilian brain, the midbrain or limbic system, and the more recent forebrain or cerebral cortex (MacLean 1985), multi-mind or multiple intelligence models (Gardener 1993; Ornstein 1972) and quadrant whole brain models (Herrmann 1995). Initially, it was thought that particular thinking activities were localised in specific brain areas that controlled respective functions. However, it is believed that in the evolution of the brain each newer part overlays the older, creating recursive communication feedback between them, and that the emergence of higher phenomena such as ideas, images, analogies and consciousness form a kind of self-reinforcing resonance between different levels (Hofstadter 1987). Today, there is general agreement that for every mental event, numerous networks act synchronously to co-operate across the brain and in which different states of mental activity are distinguished by brainwave patterns that create resonant fields of electrical frequencies (Herrmann 1995). An increase in connections, complexity and coherence characterises a higher degree of cognitive and creative involvement (Petsche & Etlinger 1998).
Since the concept of self-organisation emerged in systems theory (Maturana & Varela 1992; Capra 1996; Kauffman 1993; Bateson 1985), the process of knowing has shifted to include connectivity, coherence and emergent properties. Living systems were found to have a self-making capacity in the way they regenerate, transform and maintain themselves. According to this generation of systems thinkers, "to live is to know" (Maturana & Varela 1992:174). Knowing is no longer a representation of an independent and pre-existing world that needs to be extracted and ingested mentally: "we will propose a way of seeing cognition not as a representation of the world ‘out there’, but rather as an ongoing bringing forth of a world through the process of living itself" (Maturana & Varela 1992:11). The continual bringing forth of a world is a process of direct human experience as embodied action, since cognitive experience involves the knower in a personal way, rooted in our very physiological structure (Lackoff & Johnson 1999, 1980). The former concept of mind as an input and output information processing device moves towards the idea of an emergent mind forming multiple levels of inter-connected networks. The capacity to enter into a shared world of significance binds self and experience together in a process of reciprocal specification and selection (Thompson 2001; Varela & Shear 2000b), i.e. "organism and environment enfold into each other and unfold from one another in the fundamental circularity that is life itself" (Varela et al. 1993:217). For indigenous knowledge systems, such as those found in Africa (Shutte 1993; Senghor 1965), to know is not merely to investigate something, but to live it: "[t]he knower is not separated from the known, neither is the mental separated from the material, a profound metaphysical difference from the European scientific-technological approaches to philosophy and life" (RSA 2001a:20). Scientific perceptions of knowing are approaching indigenous wisdom philosophies: "[t]his circularity, this connection between action and experience, this inseparability between a particular way of being and how the world appears to us, tells us that every act of knowing brings forth a world" (Maturana & Varela 1992:26), impacting on emerging studies in consciousness.

Field of consciousness theories. The concept of continually bringing forth a world is consistent with emerging theories of consciousness1 expressed as the interacting dynamics between the knower, the process of knowing and the known (Varela & Shear 2000b; Thompson 2001; Wallace 1993; Valle & Von Eckartsberg 1989). The notion that a state of all possibilities exists which collapses into a fixed perception only once observed is due to a participatory relationship between observer and observed (Heisenberg 1971) and it has even been suggested that "the consciousness of the observer brought the observed object into being" (McTaggart 2003:13). It implies that there is no separate existence independent of the self creating its own world from moment to moment and therefore it is not unlikely that "[p]resent or future intentions act on initial probabilities and determine what events actually come into being" (McTaggart 2003:225). The possibility that information exists in some invisible realm or

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1 The term consciousness is not unequivocally defined since it is held in many different perspectives through various disciplines such as psychology, philosophy, physics and spirituality (Valle & Von Eckartsberg 1989).
higher reality to be mobilised when needed, has been suggested in holocosmic theories of the world and the brain (Talbot 1996; Pibram 1989, 1979; Weber 1989; Bohm 1980; Bohm & Weber 1978). It would appear that the degree of organisation of the mind has an ordering influence on its perceptions and its surroundings (Sheldrake 2003; Laszlo 1995). Thus the ability to attain states of increased awareness relies on expanding the field of consciousness. Such enhanced states can be achieved through techniques that relax and reduce the cognitive contents so that activities of the mind may become more synchronised and coherent. This is the case with alpha modes, coherent 40 Hz oscillations and synchronised gamma brainwaves as an electrophysiological correlate of consciousness induced during certain spiritual or meditative states (Lutz et al. 2004; Ricard & Thuan 2001; Shear & Jevning 2000; Zohar & Marshall 2000; Maharishi 1966), which “enables the mind to settle into a state of deep silence while remaining awake” (Wallace 1993:31). It fosters a sense of omniscient knowing, a feeling that “we are everywhere at once” (McTaggart 2003:212). These states, which stretch beyond the perceived boundaries of the self, allow us “to hold the whole of the universe inside us” (McTaggart 2003:176) while existing in an eternal present beyond space and time (Laszlo 1995; Pibram 1989, 1979). It has been referred to as a “field of pure consciousness” that lies at the basis of all existence, including that of the human mind (Wallace 1993:22). It is the eternal silent potential of all dynamic activity, not so dissimilar from the eternal ideal beyond the time-bound reality of Plato’s cosmology (Cornford 1937). Western explorations into the meeting points with ancient philosophies on consciousness can also be found in the noetic sciences (Harman 2000, 1998), the Global Consciousness Project and quantum consciousness research (Hameroff & Penrose 1996; Wallace 1993; Valle & Von Eckartsberg 1989). The basis of the field of consciousness approach, pertinent to this study, is vested in the direct experience, or embodiment, of these states of awareness and not by mere conceptualising or thinking about them (Lackoff & Johnson 1999).

The need for a revised epistemology for thinking, cognition and knowing. Despite the advances in our systems of knowing, having moved from hard-wired pathways to neural connectivity networks and coherence webs across the brain and now into field of consciousness studies, education models remain entrenched in predominantly rational and fragmented modes of thinking that have not assimilated the possibilities embedded in the emergence of complex interacting patterns as demonstrated by these theories. The rise of cognitive science and cognitive psychology (Anderson 1980) has resulted in learning styles in which “educators have come to recognise thinking as a primary goal of education” (Holder 1995:7). Yet, this study maintains that coherence and connectedness in knowing needs cross-stimulation by means of access and relatedness to different modes of knowing. The unification of the rational, logical functions with the affective, intuitive aspects of thinking remains a challenge to prevailing epistemological assumptions in education. The conventional definitions afforded to the term

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2 The Global Consciousness Project consists of a mixed group of scientists and members of other varied disciplines interested in global consciousness from a scientific and aesthetic view. The project can be accessed on <http://www.globalconsciousness.com>.
cognition, which are deeply rooted in logical positivism and information processing methods of Western philosophical tradition as reflected in taxonomies and hierarchical theories of thinking,¹ are not fully representative of the potential of the human mind. In these theories at most, the affective modes are considered merely to motivate cognitive thinking (Piaget 1953) and play no intrinsic role in cognition per se. Motivational-affective factors are more readily associated with the behavioural sciences, and whether they are approached as static and causal, or transactional and dynamic, function merely as an energiser affecting cognitive performance, while termed as “nonintellective factors” (Tzuriel 1991:100). Thus they remain disembodied and subservient to the cognitive process, for to pose thinking on “a qualitatively rich conception of experience would destroy the sanctity of rationality by introducing subjective, ambiguous elements” (Holder 1995:10). John Locke’s original theorising of the mind as a blank tablet, or tabula rasa, receiving information externally for internal reflection (Locke [1690] 1959), evolves into the self participating fully in embodied knowing (Lackoff & Johnson 1999). And Plato’s raising the mind from the world of appearances limited by the physical senses to the higher realm of ideas through “the illuminated intellect” (Tarnas 1996:8) includes expanded states of knowing that dissolve the boundaries between inner and outer as a process of self knowing (Varela & Shear 2000b). In the present study ways of knowing is preferred rather than cognition to inspire a revised epistemological premise for reintegrating other modes of learning and knowing that are more fully representative of the whole self. These are explored below through the generic composition and emerging organisation patterns of the inner domain in the self.

8.2.2 Generic composition and organisation of the inner self

In the metaphoric map of the self there is no concept of mind as a separate functioning entity. The process of knowing is perceived as being integrally connected with the whole human system. Therefore the inner life of the self is represented as an inter-connected matrix extending throughout the whole of creation that enables different ways of making meaning and understanding our relationship to self and the world. There is a continual transfer between the intuitive knowing of an implicit order and the mental patterns that emerge in the context of life experience. That is, the inner self has the ability to tune into inherent archetypal principles, whether implicitly or explicitly, to access intrinsic wisdom against which it maps outer experiences of the world in a uniquely personal way. The generic constituents and organisational dynamics of the inner domain of the self unfold as conceptual maps of patterns and possibilities based on the principles proposed in the system of ideas.

**Generic constituents**: The composition of the inner domain represents the internal integrative matrix of the self. It reflects the generic disposition of the world creation as different ways of knowing. They are based on the quadrant positions of the generic qualities within a field-like sphere (Figure 8.8) or by

¹ Such as Bloom’s Taxonomy (Anderson & Krathwohl 2001, Bloom 1984).
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tracing a flow-like spiral between them (Figure 8.9), from which a central sense of knowing emerges to enable a balance and continuity between the higher and lower self. The generic aspects of the inner domain embody patterns of qualities described by intuitive-knowing, thinking-knowing, feeling-knowing and sensing-knowing as sketched in the table below (Table 8.1).

<table>
<thead>
<tr>
<th>Intuition-knowing</th>
<th>Thinking-knowing</th>
<th>Feeling-knowing</th>
<th>Sensing-knowing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intuition-knowing favours holistic, intuitive, synthesising and integrative qualities of knowing. It draws on imaginative, idealistic characteristics of a conceptual or symbolic nature and visualises or invents creative explorations. It thrives on generating new and innovative ideas or by tuning in to mythical archetypes.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thinking-knowing excels at logical, analytic and fact-based thinking that is quantitative. It aims for precision and accuracy that offers rational structuring of a conceptual and scientific nature. Critical theories based on certainty and reliability are built here, devoid of personal influence. It functions well in gathering and ordering information.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feeling-knowing responds to emotional, interpersonal and feeling-based expressions. It identifies well with intuitive and sensory involvement that is people-oriented and highly personal. It partakes of mythological rituals or practical qualities that are humanitarian, value-based, and likes sharing and co-operation.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Sensing-knowing prefers planning and organising detailed sequences of events. It seeks activities bound to the senses in real time and space, which can be logically and chronologically paced. As such it prefers conserving tried and tested procedures that are of a practical nature. It likes to check data and keep to the security of existing rules.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

These qualities of the inner self, as expressed through the ways of knowing, elicit different yet complementary organisational dynamic patterns between themselves and between the field-like and flow-like disposition of the world creation.

Field-like disposition. The field-like disposition of the inner domain (Figure 8.8) places emphasis on a balance of the respective qualities within the whole by means of the compensatory relations between them in the quadrant divisions and directions. The configuration of qualities sketched in the table above is merely a guideline, having been drawn from various sources and generalised to accommodate the map of the self. They include qualities from Plato’s four states of mind in The Republic (Cornford 1945), whole brain quadrant models (Herrmann 1995), multiple intelligence theories (Gardener 1993) and thinking styles that indicate preferred ways of using one’s abilities (Stemberg 1997). Also included are logical-mythological worldviews (Chetwynd 1998), functions of the psyche (Jung 1971) and other models influenced by Jung such as Mitroff and Killmann’s typology of scientific inquiry (Mitroff & Killmann 1978), each of which within themselves need further exploring. The layout honours the universality of the four directions. The quadrants can also be loosely aligned with the intelligence quotients familiar to many, in which logical and sequential signals follow serial neural connections, and the emotional intelligence, which conjures up bundles of associative neural networks that form the basis of our feelings and pattern recognition abilities (Goleman 1996). It also includes an
intelligence currently being researched, namely spiritual intelligence, which shows synchronous neural oscillations as a holistic centre integrating the intelligences and which is associated with wisdom, meaning and the creation of spiritual values (Zohar & Marshall 2000). A further intelligence would complete the quadrant cycle in the map of the self, named here body intelligence, which refers to the physiology as a living intelligence in its own right (Wallace 1993) as distinct from mental dexterity associated with physical performance in multiple intelligence theory (Gardner 1993). This includes studies that infuse the physiology with its own intelligence such as the startling accuracy with which ancient Vedic mythic images have been aligned with modern-day anatomical maps of the neurophysiology (Nader 1995). The body is considered to have its own intelligence or consciousness as presented in theories of quantum healing in which the physiology is portrayed as having a mind of its own: "[t]he material body is a river of atoms, the mind is a river of thought, and what holds them together is a river of intelligence" (Chopra 1989:110). This is an important distinction in the systemic concept of mind as interpreted in the inner domain of the self, one in which matter, energy and information are seen to be interchangeable (Járos & Cloete 1987).

While the above models and theories, which each have their own dynamic principles and application contexts, are synthesised in this study, they have not readily been associated with one another before or integrated across disciplines. For example, even though they bear similarities, there is no reference to Jung's typology, which belongs to the field of psychology, in Herrmann's quadrant whole brain model. Herrmann derived his ideas from former physiologic accounts of the triune brain (MacLean 1985). Nor are there any references to earlier philosophic theories, such as Plato's delineation of the four states of mind, in any of them, albeit not explicitly presented in quadrant form.4

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4 Jung does give a comprehensive account of the dialogues between the rational and intuitive mind and its various guises in the expressions of the great poets and philosophical minds of the West as well as accounts from the East, i.e. India and China, that influenced the development of his typology (Jung 1971).
Flow-like disposition. The flow-like disposition of the inner domain (Figure 8.9) presents the direction of flow between the actual phenomenal and ideal absolute worlds in the pursuit of higher knowing. It regulates information across the lower and higher continuity of the mind by creating a linking continuum of the different qualities from their outer to inner passage and vice versa. It was inspired by revisiting Plato's positioning of the four states of mind as a continuum from lower to higher knowledge in *The Republic* (Cornford 1945). This metaphoric image, translated to the inner domain of the self, mimics the actual physiological management of information as a two-way process consisting of incoming sensory stimuli to the brain, and outgoing motor stimuli from the brain to the body expressed into the outer world. In this perception (Berger 2002), the journey along the central nervous system begins with the reticular activating system in the lower brain stem of the hindbrain where perception is initiated. Thereafter, it passes through the limbic system or midbrain which determines a sense of safety conducive to the systems wellbeing before reaching the neo-cortex or forebrain where higher learning takes place. Physiologic adaptation is thus a prerequisite for this order of flow and involves the integration of the sensory systems before higher cognitive functions can be attained. These include the vestibular system, which regulates movement and response to gravity, the proprioceptive system, which assesses orientation and flexibility of response as well as the tactile, visual and auditory systems. Only once these systems function co-operatively and efficiently at their respective levels, do the gatekeepers permit the release and transmission of information to higher levels of mental processing i.e. from the physiologic to the emotional levels and then to cognitive engagement and eventually coherent spiritual fulfilment. Setting the body and emotions at ease by stimulation through movement towards participation in the process of knowing is vital for attaining higher mental states (Berger 2002). It emphasises the need for continuity between, and equal access to, all modes of knowing as an expression of the integrative mind.

![Figure 8.9 Flow-like disposition of the inner domain of the self](image-url)
Within the map of the self the process of knowing remains in a relative dynamic state along this continuum. The more awareness and differentiation of the qualities on the actual physical realm of stimulation, and their conscious re-integration with the conceptual ideal realm, the higher the spiral of knowing attained. This distinction is an important consideration of the self in the system of ideas. It means that maximum diversified activity in physical life occurs during the waking sense-filled state, and it is believed that information gained during waking hours continues its reorganisation during sleep where integration and higher states of unification take place (Berger 2002). This is evident in the different brainwave states that characterise patterns of mental activity along the sleep and waking continuity according to resonant fields of electrical frequencies. They are graded in bands according to cycles per second (Hz). The state of beta at 13–30 Hz is experienced during active mind states. The state of alpha at 8–13 Hz is more relaxed yet alert. The state of theta at 4–8 Hz engenders dreamy states associated with free flow of ideas and images. The state of delta at 0.5–4 Hz is experienced during deep sleep (Herrmann 1995). Brain activity thus increases in frequency during active waking and thinking states, grounding it within the physical realm, which in the metaphoric map of the self decreases in frequency towards the lower and denser ideal world. Curiously the synchronised gamma frequencies experienced during heightened states of awareness induced by meditation occur above 40Hz (Lutz et al. 2004). This subtle shift in perception of the higher and lower image accounts for the continuous interaction between the inward and outward directed world and its corresponding continuity within the unity and diversity metaphor. There is a constant interweaving in the process of differentiating and integrating, "the inner viewpoint imposes its patterns and prejudices on the outside world" which is "solid and intractable" and a projection occurs onto the reflected and relative world of time and space (Chetwynd 1998: 120-121). By drawing the experiences inward, identification with the inner self occurs and a reassembling of the parts around a new nucleus or centre in the psyche leads to higher states of self-knowledge. It is often assumed in education circles that learning progresses from the unknown to the known. In the map of the self however, learning is a recursive and iterative process between the known and unknown. By different ways of knowing, a continuous and consistent state of balance can be achieved towards higher states of awareness within self.

Organisational dynamics. The organisational dynamics of the inner domain of the self rests on patterns formed by the respective natures of the qualities and the relationships between them as revealed by the complementary field and flow perspective. The field-like perception assures a balance between the divisions of the mind by monitoring their relationship in dynamically complementary pairs. This is based on a compensatory relationship in the distribution of energy between the quadrant functions (Jung 1971). As a self-consistent system of complementary relationships, the qualities relate by means of an interlocking proportion that corresponds with degrees of substantiality when crossing the divide between spirit and matter in the Pythagorean-Platonic equation (Henninger 1977; Cornford 1937). Here the archetypal elements relate in the following way: the ratio fire to air equals air to water, as air to water equals water to earth, and therefore fire (intuitive-knowing) to air (thinking-knowing)
equals air to water, equals water (feeling-knowing) to earth (sensing-knowing). Metaphorically, what this implies, is that the extremes cannot be related by a single mean, so that a proportional progression is needed to relate the whole and to provide a linking continuum between them (Lawlor 1982). This results in layers of qualities when taking into account the gradations of frequency between them in the flow-like perception, in which the qualities are equal in terms of a balanced harmonious whole but proportionately so. They have also been termed unequal on account of this, resulting in the perpetual transmutations amongst them, as Jung described in the innate qualities of the psyche: “owing to his position between the four world-principles, man contains within himself a replica of the world in which the unequal elements are united” (Jung 1966:150). It is worth noting that physiologically “no direct connection exists in the brain to link the cerebral left with the limbic right or the cerebral right with the limbic left”, and that mentally, “all interaction between these two modes must pass through another quadrant or brain structure first” (Herrmann 1995:88).

In the organisational matrix of the inner domain this dynamic requires that each axis subsumes adjacent quadrants. Although variations have existed in the diagrammatic layout of quadrant positions through the ages (Henninger 1977), the map of the self retains a consistency with the co-contributing quadrant models mentioned above. Usually a dominant or main quality prevails, drawing energy from the less active quality which resides diametrically opposite. Adjacent auxiliary qualities are drawn in to provide support to connect the flow between them in the linking continuum. This arrangement differs from person to person or for different situations and may change over the course of time. The compensatory relationship between them results in the dominant qualities claiming more conscious energy. That is, it shows a higher degree of natural resonance, equivalence or tuning capacity by submerging the other functions in the shadow realms that have a greater degree of entropy or resistance, and more difficult to access (Herrmann 1995; Jung 1971). Attaining mastery over the modes in a dynamically balanced way emerges as a central sense of the inner self which remains in continual dialogue between the higher and lower worlds. These dynamics are explored below in the context of learning modalities and methods.

8.2.3 A guide for mediating ways of knowing

In the mediator maps, the inner domain of the self upholds the pursuit of higher knowing in which the mind, by contemplating the greatness of the universe, is also rendered great and capable of union with the highest good (Russell 1912). Plato describes this journey as rising through four states of mind, from the unenlightened mind which takes the world of appearances and beliefs at face value, to the intelligible reality of thinking, and finally direct intuition or apprehension of the highest knowledge. In today’s scientific reality, this order has been reversed to favour the world of appearances as the higher
quest. There is a division and proportional ranking in terms of the clarity and certainty assigned between them, "corresponding to degrees of reality and truth" (Cornford 1945:221–226). While this remains the highest ideal when traversing the inner landscape of the mind in the map of the self, it can only be attained through the diligent dynamics of organisation in the balance between the qualities which elicits a sense of wholeness, and by their passage through the connectedness of the dual pathway which brings about a sense of continuity. This arrangement forms a continuous complementary relationship between the known and unknown and unfolds differently in each unique learning context.

**Learning modalities.** The complementary relationship between the known and unknown is governed by a balance between the different ways of knowing. The generic qualities expressed above provide the basis for various degrees of learning modalities derived from their interactive patterns of dynamics within the continuous whole. Placing them as a continuity of experience "provides the key to resolving the apparent opposition of rational and creative processes in thinking" and which shows that they "are naturally and intrinsically connected forms of experience" (Holder 1995:12). The qualities are inherently embedded in multiple dimensions of complex learning dynamics that need to be extracted by the learning experience. They include, for example, active and reflective, global and local, simple and complex, concrete and abstract modes of knowing (Herrmann 1995) that address different degrees of attention i.e. differentiated understanding, or awareness i.e. an overall sense of meaning (Peat 1987). A distinction is also drawn between abilities, such as found in multiple intelligences theories (Gardener 1993) and preferred ways of using them, such as styles and preferences (Sternberg 1997). Whatever the means applied, a complex matrix of learning modalities emerges: "there is a pattern of emergence from the background to the foreground along a continuum of increasing structural complexity" from where "possibilities and connections are recognized" (Holder 1995:14).

These different ways of knowing allow one to discover latent connections in the general web or pattern of experience in order to make a meaningful whole that provides coherence in our understanding of the world. For this to occur, all modes are required to participate: "[t]he fact that even the rational aspects of thinking depend on imagination demonstrates that thinking cannot be properly understood in terms of the purportedly context-free principles of formal logic" (Holder 1995:18). It represents the mind's capacity for complementary rhythms and compensatory expenditure of energy to symbolize physical reality and conversely, to translate symbols from conceptual reality and to articulate them concretely for creative participation in life. The ability to connect across disparate domains is enhanced by metaphors, affective, intuitive, creative imagination and physical experience, all of which provide the basis for higher mental concepts but which have remained merely as supportive modes of learning subordinated to the more customary rational thinking functions in education. The map of the self promotes equal access to all modes and strengthens interaction between
them with emphasis on patterns of relating. Encounters on the mental journey are “the living experience of the archetypal features of the psyche, which appear in the images and forms provided for them by the creative imagination”. Here “symbolism assumes that the nature and structure of the psyche and the forces at work there are of the same nature and structure as the forces at work in the cosmos”. This implies that on the inner level of the self “these journeys don’t consist of a fantasy voyage around the inside of the head, but the actual living surge of man’s experience of life, expressed as accurately as possible in the terms available” (Chetwynd 1998:228).

Creativity and experientially embodied learning. As seen from the above, creative thinking is often juxtaposed with rational thinking and it is necessary to dispel some of the misperceptions held about the concept of creativity in the context of education. In the West a wide interpretation prevails. Initially creativity was seen to be bestowed on a culture by the gods and muses. Later it became the reserved territory of those with exceptional ability in the arts, emerging eventually as the cherished goal of education, learning and life in general (Craft et al. 2001; Cropley 2001). While dramatic creative breakthroughs are usually associated with individual endeavour in Western systems, creativity in Africa is the domain of all as part of a shared effort and contribution in a collective community spirit (Nzewi 2003, 1991; Chernoff 1979). In the learning context, as stated in the national curriculum (RSA 2002), critical and creative thinking are often aligned with creative problem solving, and indeed, “[the medium through which much creativity takes place is creative problem-solving” (Henry 1992:188). In the inner domain of the self however, creativity is collectively represented by the mutual relationship between expansive and convergent features of the inner domain of the self. Expansive processes involve idea generation, exploration and the use of imagination with a sense of suspended judgement. Convergent processes involve action planning, implementation and critical evaluation. Brilliant ideas or theories that remain ungrounded in practicality may never manifest, and likewise, task-oriented efficiency without a sense of adventure and imagination becomes monotonous. The creative learning process thus involves communication across the different modes of knowing: “creativity in its fullest sense involves both generating an idea and manifesting it” (Herrmann 1995:186). Emerging theories link arts experience with embodied knowing (Bresler 2004a; Dewey 1958, 1938).

Parallels have been drawn between phases of creative problem solving and learning cycles (Kolb 1984) in experiential learning modalities (Henry 1992), as well as Wallas’s four stages of the creative process (Wallas 1926) with Herrmann’s quadrant perceptions of the mind (Herrmann 1995). The latter involves: preparation i.e. gathering information; incubation i.e. contemplation and reflection; illumination i.e. reaching an insight; and verification i.e. realising the intent. Higher degrees of creativity have been associated with a zigzagging between these different modes of knowing, involving the whole brain (Herrmann 1995). Creativity enhancing mind systems have become
incorporated into education approaches that link learning across different domains (Buzan 1995; De Bono 1992, 1990; Ostrander & Schroeder 1988; Rose & Nicholl 1977). Generally, creativity is “to associate ideas from one field with those of another through lateral or analogical thinking” (Henry 1992:189) and constantly fluctuating between planned and emergent learning (Beard & Wilson 2002). The mythological and metaphoric mind is indispensable in the creative process (Egan 2005, 1992): “only the more fluidly structured imagination can account for the connection and transference of meaning across disparate domains of meaning that are the hallmark of creative processes” (Holder 1995:20). They capture transcendent qualities and can be used “to help people to see or understand that which otherwise would remain misunderstood, unobserved or in the subconscious” (Beard & Wilson 2002: 155). Whereas the Western mind has tended to bifurcate rational and imaginative functions in a quest for dominance of reason and logic over myth and imagination, mythological functions with their richness in images that convey meaning through stories and narrative animations are ubiquitous in indigenous cultures (Egan 2005, 1992), such as in the African musical arts culture (Ng’andu & Herbst 2004; Scheub 1975). If one takes the view that “we are all creative and it is largely the presence of barriers of mind that inhibits our creative efforts, creativity training should focus more on removing affective and perceptual barriers than inputting conceptual competencies” (Henry 1992:191). By teaching transferability of creativity skills, learners become more open to alternative perspectives and value the contribution of other learners and other cultures. It becomes more apparent how different worldviews and learning approaches respond differently to certain creativity approaches and reveals the necessity for working co-operatively in shared experiential environments that emphasises development of the whole person (Donald et al. 1997). The entire creativity cycle needs to be activated for maximum integration of knowledge. How that is achieved, depends on the creative initiative of educators and their learners within their respective learning contexts.

Although “[t]here is usually no unifying model or metaphor that integrates the various styles, not only between theories, but even within theories” (Sternberg 1997:149), the inner domain of the self does not pose as a comprehensive theory of knowing, merely as a means of conceptual organisation. In this respect, the metaphoric maps prefer to serve as a guide and constant navigating companion towards the holistic and universal ideal state of integrated ways of knowing rather than a diagnostic tool for personal preferences which has a tendency to become fixed in the mind of the practitioner. It provides an opportunity for opening the mind to different ways of viewing and understanding. Although broad as a guiding map, it has the ability to focus with great depth into specific contexts of inquiry. Once key principles are understood, it may unleash insights into further creative possibilities, allowing practitioners to gradually acquire more personalised knowledge and experience of the guiding framework. It provides flexibility rather than conformity to rigid pre-described conceptual categories and one in which learning emerges from co-ordinate proportions between the modes of knowing that exhibit a balanced whole and continuity (Cornford 1945). Educators are encouraged to augment their own ongoing learning experience by seeking out additional learning theories and support systems to
enrich their own practice appropriate for their particular learning contexts. Although it is inevitable that one would be drawn to some qualities over others, the mediator maps encourages flexibility in their interactions by constantly seeking new systemic relationships that continuously dialogue between the known and the unknown in pursuit of higher learning. How this is contextualised and personalised according to varied educational criteria remains the creative prerogative of the practitioner. This will be demonstrated in the illustrative case study which follows.

8.2.4 Contextual relevance: illustrative case study of the inner self

Description. This illustrative example demonstrates the creative learning cycle that emerged during a classroom project, The Wela Project (Muller & Cowan 2000; Muller et al. 1999) as part of a wider Cognition in Education Project for the curriculum services division of the Western Cape Education Department (Green et al. 2000) previously discussed. It is viewed here from within the inner domain of the map of the self. The event around which it took place was a fierce tornado which had devastated many houses during the Cape winter in 1999 including the Gugulethu townships where the project was situated. Just prior to this, the project team had workshoped the use of arts and culture activities with teachers to enliven learning experiences across the curriculum and to invite integrated modes of knowing. The representing teacher of the Gugulethu school approached her grade three Xhosa-speaking learners to draw a life experience by telling their story. Amidst the event most of them relayed the story of the tornado which had affected their homes. When asked to describe their drawings, different versions of an age-old myth in the Xhosa culture came to the fore. In this story a thirsty dragon, which had been awoken from deep sleep at the foot of Cape Town's Table Mountain, mistook the wet rooftops for a lake from which it could drink and which caused the angry winds that followed. With project interventions, a series of unexpected and inter-related lesson activities unfolded from this story and was always connected back to the curriculum by the teacher and to different learning modes by the project presenters.

Initially, the teacher had mentioned that no arts teaching occurred at the school, although they had occasional extra-curricular cultural activities. We had noticed that the class had been divided in two rows, one for quick and one for slow learners, by a central less frequently used carpet patch. In our presence questions were directed to the quick learners to impress the visitors we were told, while the others remained inactive. The teacher was disillusioned by the fact that she merely had one textbook, a publisher's sample copy, from which to work. When we began to enliven the myth in the classroom, a host of learning opportunities emerged and a mental shift occurred. It had become apparent that learners from the rural areas were all seated with the slow group. Once the central space was opened up for interaction, it unexpectedly enabled these learners who were formerly inhibited by their peers,

The context and participation demographics of this project were discussed in chapter three of the fieldwork journey.
to animate their participation with a great deal of knowledge and feeling. It appeared that issues around Xhosa dialects had accounted for the perception of slowness. The teacher admitted that she did not initially grasp the full implications for shifting to non-verbal modes of expression but it was only on reflection at a much deeper level that we realised the significance of what had occurred. Translated into storytelling and enactment with music, singing, dance and drama to recreate the dragon experience, parents from the community appeared in the classroom to relate the event to traditional practices, songs and rituals. Subsequent lessons evolved over some weeks that included a mathematics lesson triggered by the sizes of numbered three-legged pot used for traditional open fire meals which had been an imaginary centrepiece around which the learners and parents had danced. It was also noted that the thatched rooftops of the traditional round huts in the rural areas would have withstood the tornado. This led to lessons in science and technology around natural building materials and environment studies, history and geography of the communities as well as language and life orientation. All the learning areas defined by the Revised National Curriculum Statement (RSA 2002) had been touched upon. The project ended with a mini-cultural festival at the school including the classroom lesson presentations and other cultural contributions with parents and teachers attending in traditional dress. Apart from inspiring new ideas, enacting inherent knowledge, participatory experience, the merging of formal and informal knowledge in learning outcomes, a host of interacting learning modalities had been achieved with the learners.

Learning modalities. The above illustration demonstrates the creativity, complexity and connectivity evoking emergent possibilities between different ways of knowing that can arise in the inner domain of the self when all receive due attention and opportunity. Creating the learning experiences within the inner matrix of the self relied on relaying personal experiences of life events as well as evoking mythic and imaginative qualities. The arts activities were initially given free reign from where intuitive ideas streamed forth resulting in the recreation of cultural rituals that elicited spontaneous questions about experiences. These were directing into the curriculum by means of continuous translation between the actual and conceptual events until they settled into detailed lesson tasks utilising the logical domain across the curriculum. The original stereotypical class division had reflected divisions that existed in the mind regarding expected uniformity of task performance and outcomes. With intervention, experiences were first given free flow, then differentiated and eventually synthesised into a holistic participatory event that brought out the different learning strengths in the learners and their collective co-operation in the learning process. Passive thinkers became active doers and leaders in other domains, using the more social and emotional modalities to express themselves. Many more learning devices were induced during this extended process that included opportunities for learners to generate further ideas and ways of working where they now showed greater interest and attention. In general the more global and multi-tasking issues with larger groups later became scaled down to singular

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7 The eight learning areas have been listed in the first footnote of chapter four of this study.
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focused curriculum tasks. The series of events, which started with a myth and ended in a cultural festival, covered and transcended the class curriculum, involving the schooling community to provide a basis for connecting learners with learning, with life and with their inner self.

Different ways of knowing can be given greater depth by understanding their basic generic qualities and inherent organisational dynamics. With more awareness and presence of the inner domain and an integrative approach in the mind of the educator, it becomes easier to identify and activate the different qualities and learning processes explicitly with learners. What is emphasised here is that they be given equal attention, i.e. not necessarily in terms of time demands but in terms of their qualitative impact on each other and on the whole of the learning experience. What worked particularly well in this instance was the powerful interface between the mythological and logical mindsets and continual iteration between the conceptual and actual in which the former, rich in the cultural practices of the community had formerly been dismissed in the educational setting. The less frequented learning modalities should not always be subordinated to their dominant counterparts. That is, an emotional or intuitive experience in a learning context need not always be relegated to a rational explanation of what is occurring, but may need to remain as a legitimate contribution to the learning experience in its own right. Reflection and logical thinking styles may naturally occur at a later stage, but if the original modalities are not given free flow, in which unexpected associations and ideas originate, it may deplete the potential richness of experience. The underlying principle is that “this non-evaluative imaginative phase prevents premature closure, where the first possible solution is accepted, when further examination from different perspectives might have produced a different and better alternative” (Henry 1992:189). A systemic shift is then made to relationships, overcoming the tendency to “divide the perceived world into separate objects that we see as firm and permanent, but which are really transient and ever-changing” (Capra 1996:286) and to continually bring forth a world of complex and inter-connected experiences. The teacher commented, “I discovered”, through the integrated ways of knowing, “that it brings out a critical-mindedness and creativity the children were not able to access before – it opened my thinking up in a way that is more intuitive. Once it gets into your system, as a teacher you think twice and evaluate everything before coming to a conclusion” (Gold 2000:40).

Closing. The above section dealt with ways of knowing as a symbolic matrix of learning patterns and possibilities on the inner domain of the self: “[o]nce your mind has integrated all the different centres or spheres of consciousness, it extends towards an awareness of the undivided source of your own individuality”, and “this awareness may bring together disparate centres of consciousness within the psyche” (Chetwynd 1998:235). First however, “[t]he inner world of mind must be clearly distinguished from the outer world of substance (matter) – and then related to it” (Chetwynd 1998:2). Ways of relating to the world are explored below as the outer domain of the map of the self.
8.3 Ways of relating to the world: domain of the outer self

The outer domain of the self represents the external environment in the world creation, namely ways of relating to the world. It identifies with the *musica instrumentalis*, the actual physical manifestation in the music of the spheres metaphor (Chadwick 1990, Boethius [ca 505] 1989). From an educational perspective it involves mediated learning opportunities that ensure conditions for learners that are conducive to the development and enrichment of the whole self. Generally, systems approaches regard the outer environment as being separate from the system under consideration although interacting with it. Likewise, conventional education systems draw a distinction between self and the environment which “presupposes that a delimited ‘self’ is separate from an environmental backdrop, which is what is left over when the ‘self’ is abstracted out. This leads to seeing the environment as the ‘other’ – a separate entity with which the self interacts” (Keeney 1983:110). In the context of this study however, the outer domain is acknowledged as an inseparable extension along the continuum of the self that co-creates the learning experience through “patterns that connect” the environments as a recursive system and ongoing dialectic relationship (Keeney 1983:111). The educator forms part of the external environment of the learner and is referred to here as mediator i.e. between the inner and outer domain of the learner, creating an interactive systems context. Mediating guidelines discussed below prepare the learner for self-mediation addressed in the central domain which follows. Ideally, the mediator creates features in the external environment that assist the learner to match or create reciprocal connections with the inner domain when tuning in and drawing forth a world (Varela et al. 1993) revealing the original definition of education from the Latin *educare*, which means, to bring out (Skeat 1993).

8.3.1 Ways of relating to the world: the mediated learning environment

Education in the map of the self is an outcome of the interaction between the inner process of knowing and the learning activities created in the outer environment which therefore becomes an extension and interactive part of the learner and the learning experience, and not a separately existing setting incidental to the learning process. Within such a dynamic, attention shifts from education being delivered by an outside source in which learners are passive recipients of pre-existing knowledge, to an inter-related way of co-creating the learning experience. It is therefore imperative that the active life of the learner in the external learning environment features activities and methods that are appropriate for a systemic approach to learning, namely those that stimulate connections and relatedness across these environments for the benefit of the whole self. The role of the educator becomes one of mediator between the inner and outer life of the learner and requires a shift to more flexible and compatible modalities of mediating and learning that reflect the whole self and which can be enlivened by experiential and embodied knowing.
The mediator in education. Outer environments of the learner consist of all the factors that constitute the provision of learning opportunities such as the classroom, the teacher, the curriculum, peers, desks, textbooks, media, audio-visual aids, the whole school, the family, the community, the worldwide web, libraries and museums, education policy, funding and the global education fraternity etc. It also includes different methods of relating the learner to the outer environment or the outer environment to the learner. It is therefore required of the mediator not only to foresee that adequate resources and opportunities are available but also to adopt or acquire appropriate methods for guiding the learner in co-creating and drawing forth the learning experience. These should ideally correspond with the different ways of knowing discussed above to ensure that the outer environment is synchronised with the inner environment of the learner. A mediated learning environment in the metaphor map therefore extends the inner matrix of the self into the learning activities where it can align with and respond to a range of reciprocal and diversified experiences and possibilities in which “experience involves ‘embeddedness’ in a situation or context that has structural complexity” (Holder 1995:13).

Learning is thus enhanced when the outer domain connects with a variety and complexity of inner ways of knowing through compatible learning modes and appropriate mediation methods. The outcomes-based education approach of the new South African curriculum emphasises different ways of learning that accommodate different ways of achieving the same outcome: “outcomes encourage the development of flexible, relevant programmes of learning” (RSA 1996a:17). Since individual learners respond differently to the same information according to their abilities (Gardener 1999, 1993) and preferred ways of knowing, the mediated environment requires variety and flexibility across different learning modes and methods. Should educators “rely exclusively or even largely on a single method, they benefit certain students at the expense of others” (Sternberg 1997:119). Thus mediators become co-learners in the process of life-long learning by continually refining and reviewing their own repertoire of methods as guidelines in a process of ongoing self-reference, increased awareness and experience. This should preferably remain flexible and not degenerate into pre-fixed diagnostic or typological pitfalls driven by predetermined expectations. Instead, mediators are required to expand their sense of knowing and understanding in order to co-create learning environments that reflect the complexity of the human experience by moving constantly towards increased states of self-organisation and self-knowing. The need for an array of methods will prevent mediators from unknowingly reinforcing limited teacher-learner styles since it has been shown that “students performed better when they were more like their teachers stylistically, independent of actual level of achievement” (Sternberg 1997:130). By drawing out different ways of knowing and different learning abilities, aptitudes, styles and preferences, mediators remain dynamically flexible in their methods, as appropriate across different learning activities and disciplines. Rather than rigorously pre-plan a particular mode of delivery, they should be encouraged to continuously keep an open mind and a “need to understand styles in the context in which they are expressed” (Sternberg 1997:43).
The mediator guide proposed in the map of the self is not intended to create fixed profiles of learner's modalities and preferences; rather, the generic qualities ascribed to ways of knowing should be encouraged within all individuals, groups and across the whole learning context. The purpose is to understand their dynamics in relation to each other so as to create balanced learning opportunities that reach the whole learner. Since "different learners will respond differentially to different styles of teaching", the mediator needs to vary the learning methods and contexts ideally to a variety of styles (Sternberg 1997:146). Learning modes are not mutually exclusive but are used in conjunction with one another, creating compensatory relationships within the individual and between individuals in the collective learning context. The mediated environment, as a mirror of the inner domain, needs to develop compatibility through the format of lesson presentation. That is, individuals can compensate for modes of learning they do not prefer by collaborating with others, therefore mediators "need to provide children with both individual and group settings so that children can be comfortable some of the time and challenged the rest of the time" (Sternberg 1997:26). Although a general trend in education has been to move towards co-operative learning methods i.e. learners working together in groups, this is not necessarily desirable in all instances or for all tasks since it may appeal more to externally driven learners who enjoy working in company, whereas internally driven learners are likely to prefer working alone. The systemic principle of co-operative sharing (Donald et al. 1997) in the context of learning can be created by dynamic complementary tasks according to the individual mind, group mind or class mind, similar to Dewey's concept of a community of inquiry (Dewey 1938). Ideally the class comprises a composite whole as a collective mind and learners work more fully and creatively when stimulated by other modes in which their uniqueness will in turn enrich the learning for all (Herrmann 1995). The mediator creates an awareness of the use of different modes and develops methods in which complex human processes and learning systems dynamics across these modes lead to discovering patterns of possibilities and not fixed profiles.

8.3.2 Generic composition and organisation of the outer self

In the map of the self the outer domain and its ways of relating to the world are not perceived as being separate from the self. Along with the inner domain, it forms an integral part of the whole human system. The outer life of the self extends as an inter-connected matrix of relationships throughout the world and co-creates that which it draws from in order to derive meaning and understanding. There is a continual transfer between the inner, intrinsic order of knowing and the learning patterns that emerge in the active life of the outer experience. Within the learning context, the generic constituents and organisational dynamics of the outer domain therefore need to reflect those of the inner domain.

Generic constituents. The composition of the outer domain represents the generic disposition of the self as different ways of relating to the world. As with the inner domain, it forms a connected and
integrative matrix within the whole self. Its qualities are arranged to delineate the main quadrants of
the field-like sphere (Figure 8.10) as well as the flow-like spiral along the continuum (Figure 8.11).
From their interaction emerges a conceptualisation of the balance and continuity between the higher
and lower worlds. The generic aspects of the outer domain can be matched to those of the inner by
means of intuitive-mediation, thinking-mediation, feeling-mediation and sensing-mediation. They
reflect the following qualities in the mediated learning experience as sketched in the table below
(Table 8.2):

<table>
<thead>
<tr>
<th>Intuitive-mediation</th>
<th>Thinking-mediation</th>
<th>Feeling-mediation</th>
<th>Sensing-mediation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intuition-mediation</strong></td>
<td><strong>Thinking-mediation</strong></td>
<td><strong>Feeling-mediation</strong></td>
<td><strong>Sensing-mediation</strong></td>
</tr>
<tr>
<td>features informal surroundings</td>
<td>features formal and orderly surroundings devoid of disturbances in which information is clear and available. It should be accessed from well-classified sources that are filed and accurately catalogued. Well-documented articles and scientific studies with factual information are made available as well as dictionaries and reference books or data programmes. Working individually is preferred and using electronic or technological systems such as calculators or computers is favoured over personal resources. Charts and numerical tables may be found on walls.</td>
<td>features unstructured social settings filled with people in an open space that allows free moving about and loose time frames. An environment of participatory action is recommended in which personal expression is encouraged. Group work and shared co-operative tasks are favoured in which different individuals collectively produce or process the desired outcome. The atmosphere should be comfortable, allowing for enthusiastic and animated discussions filled with dynamic colours and mood setting devices such as background music. Noise levels may rise.</td>
<td>features tangible practicality, organised into clear and specific action plans with time limits. Working conditions are conventional and economical, conserving time and energy. Tasks are allocated with precision and localised into concrete details that adhere to existing rules and regulations. Activities invite single-minded attention and require double-checking. Processing is done chronologically and in categories using ordered and easily accessible lists and systems. Outcomes should be predictable and achievable and findings accountable.</td>
</tr>
<tr>
<td>undisturbed by time constraints that allow for ideas to arise on a global scale from dreamy or imaginative states. The environment could be filled with a variety of aesthetic and stimulating sources or colourful displays to inspire and initiate multiple creative activities aided by guided visualisation techniques for example. Leanings towards shaping ideas into concepts or enlivening ideas with metaphors and myths may require in-depth individual attention at times or group synergy during other times in task orientation.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 8.2 Generic qualities of the outer domain of the self

The above mediated learning qualities exhibit different yet complementary organisational dynamics
between the field-like and flow-like tendencies of the outer disposition of the world creation.

*The field disposition* metaphorically extends the qualities of the inner domain into the actual structures
and processes of the external environment to enable a systemic and holistic atmosphere of learning
(Figure 8.10). Thus the quadrant layout is conceptually embedded within the learning environment and
enfolded into the mediating guide. This assists the mediator in visualising and assuring that the outer
environment exhibits matching opportunities appropriate for a balance of the whole mind from which the learner can forge sufficient reciprocal connections for personal benefit (Varela et al. 1993).

Figure 8.10 Field-like disposition of the outer domain of the self

The flow disposition offers a slightly different perspective on the outer environment in terms of maintaining a linking continuity and inter-connectedness between the qualities (Figure 8.11). The mediation guide is arranged from the more inward intuitive settings to those aligned with the external sensing functions and ensures a mutual inward-directed and outward-directed flow through all the qualities in the continuity of the learning experience.

Figure 8.11 Flow-like disposition of the outer domain of the self

The organisational dynamics produced between the different qualities as well as the interaction between the field and flow perception results in a diversified selection of mediating possibilities in the learning environment. Their effect should not be under-estimated or disregarded. One is then constantly reminded that the ideal learning setting is not directed to specific thinking types in isolation.
but continually links and fluctuates in attention between the qualities, which are implicit in every learner. For example, the intuitive workspace would not only benefit those learners in resonance with this disposition but would touch the intuitive aspect within all the other learners in some way or another albeit with some resistance for learners preferring other domains. For those who prefer the diagonally opposite energy disposition, such as the practical and procedural for instance, this setting would be vague and without direction, causing resistance to the learning situation and disconnectedness within the self which may be disclosed as disinterestedness, detachment or disruption in order to release the energies of the qualities not employed. This in turn diminishes resonance and access to the other qualities by affecting the emotional mood, thinking ability and physical co-operation of these learners, which would remain deficiently occupied. The dominant function of these learners may not be able to operate at all in such conditions and this in turn may affect the whole learning environment.

Thus, the opportunities being provided should be equal for all learners, namely in terms of all modes of the learning experience being available in the setting. Thereafter, individual preferences may emerge and directed in different tasks but always with an awareness of the wider range of dispositions available and by continually stretching connections between the extreme modes along the continuum, within self and the whole class. To mediate effectively with an awareness of such a situation requires knowledge of the interactive dynamics and methods so that many possibilities can be offered or co-developed with learners. The mediator would need to take into consideration the simultaneous functioning of different individual dispositions in different learners and across tasks. If considered holistically and inter-connectedly, they can be set up explicitly in a complementary, co-operative and supportive manner in co-design with the learners rather than being left to their own devices.

8.3.3 A guide for mediating ways of relating to the world

Creating an appropriate mediation guide in education practice therefore requires the explicit enlivening of different dispositions in the process of knowing for enrichment of the whole learner. We know that orderly classes are easy to teach, whether the students are learning or not, and those who have questioned the way things are done are usually not viewed as creative, but rather as disruptive (Sternberg 1997). For example, education structures favouring rational modes of learning have become synonymous with linear modes of thinking that often result in passive recipient modes of processing information. In the map of the self this reflects merely one, admittedly essential, component of the learning process which should ideally interface dynamically with other modes to open up the learning possibilities in multiple interactive and creative ways. This requires from educators to draw on their own innate creative resources. One is often faced with an outcry from schools situated in sub-economic areas regarding lack of resources, yet the creative imagination
remains one of the poorest accessed resources. Even schools with meagre means can flourish when activating innovative and creative methods without dependence on additional external materials. Creating rich contexts of learning experiences from which learners can draw from, as well as equipping them with the flexible capacity to make meaningful connections across disparate domains of experience, become the desired ideal.

When constructing experiential learning environments, the basic tenets of a learning cycle are founded on immediate concrete experience which provides the opportunities for observation and reflection to become assimilated and to guide further implications and new experiences (Beard & Wilson 2002; Mulligan & Griffen 1992; Heron 1996, 1989; Kolb 1984; Dewey 1938). An environment of openness that encourages freedom to explore in an atmosphere of trust generates more creativity in the learner than rigidly dominated environs. In learning environments undergoing social and cultural transformation emancipatory approaches are particularly pertinent in showing how human interests influence social construction of knowledge (Criticos 1993a, 1993b; Habermas 1972). Vygotsky highlighted the importance of mediated mental activity as the result of social learning and the function of the external environment in internalisation of complex behaviour rooted in the historic context of a culture and its social relationships (Moll 1990; Vygotsky 1978). Those mediated learning environments developed by Feuerstein, inspired by the work of Vygotsky, address especially culturally deprived individuals and are intended to make the mediation of meaning explicit (Feuerstein et al. 1991; Feuerstein & Feuerstein 1991; Feuerstein et al. 1980). Mediated learning approaches and enrichment methods have served as a cultural rehabilitative function in the South African situation (Skuy 1995; Rautenbach 1984). These socially aware methods however are not specifically designed to mediate between cultures in diverse education contexts, which are emerging through initiatives of co-operative approaches and education support systems (Donald et al. 1997). Nor do they necessarily mediate between different learning modalities in a culturally compatible way.

In the mediator maps correspondences are constantly sought between the internal and external learning environments as a matrix of possibilities, which unfold “differentially good fits to different environments” (Sternberg 1997:136). It is the ability to relate and find patterns of meaning that becomes emphasised. Even here, the different ways in which we perceive and process information influences the way we see relationships, which is regulated within a broad or narrow conceptual “equivalence range” (Sternberg 1997:137). Guided by the basic concepts and organisational dynamics of the maps, these can be bridged and balanced by seeking complementary modes, such as between the critical and creative or, by creating learning pathways that move from the ideal to the actual or vice versa, or by tracing a cycle through the different modes beginning at different positions in the map, and so forth. One can achieve this for example by accommodating the same learning task in different
Mediator-aspect of the meta-frame: a metaphoric guide

Any configuration of individual, group and class tasks can bring this about by assisting learners in accessing and activating higher order mental and creative skills.

A mediator is thus multifunctional rather than specialised, synthesising different modalities into a unified whole by discovering and developing complex and flexible dynamics in the learning environment with the assistance and inspiration of the metaphoric maps, which can therefore never be a personal profile per se but merely a guide across infinite possibilities. It is essential to prevent the possibility of premature or superficial stereotyping, and for the teacher and learner dynamic to constantly be stretched by facing complementing qualities. For example, an intuitively enabled mediator, probed by specific questions from sensing oriented minds can choose to become stimulated by the challenge and acquire more detail skills, rather than habitually deferring or dismissing these qualities in an environment of co-learning and life-long learning. The way the educator chooses to respond to the situation will stretch awareness and subsequent development of mediating methods. For example, stimulation of sensing minds may require orderly work spaces to be set up in advance for quick access to these modes. At other times however, learners may prefer to set them up themselves as a means of exercising their efficiency in these qualities, or for yet others to sharpen their deficiency in these quarters. It becomes difficult to assess whether these modes are dominant in a person or driven by compensatory needs from the dynamically opposite qualities. The inwardly directed feeling-oriented self for instance may choose to work alone within the context of a social setting but may also become responsive in the company of compensatory thinking selves. It is therefore not advisable to diagnose or draw distinctions based on superficial, obvious or incomplete perceptions since some traits are inherent, others learnt or habituated and some individuals more flexible than others. The dynamics are not predictable or standard, and appearances are deceptive. To avoid confusion in the distinction and interface between them, which are complex and require more specialised study, an awareness of other theories and approaches such as abilities (Gardner 1999, 1993), preferences and aptitudes (Sternberg 1997), brain dominance (Herrmann 1995), thinking and learning styles (Kolb 1984), and teaching and learning methods (Fairhurst & Fairhurst 1995) is encouraged. Continuous assessment methods should be cultivated in accordance with different modes and not merely according to specific ability and performance.

8.3.4 Contextual relevance: illustrative case study of the outer self

Description. The following illustrative example is taken from the Percussion-Based Project with educators (Muller 2002), previously discussed. This particular activity explored two distinctly different mediation methods for arriving at the same outcomes with implications for their respective learning and mediation approaches. While music forms the basis of this illustration, its principles

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according to the mediator maps are equally valid for transference to creative activities and approaches across education in general. The example is taken from an activity involving an interlocking six-part pattern devised by the project team, adapted from an original *makondera* horn piece, played on kudu horns by the Cape Town contingent (Kirby 1953). In the workshops we transferred the interlocking melody to a set of individual pentatonic reed flutes crafted from local river reeds, with tin can shakers, home-made rhythm sticks, beach pebbles and a drum accompanied by dance steps with intermittent voice chants. Workshop participants were divided into two mixed culture groups and directed to separate rooms, each with the above set of instruments and a project presenter who had rehearsed a different mediating method during the project planning sessions. The following occurred.

**Mediation modalities.** Group A was mediated in a structured and instructional way in which the learning steps were predetermined and intended to unfold a specific method by a directing mediator at the front of the room, the instruments having been pre-placed and allocated. The activity was introduced with a descriptive verbal exposition of what was expected. Each part was introduced and rehearsed sequentially, stopping intermittently for explanations and corrections. Participants were expected to clap the rhythm of the patterns before substituting instruments, progressively adding layer upon layer until the parts were known and the complex result achieved. Group B was mediated in a free and exploratory way of playing during which the learning methods emerged of their own accord. No lesson agenda was posed at the outset. The instruments were simply handed out randomly, a circle was called into place and the different parts were initiated simultaneously in a non-linear and multidimensional way. Players intuitively felt their way in to their part by means of continuous repetition and by following the mediator's gestures, who was an equal participator in the process, until some coherence emerged and the group pattern settled and came into its own.

After the allocated time, the groups were each asked to play their pattern to the others. Participants gave feedback regarding the different musical and learning responses of their own method as well as observations of the other group's performance. With the playback, Group A appeared accurate, consistent and calculated but seemed to lack the excitement, adventure and spontaneity of the other group. Group B again, had a sense of spirit and excitement but lacked the orderliness and predictability of presentation shown by the former. Even though the outcome from each group sounded roughly the same compositionally, there appeared to be a qualitative difference in sound, approach and in the overall expression in each group. Participants reported that the mediated approach of Group A felt more Western regardless of the African content and that of Group B more African. These reflect issues typical in contemporary attempts to find unique approaches related to musical arts education in South Africa (Addo et al. 2003). Upon critical reflection participants found that they responded to their preferred modes of learning and mediation methods and felt insecure of methods

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9 The tuned *makondera* horns are played in a one-person-per-note interlocking multi-part fashion.
not comfortable for them. This occurred regardless of culture or group. While many of the formerly trained music educators were more familiar with the Western way, they found the second way “more refreshing” if only they could “abandon the sense of control”. Participants with an African background and no former training made their way easily into the Group B method. However, they appreciated the experience of Group A’s methods as a means of “a better understanding of what we’re doing and how to teach the songs we know” (Muller 2002).

According to the mediator maps, the groups had followed two distinct learning organisational routes with regard to the externally mediated activity. They had all been asked to experience the alternative method as well, and thereafter to create their own similar activity and mediation methods based on a merger between the two methods, with an application to their specific classroom needs and grades and to feed this back to the whole workshop group. This became the mediating premise adopted by the percussion-based method in the project. In follow-up workshop settings, graphic depictions of the pattern’s notation were requested and introduced, initially as a method of recall for participants, but essentially served to further illustrate the different learning routes and mediation methods that are brought about by different approaches, such as using notation. After some exploration participants found a comfortable balance between different methods of recall, retention, re-creation and transferability which were attempted in their classrooms and shared back in workshop sessions. Generally, different methods served different situations more suitably such as using numbers, letters, word syllables and graphic scores wherever appropriate. Some were used merely for purposes of recall while others were directly incorporated into the teaching method, now with an awareness of the possibility of re-routing learning styles in so doing, and to use these methods to purposefully elucidate and emphasise specific learning skills for particular curriculum tasks and outcomes.

Closing. This section sketched the external matrix of the mediated learning environment and its interconnectedness with the internal domain of the self showing how inter-related and co-dependent they actually are. The following section elaborates on the central domain as the conscious capacity responsible for relating the inner and outer domains through the awareness of a central sense of self and to explore its implications in the context of self-mediated learner-centred education.

8.4 Ways of being and becoming: domain of the central self

The central domain represents the concept of self emerging from the interaction between the inner and outer domains of the world creation, namely ways of being and becoming. It identifies with the *musica humana*, the harmonious and balanced human being, reflecting the cosmic proportions in the music of the spheres metaphor (Chadwick 1990; Boethius [ca 505] 1989). The figure of Mercury personifies the central self and serves as mediator between the inner state of ideal being and its outer expressions of
becoming in the diversified life matrix. One of the most important contributions in this system of ideas is the sense of self as a central domain distinct from the inner and outer spheres of being whereas other systems of the self speak only of an inner and an outer self: “the whole undivided self is both inside and outside the individual” (Chetwynd 1998:355). In the system of ideas in this study the self forms an interdependent relationship with all aspects of the world creation, emerging on the central level as the unity of the whole, which is “container and organizer of all opposites” (Jung 1969a:157) expressed systemically as a synergy of complementing energies (Járos 2000). The continuous transfer between a state of being and becoming, between the known and unknown, creates a recursive cycle of self-referral and self-knowing (Bateson 1985; Keeney 1983) which is not merely an intellectual understanding but an embodiment of the whole self (Lackoff & Johnson 1999, 1980). This occurs between the lower self as embodiment of the higher self, a transcendent level of being, which reflects the divine principle within (Cunningham 1995). When they are united, a greater purpose and connectivity is revealed in the partnership between a universal and individualised or individuated self (Jung 1971). A unity and diversity consciousness is compatible with perspectives of drawing forth a world in co-creating existence (McTaggart 2003; Wallace 1993; Maturana & Varela 1992) in which learning processes move away from predictable rote responses to organising higher order learning patterns that involve adaptive emergent responses in which “a search for meaning will then generate new structure and pattern” (Keeney 1983:170).

8.4.1 Ways of being and becoming: the self as central mediating system

The self as a system, refers to the available flow of physical and psychological energy present to the individual, these being interchangeable and giving rise to a third force consisting of both (Jung & Pauli 1955). The psyche is believed to have a well-developed system of values that is of great importance in the compensatory relationship that exists between the known and unknown and, in which “the predominance of one or the other point of view depends less upon the objective behaviour of things than upon the psychological attitude of the investigator or thinker” (Jung 1969b:5). As a complex and purposeful system, the psyche has a natural ability to transfer or transform energy (Jung 1968b). The self is expected to emerge out of the process of becoming whole that is, by differentiating and re-integrating or uniting all the opposing inner and outer forces in a complementary and compensatory way. The self can be seen as “the value given to this magical layer of the psyche, and the understanding that it never disappears, but remains the wellspring from which all else flows” (Salman 1997:54). In the system of ideas the creating deity brought about the composition of the world by means of four principles bound together as a whole in the human being (Heninger 1977; Cornford 1937) so that the self contains within itself a replica of the world in which these principles are united. The idea of a transcendent unity of self reflected on the level of the individual has been expressed by philosophers as the unio mystica, the principle of all in one and one in all (Jung 1966).
The systems perception of self as a whole (Járos 2001a; Smuts 1926) or as an underlying unity however, has not as yet been fully recognised within the field of psychology and education (Edwards & Járos 1994; Pastol & Járos 1994). There is still a tendency for these disciplines to remain focussed on the content-oriented nature of the mind and psyche: "psychology has focussed primarily on the 'classical' or active, content-oriented level of the mind; it has not addressed the underlying unity of the 'quantum' or unmanifest, unbounded level of the mind" (Wallace 1993:19). With a process-orientated approach to psychology the contextual interdependence of complex human systems becomes available: the "tendency to emulate science has contributed to the development of a discipline where language and concepts are centred around entities" and in which "[s]ystemic concepts such as levels (while well developed in many other fields) are almost ignored" (Edwards 1996:2). With the introduction of the systems concept of self-organisation in living systems a more purpose-based, holistic and ecological view of the human being as well as inter-disciplinary approaches in psychology emerged (Hill 1993; Koestler 1981; Laszlo 1972a; Von Bertalanffy 1968). The process systems view "holds a person as an 'active personality system' where individual uniqueness and creative potential are valued" and which "encourages a perspective of continuity and connectedness where physiological processes, conscious and unconscious, social, contextual and even spiritual experiences are accepted as part of the human condition" (Edwards 1996:2–3). In the map of the self, the notion of an unconscious (personal and collective) is restated as the possibility of a unified state of consciousness (universal and individual) which fluctuates between the known and unknown on the level of self. It serves to re-unite the fragmentation that has set in as a result of a divide between subjectivity and objectivity: "[b]y separating subjectivity from objectivity, we have disconnected ourselves from ourselves; we have lost the connection between the physiology of consciousness and the physiology of matter" (Wallace 1993:26). Thus from the perspective of a higher and lower self we create a central self: "w[e] experience our own self-interacting dynamics of consciousness, which creates everything from within itself" (Wallace 1996:26). The effects of attaining higher levels of consciousness such as through the practice of meditation (Lutz et al. 2004; Ricard & Thuan 2001; Zohar & Marshall 2000; Wallace 1993), show that such transcendental states of unity may indeed be entered into and that they impact on the concept of self: "studies show increased self-actualisation, enhanced self-concept and self-esteem, and enhanced self or ego development" (Wallace 1993:42).

8.4.2 Generic composition and organisation of the central self

The central domain with its ways of being and becoming extends the pattern of self across the inner and outer domains and is not perceived as being separate from them. They form an integral part of the whole human system, giving rise to the central state as an emergent outcome of the interface between a transcendent self (ideal state of being) and embodied self (actual state of becoming). The generic constituents and organisational dynamics of the central domain are reflected in those of the other
domains in order that they may form mediating links for the benefit of continuity across environments. These patterns and connections exist on the level of abstracted metaphoric mappings of the self (Valle & Von Eckartsberg 1989; Ortony 1993).

Generic constituents. The composition of the central domain represents the generic disposition of the world creation that remains in continual contextual connectedness and co-creation with the inner ways of knowing and outer ways of relating to the world as mediated from within the dual and complementary perspective of the system of ideas namely, from both a field-like (Figure 8.12) and flow-like (Figure 8.13) perception and their respective and collective organisational dynamics. The generic constituents of the self reflect inherent qualities and attitudes to life as mediated through the intuitive-being, thinking-being, feeling-being and sensing-being that emerge as the spiritual, mental, emotional and physical aspects of self as sketched in the table below (Table 8.3).

<table>
<thead>
<tr>
<th>The intuitive-being</th>
<th>The thinking-being</th>
<th>The feeling-being</th>
<th>The sensing-being</th>
</tr>
</thead>
<tbody>
<tr>
<td>The intuitive-being mediates the outer world through an inner perception held in terms of inherent potential. It tells us the possibilities for something to arise out of it in future.</td>
<td>The thinking-being mediates by apprehending and adjusting the outer world through cognition and logical inferences when making meaning. It tells us what something is.</td>
<td>The feeling-being mediates by adjusting the outer world through a subjective valuation in its inner relation to it. It tells us what the worth of something is.</td>
<td>The sensing-being mediates by perceiving things as they really are, through the senses. It tells us that something exists and seeks to establish empirical evidence for it.</td>
</tr>
</tbody>
</table>

Table 8.3 Generic qualities of the central domain of the self

The central mediating disposition of the self brings forth complementary organisational dynamics between the field-like and flow-like nature of the world creation.

The field-like disposition of the system of self addresses the way we use the whole amount of energy available to us in our different orientations to the world (Figure 8.12). Similar systems of representation are to be found in the four temperaments of the ancient Greeks, aligned with the four elements (Heninger 1977), later developed by Rudolf Steiner in Waldorf education (Stockmeyer 1982), as well as the four bodily humours of the medieval medi ci and the human microcosm (Heninger 1977) and the four functions of the psyche as interpreted in Jung’s theory of the self (Jung 1971). Having inherited the mythological attributes of Mercury, the mandala sphere forms the world-encircling band of the Greek alchemical ouroboros (Chetwynd 1998; Jung 1968b, 1967a) an emblem for the sphere kept afloat by equal and opposite forces: “it is the symbol of the union of opposites” (Jung 1970:502). The field-like perception provides a means of becoming aware of the balance and harmony of complementing synergetic tendencies as a whole functioning entity, the self (Járos 2000).
The flow-like disposition places the qualities of being along a continuum (Figure 8.13) that ranges from the higher and more inward situated intuitive self closest to the point of unity to the lower and more outward situated sensing self on the band of diversity. This arrangement has been inspired by Plato’s positioning of four states of mind which accumulates in intuitive knowing, the highest moral order of the human being (Cornford 1945). This perspective provides a means of becoming aware of creating a connection and continuity between the inward and outward directed flow of energy emerging on the level of the self. The image of a spiral monochord identifies Mercury’s complementing feature, namely that of a process in flux. In “the balance of opposing forces throughout the universe” it resembles “the movement in the dance of life, separating and joining” which has led to the association of Mercury with the emblem of the caduceus, residing over the healing arts (Chetwynd 1998; Jung 1968b, 1967a). Here the two intertwined serpents of the ever-changing phenomenal world are uniting and diversifying in a process of integration and dissolution around the unchanging world axis and “by their intertwining they create the different spheres or worlds” i.e. “the different levels of existence” (Chetwynd 1998:67–68) within the self.
Organisational dynamics. Each of these dual dispositions invites a subtle difference in perspective that gives on the one hand, a holistic and balanced impression of complementing synergies, as well as tracing a link between levels of the physical and ideal worlds. They are complementary versions of the same system, each emphasising qualities the other exhibits implicitly. The different perceptions however, impact on the way the system of the self is described and how their organisational tendencies appear in relation to the constituent parts and processes, and to the whole. Systemically, by distinguishing between them, properties emerge in their relation to each other that would not have been evident in either version on its own (Dostal et al. 2004; Cloete 1999) and which brings forward the self-organising dynamics of a multi-layered and multidimensional image of the self.

The relationship and organisation between the qualities of self ideally seek the rounding out of the personality as a whole (Jung 1969a) i.e. they aspire towards becoming a balanced system with equal access to all orientations (Jung 1969b:67–91). Mercury’s main function metaphorically, is to mediate and harmonise the transfer of energy between the intrinsic component qualities of the self. According to Jung, the attributes of Mercury can be aligned with the four functions as “quantitative estimates of energy” whose relative strengths are determined by a compensatory relationship between the conscious and unconscious (Jung 1969b:3–66). It mirrors Plato’s concept of the distribution of the whole amount of energy in the world creation through the archetypal elements held in relation to each other (Henninger 1977; Cornford 1937). They are expected to contribute equally for a more complete orientation and comprehensive understanding of self in context to the world so that we can access and utilise the appropriate functions whenever required. In practice however, they are not uniformly developed, some being more dominant in their predisposition and conscious availability than others: “[t]heoretically this is conceivable; but in practice only an approximation is possible” (Jacobi 1968:16). The contesting for energy that ensues creates dynamic movement in the psyche which determines the nature of their inter-related patterns (Jung 1971). In the field perspective, we see how dominant qualities claim more conscious energy when directing the self, depriving its diametrically opposite counterpart, which remains less active. Based on the compensatory agreement of available balance of energy across the functions, adjacent qualities assume auxiliary supportive roles to connect the less frequently used quality into conscious life. When shifting the emphasis to the flow-like perspective in terms of its two-directional continuity through the functions, it shows where energy is being expended or inhibited in the dialogue between the inward directed flow towards expansion and the abstract, or outward directed flow towards contraction and concrete manifestation. From these complementary perspectives of the self emerge the self-regulatory and self-referral dynamics of the central sense of self across the domains of being.

In terms of inward and outward flow, the “direction of their interest” (Jung 1971:330) is for Jung a predominance of either an extravert attitude, where greater value is placed on the outer world, or an
introvert attitude, where greater value is placed on the inner world: “everyone possesses both mechanisms, extraversion and introversion, and only the relative predominance of one or the other determines the type” (Jung 1971:4). A reciprocal relation exists between them, e.g. when the primary conscious quality is outward directed the complementing attitude of the “inner life is subordinated to external necessity” (Jung 1971:334). In the distribution of life energy we give higher value to some functions over others, each claiming the undeniable certainty of their reality: “[i]f one of these functions habitually predominates, a corresponding type results” (Jung 1971:6) and “we naturally tend to understand everything in terms of our own type” (Jung 1971:3). While a typology was created in the context of psychology, the map of the self in this system of ideas is not intended for measurement or diagnosis but merely as a means of opening the mind to the possibilities and patterns of the self in pursuit of expanded conscious awareness. It helps us to recognise the orientation and attitude of our natural dispositions which feature through their stability, consistency and adeptness while the deficiently functioning qualities and attitudes appear unreliable and vague (Jung 1971). Adjacent qualities can be tempered to harmonise the flow between all qualities in order to unfold the central self into full consciousness.

In the map of the self, orientation towards the outer domain or physical realm is termed the lower self, i.e. the aspect of self in its dynamics of interchange with the relative outer world and which can be equated with the ego (Jung 1969b). The ego is like a mirror (Jacobi 1968) in which the self becomes aware of itself: “the degree to which a psychic content is taken up and reflected by the ego is the degree to which it can be said to belong to the realm of consciousness” (Stein 1998:15). The lower self mobilises the energy of the psyche and gives it direction and reflection in its adaptation to the outer world. Jung further determined the ego by the persona, a mask or cloak around the ego which is the adaptive regulatory character adopted in defining how we appear to be or wish to be viewed in the world (Jung 1969b; Jacobi 1968). Certain complexes may constellate, arising “from the clash between a requirement of adaptation and the individual’s constitutional inability to meet the challenge” (Jung 1933:80). The psyche then draws from mythological images or archetypal symbols that reside in the invisible universe, a collective history of humanity across cultures, which provides a vast internal store of ancestral knowledge about the profound relations between the creator, human beings and the cosmos (Jung 1969a). Aspects of self may have been rejected because they do not form part of our conscious image and then become repressed by lapsing into the realms of the shadow aspects of the psyche, often projected onto others and thereby creating states of relative tension. Once we become aware of this shadow side of the self, the soul-image, animus or anima, becomes visible as adaptations of our impersonal life forces in the deeper interior world. They are in direct relation to the mediating function of the persona to the outer world. Once recognised and revealed, they may re-enter the conscious world to encounter the life principles that they embody (Jung 1969b).
The self as a dynamically organised whole is thus a self-regulating system based on the compensatory relationship similar to the physics principle of symmetry and complementarity around its own centre (Cloete 1999): "these relations are regulated – the living tension between them is maintained – by the movements and transfers of psychic energy" (Jacobi 1968:54). There is an increase or decrease in direct proportion to available conscious energy. When energy is lost in consciousness, or as Freud terms it censored (Freud 1962), it activates compensatory contents within the psyche associated with the unconscious or the unknown. Energy in the psyche with its shifting thresholds of consciousness is thus complex, has unlimited changeability and remains in a constant state of flux and transference from one expression to another in which the meaning, or value intensity, is determined by their relative contexts (Jung 1969a, 1969b). Systemically, governance of the two-way interaction is either intended (from the known) or emergent (from the unknown) in its direction of energy flow (Cloete 1999). When in continuous and unobstructed response to life's demands (Jung 1969b), it can be termed progressive (the principle of equivalence) i.e. in resonance. However, when adaptation is not accomplished, it results in an accumulation of repressed energy (principle of entropy), termed regression (Jung 1969b) i.e. resistance. Awareness of the dynamic movement can add constructive value to the self, and when brought to light can bring a renewed sense of harmony to the individual to create systemically speaking, new states of organisational closure (Maturana & Varela 1992). The journey towards the liberation of self, referred to as the process of individuation, continually differentiates and re-integrates the aspects of self into a greater whole (Jung 1969a) as a holistic self-referential system: "the self-regulation of the living organism requires by its very nature the harmonising of the whole human being" (Jung 1971:299).

8.4.3 A guide for mediating ways of being and becoming

It is the position in this thesis that opportunities to discover and unfold the multi-layered and multidimensional self have not had much encouragement in our Western systems of learning that continue to place a one-sided emphasis on scientific empirical forms of knowing and the methods that accompany them: "contemporary scientific attitude is exclusively concretistic and empirical, it has no appreciation of the value of ideas, for facts rank higher than knowledge of the primordial forms in which the human mind conceives them" (Jung 1971:307). This is especially true for the new democratic South Africa in its effort to redress the imbalances of the past by economically empowering former disadvantaged communities by placing emphasis on mathematics and science skills in our schools, often to the detriment of the arts and humanities. With the system of ideas in this study it is proposed that the different qualities of self be equally available and accessible when addressed within appropriate education contexts, and that music and the arts have a vital role to play in enlivening the under-utilised modalities, not merely for the sake of specialisation in these subjects, but for expansion of self and general enhancement of learning experiences across the curriculum. The
supporting music metaphors for the re-conceptualisation of the learner-centred self rest on the harmony and proportion of the cosmic world order as reflected within the human system. By embodying them on all levels of the self we begin to educate human beings and not merely subjects of learning. These underlying harmonic laws have been at the basis of various aesthetic disciplines throughout the ages (Doczi 1985; Rommelaere 1983), one of the most prominent examples being Da Vinci’s linking of architectural principles with the human form according to Vitruvius’ perception that “there ought to be the greatest harmony in the symmetrical relations of the different parts to the magnitude of the whole” (White 2001:165). By conceptually extending these metaphors across the inner, outer and central domains of the self and the four qualities of being, the mediator-aspect of the system of ideas makes its most valuable contribution by transferring the universal laws of harmony and proportional relationships to complex human processes by addressing the whole self in the context of learning and education. Mapping the human system into a metaphoric musical world provides a means of enlivening the self-organisational dynamics of learners in a symmetrical and complementary manner around their own centre of self-knowing that suggest far-reaching implications for self-mediated learning experiences and possibilities.

Creating self-mediated learning modalities. Self-mediated learning in the system of ideas encourages an enlivening of the whole self in the learning process (Bruner 2001). As such it requires circumstances that are conducive to forming a healthy concept of self: “[t]he self-concept is composed of all the beliefs and evaluations you have about yourself”. These “beliefs (self-image) and evaluations (self-esteem) actually determine not only who you are, but what you think you are, what you think you can do and what you think you can become” (Burns 1982:1). The self-concept maintains continual balance between a complex inter-related set of “self-attitudes forming a meaningful, integrated system” (Burns 1982:11). In the system of ideas this can be perceived in a dual way, either as a continual process such as William James’ idea of a stream of consciousness as a flow (Dainton 2000; James [1890] 1983), or by a sense of self as a whole, “the global self-concept which is the total of all the possible ways an individual conceives of himself”, as a field (Burns 1982:25). The learning process should encompass a continual dynamic interface between these perspectives in the process of expanding self-awareness and self-exploration. Generally, it is felt that the “internal processors enabling” learning such as thinking, emotion, sensation, intuition, will, memory and imagination, which order and organise the learning process “are often operating well below potential” (Mulligan 1992:178). Experiential learning and other similar educational methods are ideally suited for activating and enhancing these modalities and assisting learners to take responsibility for their own learning processes (Boud & Miller 1996; Boud 1993; Weill & McGill 1993). They create an awareness of self-mediated learning: “[b]ecoming aware of the constructs or frameworks we use to think about ourselves and the world can help us modify those which are ineffective or inhibiting and begin developing ones which may be of greater value to us in adapting to and performing effectively in the world” (Mulligan 1992:181). Therefore, “[e]xperiential learners will need to be aware of the way in which their existing
constructs, ideas or theories can predispose them to perceive events in a certain way” (Mulligan 1992:181). Not only reasoning abilities but also affective and value modalities, intuition and transcendent modes are important in the way they effect our learning (Heron 1996, 1989) as well as sensory perception, particularly important in early development of intelligence (Montessori 1967), when addressing the whole self.

Experiential learning challenges conventional instruction methods by personalising learning that allows for autonomous and co-operative methods to emerge from the initial direction by the teacher (Henry 1993, 1992). There is reference to facilitator and participant rather than teacher and learner, and can serve to increase group effectiveness by empowering learners particularly in cultural community development contexts (Criticos 1993a, 1993 b). Self development is emphasised as well as learning from life and work experience that can be arranged through direct encounters often in adventure-based climates to avert mere memorising of abstract theoretical knowledge. It is based mainly on an active experiential learning cycle of concrete experience, observation and reflection, abstract conceptualisation and generalisation, and active experimentation (Kolb 1984). Reflection-in-action is emphasised as a natural process taking place within the learner, in which that which is being processed affects the learner and in turn provides a basis for further action (Schon 1987, 1983). Direct experience such as in arts education that engages immediacy of sensory experience (Dewey 1958) as well as creativity enhancing methods that employ internalised image-making (Buzan 1984) can serve to refine this process. For a more holistic perspective to learning, intuiting as “a form of direct knowing” is promoted as a perceptual processor especially for the internally hidden, images and hunches, an important ability in experiential learning “as it can help us appreciate the inter-relationships and emerging patterns in what we experience and thus help us to begin making sense of or giving some order to that experience” (Mulligan 1992:184). Considered a generally undervalued processor, one needs to be in a receptive mode rather than that of wilful effort. Imagination can accelerate the learning process since it “is the precursor to creativity and action” helping us envisage and recreate experience: “[i]t helps us transcend current experience of reality” (Mulligan 1992:185) and demonstrates how one can become one’s own inner teacher (Houston 1982). By embodying and enacting experience, we gain multidimensional views of an event or experience and by exploring at an internal imaginative level, we encouraging substantially greater depth in our learning. Learners become empowered by developing discriminative clarity and behavioural competence in these internal processors. This process needs to be reflected in the opportunities and resources mobilised in the outer learning environment. It is essential for educators “to possess such discrimination and competence themselves if they are to model and activate the processors to enhance the experiential learning competence of their students” (Mulligan 1992:185–186). The case study presented below, is an account of one teacher’s effort to create personalised learner-centred experiences in a group curriculum context towards guiding learners to become self-mediators of their own learning processes.
8.4.4 Contextual relevance: illustrative case study of the central self

Description. The illustrative example is taken from the Creative Mediator Programme (Muller & Kleinschmidt 2004) previously discussed. It took place at a school in the stretch known as the Klipfontein Corridor, where relocations had taken place under the group areas act of the former apartheid era. The programme was run under the auspices of the central metropole division of the Education Management Development Centre of the Western Cape Education Department with teachers across the curriculum and across grades. The teacher concerned had been one of the first to come forward as an active participant demonstrating transference to her classroom of mediation methods workshopped with the whole staff. The lessons belonged to a grade ten history class dealing with the European Alliance. On my first visit, approaching the classroom at the end of the corridor admittedly rather apprehensively, side-stepping litter strewn around mud-puddles near the tuck shop area of the school quadrant, remnants of my own early high school history periods with its endless memorisation of names, dates and places screened through my mind. I was wondering what a group of coloured and black South African youths, given our own still close-to-the-bone troubled past, could possibly gain from European war history. What I was to encounter stepping over the threshold of the classroom door, however, was to change my perspective for ever. The desks had been moved to the furthest corners of the classroom and learners were strategically positioned on a geographical floor map wearing different coloured headbands enrolled as the countries involved in the European Alliance. They were interacting with each other, engaged in lively dialogue while enacted their parts in the first person. The teacher was weaving in between them probing them with questions and prompting the scene as if directing a drama script. This was followed up with a parliamentary debate between two halves of the class taking different views around related issues, critically reflecting for and against the situation. It led quite spontaneously to a discussion about circumstances surrounding our own democratic process that contextualised it in everyday thinking, the learners becoming quite outspoken in their knowledge of government policy which received wide media attention and which led us to a new appreciation of our own advanced open democratic parliamentary system in terms of how it has ushered in participation on all levels of society with the reminder that we are shaping history now “You see”, the teacher would affirm at the end of the session, “we are all historians”. From an adjacent class we hear echoes of singing work-shopped the day before, with another history teacher who had been asked to teach arts and culture with no prior experience, and with whom we revived some liberation songs with the learners creating their own multi-arts process in conjunction with their history lessons on segregation and the group areas act. During these sessions with this particular school some of the sensitive racial tensions between coloured and Xhosa-speaking learners, which is rife in many Western Cape schools, were addressed in an amenable way especially by re-involving learners who were repeating the grade who had been sidelined and asked to sit out.

The Creative Mediation Programme was discussed in chapter four of the fieldwork journey.
Learner-centred modalities. One of the main concerns expressed by educators participating in the Creative Mediator Programme, and particularly at this school, had been how “to connect learners with learning” (Muller & Kleinschmidt 2004). From the perspective used in the programme we approached the classroom sessions by opening the learning process to the whole self. The new national curriculum emphasises: “Mmotivating learners by providing them with positive learning experiences, by affirming their worth” (RSA 1996a). In order to engage the whole learner, one would need to ensure that all the learning environments i.e. across the inner, outer and central self are operating optimally in an integrated way. Not all the aspects of the learning process need to be predetermined, allowing learners to seek patterns and relationships in the experience on their own as a series of reciprocal relations, instead of consisting of events separate from each other and from the learner. By continual self-referencing learners are encouraged to employ creative methods that do not use one process to the exclusion of others and which foster a central sense of self mediating between the inner ways of knowing and outer ways of relating to the world. The ideal learner-centred experience is harmonious interaction between all environments, reinforcing holistic learning of many different layers of the self simultaneously. We also found that a heightened sense of creativity can be experienced when submitting our values and beliefs to the views and methods of others, especially those of another culture and from the interactions unfolding between them (Muller & Kleinschmidt 2004). The following are some of the perceptions that came to the fore in this particular case study.

The teacher commented that she had looked for “a way to do the lessons differently” and to “lighten the workload” for the learners by taking out specific factors from the content which they “acted out” in class. This would enable them to “learn the relevant details” in a direct personified way since “they don’t like reading” and “find it [the topic] boring”. The learners had difficulty with which countries were involved in the dual and triple alliance and why. The teacher felt that by enacting these parts out directly amongst themselves they would understand why there was so much politics involved in gaining power to control others and to stimulate them into asking why. The coloured headbands helped them “to quickly distinguish and memorise the countries involved in representing the different alliances that were formed”. This “actual partaking of self” in recreating the setting meant that “it was no longer necessary for them to relate to the book”. Throughout the sessions, the teacher attempted to “always bring them back to now, to understand the present need to go back to the past”. The events showed how “change and continuity is dealt with every time you touch on the theme” and she pointed out by referring to other examples that “change doesn’t occur in all societies”. The link to the parliamentary debate relating to the South African situation was “to make it relevant to them”. They were assessed in terms of “how they dealt with the content” i.e. “by remembering in action”. When asked how she had connected these lessons with the curriculum learning outcomes, the teacher did not know outright, since her main focus was to get the content across and she needed to “go back and refer to my curriculum learning area”. Teachers receive continuous support from curriculum advisors in this regard, with numerous workshops and circulars relating to their specific learning areas. To some
extend they feel “inundated with admin work” and many switch off from the departmental curriculum input to concentrate on their subjects which they know best. The purpose of the Creative Mediator Programme was therefore to complement curriculum support with mediation guides that would encourage teachers to work with the whole learner. Once we revisited the lessons by superimposing the mediator maps of the self, a number of dimensions came through that were not initially apparent and revealed many more connectors than the teacher had anticipated. We had decided to look at the way the learners connected to their learning by tracing the relationship between the inner and outer learning environment through the dimensions of self namely the sensing, feeling, mental and intuitive aspects of self in relation to the task.

By personifying the lesson material, the teacher had placed her learners within an immediate practically efficient and active experiential mode that evoked the sensing self. This made the historic events real for them and the pace with which they relayed the facts was sequential and detailed and motives for their actions well-defined and explained. Time-frames of the class period were adhered to and the material was economised to engage maximum response from learners and made directly accessible with co-operation of learners standardised across the class. The plan of operation was preset for them and directions given explicitly upfront with certain rules and procedures to set them in action. Once this was done, the structure remained familiar and routinely specific for re-enactment and recall, or as the teacher named it “remembering in action”. They were able to choreograph the actions without initially understanding the implications of what they were learning. Means of assessing included standard short right-wrong answer questions aimed at all learners and leading characters as well as summaries with specific questions around names, dates and figures or by finishing sentences.

By placing characters in dynamic relation to each other, the feeling self was evoked that gave a sense of subjective value and worth to the events. The people-oriented mode generated personal interest in others’ views and the way they interacted. By changing the work-space for free moving about while executing the task, a less formal ambiance and attitude was created to set the right tone for inviting learners to participate. Opportunity was given for learners to relay their experiences and give expression to their feelings of the process and to invite shared discussion with acceptance of appropriate differences. The teacher fluctuated between the group and characters to co-participate and to co-ordinate the group as a whole, not in a competitive way but co-operatively in shared tasking. This made it emotionally stimulating. The task was discussion-based and co-created rather than reading an existing script. Means of assessment involved individual values and opinions, peer and group feedback of the material as well as the learning process.

The thinking self was employed by the teacher probing the learners with thought-provoking suggestions and logical inferences in order to make sense of the lesson content. Challenges were posed
to the learners via specifically articulated questions to invite abstract conceptual modes of analysis and critical thinking with opportunity to refer to text materials and back-up resources for accurate information. Amidst clear instruction and explicit methods of thinking the teacher acted as knowledgeable historian to be consulted on missing information and even drawn in to debate some of the conclusions while giving attention to technical intricacies of the subject matter. The learning space encouraged orderliness of the mind and functioned more like a research environment with learners seeking the relevant information and resolutions in order to participate and were guided to the correct answers and reasons rather than having them provided in text. Comparisons were drawn and lots of factual information imparted. Means of assessment included critical evaluation of their own thinking processes and the work of their peers as well as refining the criteria by which these observations and evaluations were formulated. Constant critiques, opinions, comparisons and analysis contributed to their mental involvement and performance.

With the intuitive self learners gained through the reflective process and simulated parliamentary debates, a higher relevance behind apparent facts and were able to apply personal meaning in terms of their own relationship to the historic events. These qualitative dimensions cannot be assumed if one is dealing only with textbook data. They tapped inherent potential and were able to relate it to life circumstances that may influence the way they see and participate in political ventures in future. Thus a holistic overview of the learning task was achieved while open-ended explorations of the topic allowed for multiple contexts and innovative methods of participation to emerge from the learners themselves. The aesthetically aided dramatisation presented an original and intriguing way of relating to their topic and invited uniqueness of interpretation and a spirit of invention in the orientation to task in which the general effect created many opportunities for follow-up activities and projects which learners could design on their own with ample time and opportunity for experimentation and expansion of the ideas. The educator's presence as co-explorer prompted speculative and imaginative responses along with conclusive results. Multi-tasking was favoured, created through projects, portfolios and writing their own (hi)story. Means of assessment included value of ideas, creativity and originality as well as the initiatives of the learners that lie beyond obviously measurable outcomes e.g. by writing journalism reviews that are reflective, descriptive and inclusive of their own ideas.

Diverse organisational dynamics were employed and each mode needs to be valued in its own right as well as co-operate and support the worth of others. In systemically complex self-mediated contexts their own organisational patterns can form and affect the whole, alternating between foregrounding and following. Learners should be empowered and encouraged rather than criticised by respecting their different learning approaches and preferences in which a match between learning style and abilities creates a synergy. Styles “account for variation in performance that abilities do not account for” (Sternberg 1997:147), and they are “a construct that can be placed at the interface between
cognition and personality” within the self (Sternberg 1997:158). Often one hears of one-dimensional descriptions of someone who is perceived as organised. However, if one takes this term alone and maps it through the whole self, different qualities of organisation become enlivened in different ways and contexts. Tracing relationships and patterns between them is more rewarding than pre-descriptions.

8.5 The transcendent and embodied self: a greater unified whole

The self as a greater whole in the system of ideas is similar to Jung’s concept of a transcendent function which set him aside from other theorists of the self (Stein 1998; Jung 1970). While for Jung the self “is not defined by or contained within the psychic realm but rather lies beyond it” (Stein 1998:152), the central sense of self in this system of ideas emerges from the actual embodiment of its transcendent ideal. As with Jung’s concept, it implies that when the self has reordered the contents and dynamic relationships into a new balanced whole where all aspects are well connected, the human being stands in relationship with a transcendent centre which gives rise to a middle way (Jung 1970). This final destination in the journey of individuation is also referred to as self-realisation, a way of self-knowing, which finds new meaning and a higher purpose within self. There is “a shift of its psychic centre, and consequently an entirely different attitude toward, and view of, life – in other words a ‘transformation’ in the fullest sense of the word” (Jacobi 1968:127). Since the unknown and known aspects of self are no longer opposing one another, they form the alchemical *conjunctio oppositorium* or higher union, regarded as an indispensable prerequisite for wholeness (Jung 1970). The notion of a union of opposites is substituted by the systemic concept of a complementary synergy (Járos 2000) that implies their natural inherent union since opposites are only perceived on the relative realm. For Jung “consciousness presupposes a differentiation into subject and object and a relation between them” (Jung 1970:193). The essence of a transcendent function is that “it makes the transition from one attitude to another organically possible” without loss of energy (Jung 1969b:73) and becomes “a way of attaining liberation by one’s own efforts and of finding the courage to be oneself” (Jung 1969b:91). From a systems perspective, however, the knower is continuous with the rest of the universe, as the known, and “[h]ence in this metaphysics there is no gap between subject and object – these terms refer to artificially abstracted entities” (Laszlo 1972a:293).

The transformation of apparent opposites into a higher synthesis can be expressed by means of “the uniting symbol as the principle of dynamic regulation” (Jung 1971:208). In the system of ideas the most significant of these is the field-like universal mandala figure which represents the cosmos or cosmic self (Chetwynd 1998; Wilhelm 1984; Jung 1969a:290–354; Eliade 1964). This symbolic realm usually appears in the form of the *quadrature circuli*, the squaring of the circle with its symmetrical arrangement of opposites and ever-changing dynamics around a midpoint while at the same time encompassing the whole (Jung 1970). Mercury, the archetype of wholeness, i.e. “the unifying agent in
the spirit Mercurius" (Jung 1970:13), corresponds to the alchemical vessel of transformation (Jung 1969a:355–384). The "middle disposition" between two extremes as ascribed to Mercury (Jung 1970:9), reconciles the dual nature of above and below, the flow-like perception in the system of ideas: "the medium between the two extremes or opposites, and the passage of one opposite to the other or from one extreme to the other is possible save by a medium disposition" (Jung 1970:501). He is "the original man disseminated through the physical world, and in his sublimated form he is that reconstituted totality" (Jung 1970:13). For Jung "[t]his symbol corresponds to the modern representation of the self" (Jung 1970:505). In the system of ideas the inner and outer worlds mutually specify each other as a synergy of complements (Jaros 2000) and are bound together in a process of "reciprocal specification and selection" (Varela et al. 1968b:174). Many traditional systems have used this symbol as "the image of deity unfolding in the world" (Jung 1968b:389), such as the creator-destroyer of the Hindu Shiva-Shakti concept (Maharishi 1984), the tao emerging from complementing yin and yang energies (Jung 1971:216–217) and the Chinese golden flower representing "a translation of meaning into life" (Wilhelm 1984:158). The cosmic order, the harmony of the spheres and mythic deities were all essentially related for Pythagoras "and the meaning of that relation was revealed in an education that culminated in the human soul's assimilation to the world soul and thence to the divine creative mind of the universe" (Tarnas 1996:23).

Modern Western civilisation has placed great demands on directed conscious functioning which entails dissociation from the unconscious (Jung 1967b): "[t]he further we are able to remove ourselves from the unconscious through direct functioning, the more readily a powerful counter-position can build up in the unconscious, and when this breaks out it may have disagreeable consequences" (Jung 1969b:71). For Jung "the psychological mechanism which transforms energy is the symbol" (Jung 1969b:45). The mandala can indicate the marking off of a sacred precinct for inner work which bears a particularly illuminating parallel to the individuation process. Apart from serving as symbols of contemplation, Jung had noticed that in certain instances, mandalas appeared quite spontaneously during times when there was a need for harmonisation and integration of conscious and unconscious elements in the life of his patients (Jung 1969a). The human being has a great symbol-making propensity with the ability to endow any situation with symbolic significance (Jung et al. 1964). Symbols instil emergent patterns beyond causal probability to articulate the principle of synchronicity as meaningful co-incidences between inner and outer events in search of the unus mundus, the unified cosmos (Jung 1970, 1955). Synchronistic phenomena, Jung found, appeared more often when the psyche was operating less cognitively. That we can know beyond rational thought took him speculatively into the notion of a unity of self and the world as co-creators of a cosmology in which the psyche reflects the underlying ordering principle of the universe (Stein 1998; Jung & Pauli 1955). For this reason he employed the active imagination to procure images embedded within the unknown by placing greater emphasis on dreams and fantasy to evoke and amplify its contents. He believed in their innate capacity to connect the inner and outer worlds, to mediate and organise meaningful
experiences: “they are transcendental ‘essences’ or quintessential distillates of creative power and meaning, revealed to us in symbols” (Salmon 1997:57).

Whereas Jung denies that it is possible to fuse the ego with the unconscious without dissolving the ego in the process: “[i]t must be reconed a psychic catastrophe when the ego is assimilated by the self” (Jung 1970:24), requiring thus that the inner and outer worlds be connected in a way that seek a balance between them, mythologist Joseph Campbell calls for their “mystical fusion” (Campbell 1949:164–166). This forms an ideal relationship between the worlds, one where a higher state of consciousness prevails and in which one becomes “one with all things”, rendering all opposites illusory. This “fusion of all opposites into a single, higher unity” is for Campbell the ultimate message or purpose of all myths. Symbolised as the hero’s journey “he knows without and within the same repose”, turning the inner transcendent truth outward again to the everyday world when returning from the inner quest, so that he “perceives without the same ocean of being that he found within” (Campbell 1949:165). Going beyond Jung’s notion of synchronicity as an empirical phenomenon, i.e. of parallel and not identical events, the two kingdoms actually become one. Campbell thus makes a clear distinction between the psychological and metaphysical meaning of myth: “[p]sychologically, the unity is of the ego with the unconscious” while “[m]etaphysically, it is of the individual with the cosmos” (Segal 1987:85). Psychologically, one ascends through the levels of one’s own consciousness. Metaphysically, one ascends through the levels of the cosmos.

This is a crucial distinction to make when considering the integration of the embodied and transcendent self in the system of ideas emerging from the central sense of self, which is the continuity between the metaphysical cosmos on the level of one-ness or unity consciousness and its reflection and co-action in the personal psychology on the level of diversified individual consciousness. That is, the personality self mediates between an inner and outer world in the relative space-time reality, and is inextricably linked in with the metaphysical self which mediates between a higher universal self and lower individual self. In the system of ideas a complementary relationship and synchrony exists in the continuous passage between the ideal conceptual and actual physical and the causal logical and non-linear mythological worlds to realise their communion (Figure 8.14). The map of the self mediates different worldviews of the individual and collective self, which is epistemologically imposed by our cultural or personal perspectives. In the East and Africa, for example, divinity is at once transcendent and immanent, while in the West an ontological distinction is retained between them (Campbell 1964, 1962). Western progression creates linear temporal structures in which there is a beginning of time while the East perceives cyclic time making no distinction between past, present and future (Eliade 1964). Thus the East associates with an immanent and impersonal deity while the West rests with a transcendent and personal creator. Mythological images reveal a deeper connection between human existence and the cosmos that can only be experienced not analysed. The function, meaning and origin
Mediator-aspect of the meta-frame: a metaphoric guide

of myth instils a sense of mystery when encountering and describing the world, and serves in turn to create order by harmonising the individual within self, society and cosmos (Campbell 1992, 1972).

For Jung the true subject of myth is the archetypes themselves. They do not symbolise something else, they are the symbolised. The mythic and archetypal levels are the same, and they are inherited not invented. He “views myth as ultimately based on the extraordinary experience of archetypal numinosity in dreams, fantasies, and visionary states of consciousness” (Walker 1995:125) as associated with ordinary life. They serve as conduits for opening up experiences with the unconscious: “the outer world of social myths and rituals and the inner world of the strange mythology of the psyche are connected”. Public and intrapsychic worlds “meet at the point where the human imagination create myths and symbols that correspond both to social needs for harmony and to individual needs for growth and individuation” (Walker 1995:92-93). Unlike Campbell, one should not become identified with them lest one loses touch with the personality (Segal 1987). For Campbell they are sufficient within themselves and personal therapy is for those who lack myth for they contain all the wisdom one needs. Myth when taken symbolically, which means psychologically and metaphysically, is true. Thus they are to be lived by (Campbell 1972). And in so doing they reflect a perfectly regulated cosmic order which one can experience directly such as in “music, the art rendering audible to human ears the world-ordering harmony of the celestial spheres” (Campbell 1968:147). Therefore the self operates as “the ultimate principle of harmony and unity” similar to the Vedic concept of Atman, Sanskrit for self, which “designates the transpersonal oneness of identity for all beings” (Walker 1995:84). The Western interpretation of Atman often leads to the perception of an impersonal self as a selflessness or a state without self (Levin 1992) whereas the system of ideas distinguished between the lower personal or embodied self and the higher transpersonal or transcendent self, the one implicit within the other which “is a continual oscillation between our individual existence and living with the universal world process” (Steiner 1995:102). The more we rise into universal consciousness “the more we let go of our character as particular entities”, as separate personalities, and the more we “resonate with the experiences of the outer world, the more we separate ourselves from universal being” (Steiner 1995:102).
Theories of consciousness and the self. The transcendent and embodied self emerging from the central self in the system of ideas is consistent with consciousness theories of the self. The purpose behind any theory of consciousness and the self has been to find a link between measurable, observable existential and phenomenological accounts as manifest in the outer world and our experience of the metaphysical and transcendent inner realm which underlies it (Valle & Von Eckartsberg 1989). Thus one of the most enduring questions to have appeased theorists of the self has been that of its dual nature namely, as both a known entity and the knower of that entity, for which the former has been claimed as being the territory of psychology, while the latter tends to remain the concern of philosophers (Prentice 2001). Different cultural perspectives have played a role in the way the self has been cognised in which “emphasis on context is associated with collectivism, while emphasis on content is associated with individualism” which may partly explain “the greater collectivism of the East and the greater individualism of the West” (Triandis & Tafimow 2001:273). However, “the traditional way of equating the self with the individual does not seem to hold up any more” (Sedikides & Gaertner 2001:7). Over time, empirical Western models have gradually assimilated the subjective experiences of self and emerging theories assume that an individual self, relational self and collective or contextual self coexist within the same self (Sedikides & Brewer 2001b), having come full circle to show our contemporary scientific metaphors to be reclaiming the ancient wisdoms of the East.

This progressive development of theories of the self through the Western classical scientific view (Edgar & Sedgwick 2002; Levin 1992; Nash 1968), was initially based on rational and empirical models rooted in Descartes’ mechanistic and deterministic thinking that led to the widely influential Cartesian self (Descartes [1642] 1951) in which the material world of mind and body were perceived as being separate and independent from the observer. Early empiricist views (Locke [1690] 1959) wrestled through self as an illusion (Hume [1738] 1911), to Kant’s self as transcendental unity by moving the knowing of self from the world to the mind creating a dialectic between inner and outer (Kant [1781] 1990). More dynamic and complex models of the self resulted in the interaction between social and cultural expressions followed by internal reintegration in a dialectical process (Hegel [1807] 1931) leading to the multiple self in William James’ continuous stream of consciousness idea (James [1890] 1983). Eventually Freud’s self presents essentially a theory of the unconscious (Freud 1962) which was taken further by Jung’s transcendent centre as an integral underlying self by introducing the transpersonal and mythic consciousness (Jung 1969b, 1971). Jung expanded depth psychology into the idea of a relationship between the collective unconscious and personal unconscious. The collective unconscious holds the archetypes and refers to the entire spiritual heritage of humankind while the personal unconscious consists of accumulated historic life contents, a concept similar to Plato’s know thyself which for him meant the world of forms or ideas as the eternal cosmic pattern reflected in the world of experience (Cornford 1937). Jung’s dialectical relationship between them is realised through

11 The term self is generalised here, some theorists have used other descriptors for the self such as ego or identity.
the transcendent function and the dynamics of the self based on self-regulatory equivalence and entropy in reaching its desired whole state. The principle of synchronicity serves as meaningful coincidence in connecting the conscious self with its ideal state of pre-established harmony (Jung & Pauli 1955). The phenomenological perspective on the self presents a transcendental ego which is outside the world and yet which includes it in some way (Husserl 1931) and the idea of a self embedded and inter-connected with the world shows subjectivity to exist merely as an abstraction upon analysis where the distinction between object and subject arises (Heidegger 1968). Heidegger, coming out of the existential phenomenological tradition (Husserl 1962, 1931) introduced into philosophical discourse two primary modes of thinking in the way we approach the world: rational, calculative thinking concerned with worldly phenomena and intuitive, responsive meditative thinking which is respectful and appreciative of the mystery of life and which assists in overcoming the dualism inherent in subject-object Western mind. He created a dynamic fourfold polarity between earth and sky, mortality and divinity emanating from the essence of being and within which the human being dwells (Heidegger 1968, 1949). Another metaphysical cosmology presents the self as a continuous flow of changing processes and patterns instead of a static self as an abstracted entity (Whitehead 1929). In developmental theories of the self, Dewey (Dewey 1929) critiques those theories that reject the actual in their search of the ideal. Some theories represent the self as a circular causal system (Erikson 1982). The theories of self above are mainly presented as an interaction between an inner and outer self: "[s]elf is experienced as, and indeed is, an interaction between innate potential and environmental response" in which "[f]eelings of aliveness, cohesion, agency continuity (ongoingness), and self-worth come from both within and without" (Levin 1992:208).

Changing perceptions of consciousness have impacted on models that seek unity of the self (Hofstadter & Dennett 1981). While some of these approaches try to establish unified consciousness by including perceptions of a compound self consisting of a cohesion and continuity of parts and wholes (Lockwood 1989) others maintain a meta-psychological relativism in that "we cannot decide as individuals what counts as our own continuation" (White 1991:161). Our relationship to others, to the world and to ourselves "gives us our basic attunement and its modulations" and "which disclose our world in various appearances" (Von Eckartsberg 1989:72). The modulations fluctuate between clear and distinct perception with feeling, emotional imagery and intuition, forms of creative expression, and art has "opened up this level of articulated symbolic connotative thinking in which we participate, and which provide contexts of meaning-enrichment to the degree that we, as individuals, have developed awareness of this domain of existence, and cultivated it as an important part of our psychocosmic world" giving unity and coherence to our understanding of life (Von Eckartsberg 1989:83). Hillman points out that emphasis on transcendence can leave the darker side behind which is essential to human nature (Hillman 1979, 1975). There have been returns to Plato's concept of self-mastery in which lower aspects of the soul seek order, concord and harmony for a unification of the self as a precondition for transformation to higher states and which can be achieved through the
mind and internalisation (Penrose 1994; Taylor 1989). Although many theories seek perspectives of self-knowledge that guide self-regulatory states between an ideal and actual self (Higgins & May 2001), the ideal is often termed in a teleological and relative time and space reality rather than the eternal ideal. Some neuro-scientific studies have attempted to bring them closer by suggesting a connection between brain processes and the fundamental Platonic realm embedded in the time-space continuum (Hameroff 1998; Hameroff & Penrose 1996). Wilber's vision of the spectrum of consciousness and levels of the self (Wilber 1982, 1980, 1977) are grounded in Hindu and Buddhist teachings in which the centres of consciousness have been aligned with the chakra system (Lama Govinda 1957). It is a representational map of a universal view of the nature of human consciousness in which the innermost consciousness "is identical to the absolute and ultimate reality of the universe" and which is "spaceless and therefore infinite, timeless and therefore eternal" (Wilber 1977:8). Transpersonal states which merge with the cosmos are not confined to the boundaries of the individual being, while existential states are concerned with personal subject-object experience in space and time. Models of the self are evolving towards unity consciousness, i.e. from unity on the level of waking consciousness towards wisdom and all-encompassing consciousness (Gallagher & Shear 1999).

Quantum consciousness theories of the self. As we approach the holocosmic paradigm, scientific theories of the self have begun to assimilate spiritual philosophy and become almost indistinguishable from ancient doctrines (McTaggart 2003; Ricard & Thuan 2001; Zohar & Marshall 2000; Talbot 1996, Varela et al. 1993; Wallace 1993; Weber 1989; Bohm 1980; Pibram 1979; Capra 1976): "what is considered to be revolutionary by the scientific community finds echoes in the doctrines of the ancients" (Weber 1989: 123). The dichotomy between objective and subjective methods is questioned, in favour of a view which alleges that both the scientist and the mystic are involved in empiricism. Heisenberg's indeterminacy principle and theory of a participatory universe (Heisenberg 1971) have eroded the distinction between object and subject, knower and known. Instead we have a self-conscious universe realising itself to be integrally whole and inter-connected. In these approaches the usual dualities such as mind and matter, knower and known, idealism and realism become illusions that dissolve into pure undifferentiated bliss and unreferenced compassion, or a state of just being: "[t]he dismantling of the thinker yields energy that is qualitatively charged. It is energy unbound and flowing, characterised by n-dimensionality, and the force of compassion" (Weber 1989:128). Known as a state of pure awareness, it is released from external distractions and bypasses the constraints of discursive thought, thereby transcending perception of a subjective-objective or inner-outer reality, and, even existing independently of the brain. This immersion in a fundamental luminosity of the mind, found particularly in deep meditative states of heightened consciousness, pervades the whole universe (Lutz et al. 2004). The notion of a separate material world falls away and introduces the belief that human beings are composed of a coalescence of interacting energy patterns as an inseparably connected dynamic web in which meaning emerges only in relation to everything else in the world. It suggests a sense of being everywhere at once where even time and space appear to be
relative constructs that uphold our waking world. The self-regulating “individual entity is transient and insubstantial” (McTaggart 2003:27). Matter does not exist with any certainty in definite places nor do events occur with certainty at definite times: “we and all the matter of the universe are literally connected to the furthest reaches of the cosmos” (McTaggart 2003:31) so that “[s]pace and time are seen for what they really are – mental constructs” (Valle 1989:424). It was found that cause and effect determinism made way for uncertainty and probability in an endless field of possibilities: “[r]ather than a universe of static certainty, at the most fundamental level of matter, the world and its relationships were uncertain and predictable, a state of pure potential, of infinite possibility” (McTaggart 2003:12).

This meeting of the laws of physics and the human psyche had been explored as a synchronous and continuous collective unconsciousness (Jung & Pauli 1955) which brings a unity value and purpose to our diversified world: “[w]e can reconnect individual life with the life of the cosmos, with the evolutionary power of nature, and become the lively embodiment of natural law” (Wallace 1993:12). It restores the belief that consciousness is the basic underlying field of life which has infinite organising and creative power and “at the lowest level of mind and matter, each of us creates the world” (McTaggart 2003:160). A theory of self that integrates knower, known and process of knowing (Wallace 1993) can promote the multiplicity and dynamic, ever-changing nature of self-definition that is currently being sought in representations of the self (Deaux & Perkins 2001; Gallagher & Shear 1999). Therefore “we can make simple changes at the fundamental quantum level of our physiology of consciousness, and thus create dramatic changes at the classical level of our physiology of matter” (Wallace 1993:21). The quantum self “experiences no dichotomy between the inner and the outer because the two, the inner world of mind (of ideas, values, notions of goodness, truth and beauty, etc.) and the outer world of matter (of facts) give rise to each other” (Zohar 1991:219). A quantum worldview “transcends the dichotomy between the individual and relationship by showing us that individuals are the individuals that they are always within a context”. I am my own relationships, “my relationships to the sub-selves within my own self (my past and my future), my relationships to others, and my relationships to the world at large” (Zohar 1991:219).

While for the Western world, we have come full circle in incorporating transcendental principles into physical laws and descriptions of the universe, the scientific viewpoint is but one of the various ways humanity orientates its quest for understanding and the search for a pattern of meaning: “[i]t is precisely by limiting its scope to the experimentally verifiable that modern science has had such enormous success within its domain. The downside is that it cannot therefore by itself provide a satisfactory overall worldview, even though this is sometimes attempted” (Ellis 2002). Some prominent scientists have advised that it would be arrogant to assume that physics alone, in its pursuit of a theory of everything, can uphold this task and question whether, if it were to be extended into
aesthetics and intuition, it would still be thought of as, or even be reducible to physics (Hooft et al. 2005). The purpose of the self-referral state of the central self in the system of ideas requires that we orientate and expand our worldview to include symbolic and mythological modes of knowing and being since perceptions of the outer creation of the cosmos are not merely subject to intellectual analysis but can be experienced directly, which has "with the help of alchemical philosophy now slowly come back and reentered the individual, whence it unconsciously originated" (Von Franz 1995:353–4). This mystical one-ness with the cosmos means that "the unification of the individual at the end of the process comes not only within himself, but spirit, psyche, and body are united in the cosmos" (Von Franz 1995:357). One concludes from this that the self is in a way identical with cosmic reality, something that cannot be scientifically proven, but which can be viewed as complementary aspects of the same living phenomenon (Jung & Pauli 1955). External methods describe the world according to physics, while introspectively it can be described as archetypal constellations of "a reversed creation, really just the mirror opposite of all the cosmological outer theories" (Von Franz 1995:359). The central purpose is to provide a basis for a science of consciousness which includes "subjective experience as an explicit and active component" (Varela & Shear 2000a:2) and which includes introspection and intuition (Varela & Shear 2000; Steiner 1995). According to James the unity of consciousness idea is a flux and not a state (James [1892] 1983), "there is no distinction between the thinker and the thought" (Bailey 2000:152). We normally think of awareness of subjective experiences as inward rather than an outer awareness but "here even awareness of one's own most private, internal thoughts and feelings is still external to one's awareness itself, for they still appear to one's awareness, in front of one's 'mind's eye', so to speak", and "the 'inward' referred to here is intended to indicate a complete reversal of attention, away from thoughts and feelings as much as from external objects, back into awareness itself" (Shear & Jevning 2000:191). When the mind attains a field of pure consciousness, it is able to hold its individuality within the void (Maharishi 1966).

Closing. The impression in this document is that implications for exploring the multi-layered and multidimensional self remain under-recognised in our current contexts of education leaving the majority of learners feeling disconnected with learning, with life and the self. The metaphoric maps of the self presented in this chapter are intended as a guide only, as a means of shifting the mind to include different ways of knowing and experiencing learning contexts which has been synthesised into a coherent frame consistent with the principles and concepts of the proposed system of ideas. "Metaphors are most useful when they serve as guides" (Sternberg 1997:150), i.e. they are analogical and should not be interpreted too literally. Using the music world creation as the basis for a mediating guide serves to bring forward certain aspects of education that may otherwise remain invisible, creating new dynamics and opportunities from which self-referential and recursive processes emerge for learners and their educators that involve the whole self (Keeney 1983).
9. Implications for an integrative paradigm in education

This chapter reflects on the possible implications of the proposed meta-frame of inquiry, with its system of ideas and mediator maps, for education. The framework was derived by means of synthesising different theoretical concepts and practical contexts from various disciplines and fields into a uniquely configured systemic guide with its own consistent schema of metaphors that serves as a flexible mediating guide to explore possibilities for educating the whole self. Reflections on the potential impact of this unifying framework as an integrative paradigm for education are discussed in relation to education practice in general as well as from a music education perspective. This is achieved by reflecting on purpose-based systems design methods for ideal and transcendent approaches to education in general. These approaches are also reviewed in relation to music education systems with particular interest in multiculturalism from a South African and world music education perspective. And lastly, implications for embodying a metaphoric map of the self as a means of mediating education in general are explored through the proposed meta-frame.

9.1 Impact of the system of ideas and mediator guide

Although the system of ideas proposed in this document is based on unifying metaphors and abstract universal principles, it evolved in conjunction with the practical circumstances surrounding complex and diversified cultural challenges facing a nation in transform. The education development fieldwork journey described in the earlier chapters was inspired by the vision created for the new democratic South African context, namely of a lifelong learning development framework for education, stated by the National Department of Education as follows (RSA 1996a):

The vision for South Africa encompasses a prosperous, truly united, democratic and internationally competitive country with literate, creative and critical citizens, leading productive, self-fulfilled lives in a country free of violence, discrimination and prejudice. The realisation of this vision requires appropriate lifelong education, training and development to empower people to participate effectively in all the processes of a democratic society and to excel in fields like human and natural resources development, human and natural sciences, the arts and technology.

The newly united and democratic government of South Africa inherited a divided and unequal system of education. While on the one hand there is a need for expressing the diversity of all representing cultures, there is also a call for unifying the nation. The major challenge for education development has been to make the transition from a former oppressive ideology to a participatory and representative one as reflected in the constitutional principles of the Revised National Curriculum Statement (RSA 2002). This statement stresses the responsibility of the education system to ensure that all learners have equal opportunities while addressing the need for individuality within a complex, culturally diverse and dynamic society dealing with change and uncertainty. Therefore new pedagogical
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approaches to inform and assist educators towards this ideal remain at the forefront of transformation in teaching practice. This study promotes the belief that the country has a unique opportunity, despite the socio-economic drawbacks, to raise a vibrant and creative education system if it were able to channel the diverse cultural attributes into a coherent system. It requires a shift in attitude, especially in the minds of educators, in order to open up possibilities for new systems to emerge and come to life. The integrative paradigm presented in this study is an attempt to explore such visionary possibilities.

9.1.1 Purpose-based systems: an ideal and transcendent approach

The system of ideas formulated in the integrative meta-frame of this study reflects the principles of visionary and purpose-based systems that are founded in transcendent and ideal systems design methods based on the following approaches:

**Purpose-based systems approaches.** The systems principles of this study are located within the general systems paradigm (Capra 1996; Von Bertallany 1968; Laszlo 1972a, 1972b), more specifically the biomatrix systems approach co-developed by research colleagues (Dostal et al. 2004; Cloete 1999; Jaros & Cloete 1987). These principles share an affinity with purpose-based systems approaches as ideal end-state seeking systems (Ackoff & Emery 1972) that tend to reach beyond the existing system in order to search for new and creative outcomes guided by transcendent and ideal systems design methods (Banathy & Jenlink 2000; Dostal 1997; Banathy 1994). In the South African context, there has been a tendency for Western scientific ideologies to impose divided and class-oriented structures within society, while the African *ubuntu*-principle adheres to the values of a community-oriented culture, representing a collective function in society. During a period of cultural transition the integration of their respective values and interactive dynamics in finding reconciliatory approaches present opportunities for new social models to emerge (Dostal et al. 2004). The scientific age with its mass related value-based system modelled on the mechanistic and industrial age, brought to education a quantitative sameness in outcome. The current information age promotes qualitative differences in which aesthetics and culture have an important part to play. Simultaneously however, is the emergence of unified world cultures such as world trade, global network systems and the world music culture, which is searching for universal values to provide a unifying force amidst the growing awareness of diversity. To acquire an integrative approach, “education in South Africa has to preserve individual cultures and instil mutual understanding and appreciation of them, as well as fostering a universal value system which can transcend cultural differences” (Dostal 1997:173). The system of ideas presented in this study emerged out of the need to provide a transcendent and meta-contextual dimension within which to reflect and understand the complex issues implied by such ideals.

**Transcendent systems approaches.** Transcendent systems approaches are supported by purpose-based systems philosophy and share the belief that today’s education systems will define the creative

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1 The African concept of *ubuntu* generally means that a person exist by virtue of others (Tracey 1994).
capacity, competence and character to shape future generations (Banathy & Jenlink 2000). There is a growing awareness amongst education systems designers that present education systems are not in keeping with the new knowledge era. Practitioners are encouraged to make a creative leap into facing the new realities: “rather than improving education we should transcend it; rather than revising it we should re-vision it; and rather than re-form it we should trans-form it by design” (Banathy 1994:317). These approaches challenge existing assumptions and restrictions that deal with problems and their associated constraints, claiming that they tend to lead to obvious solutions which diminish or eliminate the opportunity for breakthroughs (Nadler & Hibino 1990). In the transcendent systems approach, visions begin with new purposes around which to design an ideal system. It grants opportunities for transcending the fixedness of the existing system and for transforming perceived problems into creative change. Hence, one needs an understanding of purposes and not problems to enable change.

**Ideal systems design.** The ideal systems design methods of the transcendent approach refer to the conceptual creation of new or renewed systems that reflect the ideals of the designers rather than expected end-states such as goals or objectives. In such a design process “ideals can never be achieved, but they can be continuously approximated”, and goals or objectives re-interpreted on the basis of the same ideal (Dostal 1997:125). Generally, ideal systems design suggests that, rather than engage in time-consuming analysis, which tends to represent a static picture of the situation, especially with regard to qualitative, complex human and social systems, one should transcend the existing system and proceed directly with finding new solutions (Banathy 1994). A transcendent strategy is based on the recognition that, when a new stage emerges in the evolution of a society, the continued use of outdated cognitive maps loses its viability and can even cause the decline of a system (Banathy 1991). The challenge for designers is whether they have the capacity to face the anxiety and ambiguity that is generated when transcending the familiarity of a system in order to enter into the territory of the not yet known. The guiding basis for any ideal systems approach requires an understanding of and the ability to grasp what the implications of the new realities of the transforming situation mean (Dostal 1997; Banathy 1994). Furthermore, the designer should be prepared to leave old ways of thinking and acting behind and to envision a new image of the future or desired ideal. Thereafter, it is brought to life by design, in a participatory way through continuous assessment, capable of approximating the desired results. Transcendent approaches require different degrees of change, some more drastic in releasing the old system than others (Nadler & Hibino 1990). In the case where old ways have to be relinquished entirely before new systems can be created, the process can be facilitated by generating an atmosphere of courage within and amongst participants (Bridges 1991). This may include marking endings by creating activities to dramatise closure as a measure of respect for the past and to honour it for what it has accomplished instead of disengaging from it, showing how endings ensure continuity of that which really matters. The biomatrix approach has made specific contributions to systems design methods by adding levels and dimensions such as the inner, central and outer to standard design.
procedure and the concept of tapping between levels, together with the intervention possibilities arising from them, which is not present within other systems approaches (Dostal et al. 2004).

In general, the systems basis for purpose-based design approaches are embedded in the principle of emergence, namely that the new system shows properties that the previous system did not have. For example, each problem shows the promise or gift of a new purpose. Creating a new purpose or ideal is associated with positive attitude, inspiration and constant motivation. While problems provide clues for where to find purposes, they look different to the purpose, which requires imagination and creativity to visualise. A purpose is therefore a higher order phenomenon than the problem in that “the logic of the problem is not the logic of the solution” (Dostal 1997:145). What this implies, is that manifesting purposes requires qualitatively different strategies than merely eliminating problems. Consequently designers need to move beyond the normal frame of reference when engaging in purpose-based systems design approaches. Often metaphors and stories assist in encouraging us to take a creative leap to transcend what is known (Banathy 1994; Bateson 1985).

Aesthetics as a unified and higher purpose. Consciously intended purpose in itself however, cannot recognise whole patterns of process (Bateson 1972): “[c]onscious purpose, with its aim of achieving specific goals, cannot take into account whole ecological contexts” (Keeney 1983:187). Attempts to control certain problem areas in this way can lead to disconnectedness in the system and even give rise to “higher order problems” (Keeney 1983:188). A more suitable position would be to temper the ideals as part of a more encompassing aesthetic context: “[m]ere purposive rationality unaided by such phenomena as art, religion, dream and the like”, is “destructive of life” (Bateson 1972:146). Aesthetic approaches to inquiry or intervention require higher orders of recursively connected mental processing that “arises when conscious and unconscious orders of mind provide self-corrective feedback” (Keeney 1983:190). Conscious rational methods alone are “always a fragment of the whole system or context that embodies it” (Keeney 1983:190). Metaphor, art and aesthetics are not mere expressions of the unconscious but “concerned with the recursive relation between unconscious and conscious orders of mental processes” (Keeney 1983:191). They have a complementary function in maintaining wisdom i.e. “in correcting a too purposive view of life and making the view more systemic” (Bateson 1972:147). In seeking higher purpose we come to meet the sacred union: “notions like the sacred and the beautiful tend to be always looking for the larger whole” (Bateson 1991:299) which we find in a sense of aesthetic wholeness (Scruton 1997, 1982).

9.1.2 Possibilities for a transcendent approach in education

The education curriculum should ideally be dealing with the rediscovery of dynamic relations in the living organised pattern of the whole self and in bringing the outer and inner worlds closer together (Bateson 1991). By asking how we are to achieve such a holistic and integrative education, we are speaking from within an already disconnected universe, and may be asking the question
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inappropriately. However, by first embracing an epistemology of aesthetics, systems wholeness and relatedness, the answer is already implied within (Bateson 1991). Given the pressures and difficulties in implementing the new education system in South Africa (Jansen & Christie 1999; Davidhoff 1997), ideal and aesthetic-based education development projects are often overlooked for the increasing support being offered to behavioural amendment workshops as requested and administered by the department’s Education Management Development Centres. The latter workshops favour disciplinary interventions in schooling communities where learning has become problematic, while not many opportunities are granted for exploring new emerging creative possibilities. Some of the arts-based approaches offered by the fieldwork projects in general education contexts (see chapters two, three and four), directed to troubled schools, many of them listed on the department’s under-achieving Learning Schools Programme (LSP), was initially considered too idealistic by teachers in their prevailing conditions who proclaimed that outcomes-based education is not effective and who felt that the projects would be more suited to schools without socio-economic problems instigated by an apartheid past. Within the perspective of the integrative framework offered in this study however, such a response is considered to address merely the symptoms of a learning environment caught up in the distress of multi-causal problems impacting on each other, leading ultimately to an ongoing sense of despondency. From a transcendent systems approach, reliance on improved behaviour and discipline does not necessarily lead to improved education (Dostal 1997; Banathy 1994), and could in some respects be termed equally idealistic.

Hence, the transcendent systems approach, as proposed in this study, introduced new and different creative elements into the setting that could lead to unexpected changes and insights in the perception of existing problems. It certainly served to bring to light some of the inter-related factors contributing to the situation as well as dispelling inappropriate perceptions, while offering possibilities for changing the conditions around regardless of the socio-economic factors blamed for the demise of education. Once these small openings appeared in the minds of educators, it became possible to view the inter-relatedness of the situation in a more complex multi-levelled and multidimensional way that often led to quite different conclusions. The projects showed, for example, that in some well-resourced schools in affluent areas, an equal degree of courage was needed to implement new methods. While not distracted by the conditions endured in the above-mentioned sub-economic areas, their well-defined sense of performance excellence presented its own patterns of resistance to change and creativity. In yet other settings consisting of communities enriched with a strong and natural heritage of African arts and culture that could greatly contribute to creating more conducive dynamic and vibrant learning environments, these activities were given no status in the curriculum and were mostly dormant in schools. In former Western driven models, expectations on arts and culture still fall largely in the hands of specialists, many assigned to the schools as part-time posts so that general educators

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3 SourceLink, the Western Cape Education Department's supplier database can be found on Tradeworld, an organisation that operates on a tender basis, <http://www.tradeworld.net>.
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deflect aspects of creativity to these departments. In all the cases mentioned above, a shift in mental attitude was required to prompt change and creativity in educators towards a transcendent systems approach, albeit from different perspectives and contexts of need.

What the study has revealed is that, while there is a growing awareness in South Africa towards respecting diverse cultures, there is still a tendency to impose Western perceptions and structures on the methods and values of a diverse cultural society. In any democratic context, no one culture’s ideology should dominate over another, but strive to create instead a system of unity and diversity that expresses and respects all cultures (Volk 2004; Mans 2003; Thorsén 1997). On the level of arts and culture, for example, where fleshing out the curriculum to be more culturally representative on levels of content only when redressing the imbalances of the past while applying Western methods to formerly repressed cultures, does not necessarily address the deeper issues of change. There is still a prevailing opinion that magical worldviews of under-developed and inadequately educated third world communities should be surpassed by scientific information and technology. The 2006 matriculation examination results have again shown, with more than twenty percent drop in pass rate, that governmental pressure on learners to put emphasis on mathematics and science in order to create better economic opportunities for its citizens, can work against itself if not conducted in an interconnected and multi-causal way. Unless the curriculum is dealt with holistically and the whole self is employed in the process, aspects of the individual, cultural or societal personality may become disinterested and dislocated from learning. The position in this study therefore is to acknowledge the excellence of both the African and Western worldviews and to honour their complementing qualities, as in the question of culture versus civilisation previously discussed.⁴ There is a place for intuition and divination i.e. synchronicity in scientific terms, in both worldviews just as there is a place for reason and technology within both, albeit from different cultural perspectives or contexts.

For true transformation to take place, however, the education system needs to function in accordance with the systems principles and worldview appropriate to the current information age. The following table (Table 9.1) was derived from workshops, classroom interventions and various systems sources (Dyer & Dyer 1994) gained over the duration of the fieldwork period from 1994–2004. It demonstrates some of the educational qualities that require an epistemological shift in order to embrace the values and ideals that reflect systems principles:

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⁴ The question of culture versus civilization arose in the Creative Mediator Program discussed in chapter four of the fieldwork journey.
### Values of the old education system

- Resistant to change
- Fixed and static structures
- Expert as source
- Passive learning
- Prescribed compartmentalised curriculum
- Qualification as end point, product-based
- Indoctrination of set viewpoint
- Non-personalised delivery
- Classroom-based
- Power resides at top
- Motivate through manipulation
- Focus on problems
- Analysis and reductionist thinking
- Need external acknowledgement
- Competitive and isolated
- Insist on the right way
- Work within predetermined constraints
- Compliance is rewarded

### Values of the new education system

- Responsive to change
- Flexible web of inter-related processes
- Learner as co-designer
- Active learning
- Integrated curriculum of self-discovery
- Lifelong learning, process-based
- Appreciation of other views
- Personalised learning
- Multiple learning environments
- Shared empowerment
- Inspire through caring for each other
- Focus on creating opportunities
- Synthesis and expansive thinking
- Acknowledgement comes from self
- Co-operative and supportive
- Encourage exploration, different ways
- Seek new ideals
- Creative contribution is valued

<table>
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</thead>
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</tr>
<tr>
<td>Compliance is rewarded</td>
<td>Creative contribution is valued</td>
</tr>
</tbody>
</table>

Table 9.1 Values of the old education system versus the new education system

While the above characteristics of the new education system are not unfamiliar in criteria requirements of a recent democracy, since many of them appear in national policy documents (RSA 1996a, 1996c), there seems to be considerable reticence and inertia in translating them in practice. This may be ascribed to a lack in understanding of systems principles in general as well as the lack of methods to facilitate their implementation. An ability to embody multi-layered and multidimensional systems principles is imperative to conceptualising and mediating relatedness between an external, central and internal learning environment, and the engagement of the whole self, which is not usually considered in developmental work.

Furthermore, the fieldwork journey showed arts and culture to be a powerful medium within which to evoke these systems qualities (Muller & Kleinschmidt 2004; Muller 2002; Cowan 2000; Green et al. 2000; Muller & Cowan 2000; Muller et al. 1999) and for transferring them across education contexts. From a systems perspective, if change is affected in any one area, all other associated areas will be
Implications for an integrative paradigm in education affected (Dostal et al. 2004). A shift in the perception and purpose of the cultural and aesthetic dimension of self and society can result in a profound transformation of other aspects within self and society as well. Arts and culture may thus have far wider implications for change in a time of educational transformation than is presently being recognised. The new scholarship on Dewey that has emerged places his theory of aesthetics at the centre of education even before his theory of inquiry, theory of democratic social relations or his philosophy of education (Garrison 1995). In his text on aesthetics (Dewey 1958), Dewey strives to show the continuity that exists between experiences connected with the arts and that of ordinary experiences in life. The arts provide us with an enriched experience and a deeper understanding of the self in which experience is seen as a by-product of “continuous and cumulative interaction of an organic self with the world” (Dewey 1958:220). He draws attention to the educational role of arts in general i.e. beyond mere discipline-based arts education, in human experience that we often overlook. This includes qualitative immediacy and a heightened sense of awareness in our encounters with the world especially those that elude description, as well as expressiveness in expanding and articulating our sense of meaning, infused with symbolic significance (Jackson 1995). Dewey's insistence on the objectivity of what has historically been considered subjective, sensitises our unique perspectives with increased vividness beyond surface appearances. In coming to appreciate the symbolic to recover deeper meaning in life, we achieve unified activity that sustains interest and identification of the self with that which we are experiencing: “interest is primarily a form of self-expressive activity” (Dewey 1913:21). One of the most immediate art forms through which to achieve this intimacy of the human experience is music and we can now look at music in the context of education which reflexively emerged from the music education development projects discussed in chapter two of the fieldwork journey (Muller 2002).

9.2 Music and the systems view of education

The position of music education is reviewed here from within a systems context as the proposed approach in music education policy and practice during a time of cultural transformation. The strive towards finding reconciliatory approaches for representing different cultures, especially in the transition towards including African music in a dominant Western system, has major implications for the development of education methods. The former fragmentation between the country’s cultures and between the subjects within Western-based music education has offered local initiatives in search of music as a system (Hauptfleisch 1998) and music as a whole (Primos 1997). In addition, the relatively recent global development towards world music education approaches offers a unified appreciation of the music of other cultures but has raised some questions as to the nature of multicultural music practices within a dynamically complex and diverse cultural country such as South Africa. Some of the implications of these emerging issues are reflected below within the study’s proposed meta-frame of inquiry.
9.2.1 The systems approach to music education in South Africa

The primary challenge for music education transform in South Africa has been to overcome the fragmentation legacy of a segregated society and culturally divided education system with its uneven practices of the past, and to move towards an integrated cultural system in education (Herbst et al. 2005; Hauptfleisch 1993, 1991). Not only has this required a broadening of services and opportunities that honour all the representing cultures but which also provide a sense of continuity and relatedness between all contributing aspects as well as being in line with global trends in multiculturalism and world music education. The music education curriculum reflects the mission of the new Revised National Curriculum Statement as "a set of principles and guidelines which provides both a philosophical base and an organisational structure for curriculum development initiatives" (RSA 1996c:5). It has been visualised through a curriculum framework, (RSA 1996b) informed by principles derived from the White Paper on Arts, Culture and Heritage (RSA 1996e) and serves as a strategic intervention in facilitating and guiding the development of a transformed education and training system in a practical and sustainable way. Cultural restoration deals with democratic practices, freedom of expression, affirmation of all cultural voices, equal access to resources, redress of imbalances and promoting of cross-cultural exchange. From a South African perspective therefore, multicultural music education is predominantly a social ideal, "a policy of support for exchange among different groups to enrich all, while respecting and preserving the integrity of each" (Hauptfleish 1997:265). Some of the systems approaches proposed to address music education transformation in South Africa focus on music as a system (Hauptfleisch 1998) and music as a whole (Primos 1997).

Music as a system. A set of strategies for incorporating a systems approach in music education that attaches primary value to education in music (Elliott 1995), has been put forward by Hauptfleisch to co-ordinate and manage the different component parts and processes of "music as a system" (Hauptfleisch 1998). These include music philosophy, curriculum policy, teacher education and research as well as the relationships between them. Hauptfleisch proposed the systems approach as "an optimal approach to addressing problems" (Hauptfleisch 1998:21) and adopts the definition of a system by systems theorists such as Churchman (Churchman 1968) as an organised and integrated unit i.e. "a set of objects with specific attributes, related to one another and to the environment, that work together for the overall objective of the whole" (Hauptfleisch 1998:23). Three objects are identified, namely inputs, processes and outputs and it is suggested that "a component for increasing resources may be the most important one" in a system (Churchman 1968:39). This standpoint is strongly corroborated by other music educators such as Klopper (Klopper 2005) and Rijsdijk (Rijsdijk 2003), who emphasise that attention be placed on delivery and provision of effective operating necessities rather than on outputs, previously considered the reason for a systems existence. This perception of
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Music as a whole. The notion of "music as a whole" (Primos 1997) has been proposed in terms of its contribution to the development of the whole learner and to the subject of music itself which may be described as "a holistic body of experience and knowledge" (Primos 1998:487). This is a perspective discussed from within the holism-reductionism debate and is not, although it makes some reference to it, located within the systems paradigm. It refers to the fragmentation imposed by reductionism in Western ideologies that favour division into specialised areas of study such as performance, theory of music, music history, harmony and counterpoint, and aural training. In addition, there is a separation between subject music and class music, and between theory and practice, with little interaction between them: "the subject contents of the two have been clearly separated without an attempt to forge links between them" (Primos 1997:37). Music as a whole also supports integrated studies in terms of connecting music to other domains of knowledge. Mention is made of the individual-versus-collective on a societal level referring to the Western concept of individual competitiveness and a sense of the African collective as echoed in slogans such as we are one, one nation, one people. Music as a whole considers the necessity to study the parts in relation to the whole: "both should be complementary and inform each other" (Primos 1998:489) which implicitly articulates a systems need in its search for (Primos 1997:39):

a philosophical basis on which to build a workable foundation for music education so that this complex diversity and fragmentation could work positively within unified aims and objectives. However, the very diversity creates potential for creative interaction which in itself suggests the likelihood of a potentially holistic, unifying process for music education.

The above holistic and systems approaches to music education, while landmark studies in their own right, adopt the classical systems approaches based on the early cybernetics models (Churchman 1968). These approaches focus on discrete entities or wholes whose boundaries are well-defined and whose inter-relationships of parts are then studied within the context of the system and its environment. Usually the system is studied by first identifying the problem and then building the system or investigation around it. For example, it is often assumed that provision of resources in itself can eliminate the problem of lack of music teaching. That the definition of the problem has not drawn clear distinctions at different systemic levels is not apparent and may lead to linear cause and effect solutions that deny the complex and multi-causal nature of the concern (Bateson 1985; Keeney 1983). How the problem becomes identified and phrased poses enormous implications for its epistemology and conceptual organisation in research contexts. In this instance lack of resources is aligned mainly with delivery on the outer levels of education. Likewise, by forging links between the contributing aspects of music (Hauptfleisch 1998; Primos 1997) to re-organise the outer environment, the inner levels of the learner are assumed, but not addressed. In short, the logic of the problem does not
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necessarily translate into the logic of the solution (Dostal 1997). These classical systems approaches differ radically from the transcendent systems approaches mentioned at the beginning of the chapter that acknowledge systems as complex and multi-causal. By continually approximating ideals rather than emphasising problems in a continuous process-based approach, aspects and dynamics of the system that were not visible before can be abstracted and addressed by tapping between multi-levels and multidimensions on a meta-level, often leading to quite novel and unexpected insights (Cloete 1999). Redressing the imbalances of the past and redistribution of resources on the outer levels remain a socio-economic necessity, but unless the inherent resources of our nation's cultures are tapped and utilised on the inner levels, and on the level of the self, they become reliant on the outer levels while the potential of untapped creative wealth remains dormant during this vital period of transformation. In the meta-frame proposed in this study for example, unity and diversity is considered from a higher epistemological order than merely a relationship between the parts and whole ( Járos 2002, 2001a; Smuts 1926) and from which emerges the consideration of African and Western music education as a synergy of complementary worldviews, methods and values that can lead to the rise of new systems and perspectives that are not culture-bound but transcendent (Müller 2002, 1998b; Járos 2000).

9.2.2 Implications for a systems meta-frame for music education

The purpose and ideals of the new constitution honour both the need for expressing the diversity of all representing cultures, as well as a call for unifying the nation (RSA 1994). Music is an appropriate medium of unity and diversity through which to shape the values embedded in cultural practices, and to inform the aesthetic ideals of the whole system: "[f]or many", "the issue of unity versus diversity is at the heart of discussions about multiculturalism today" (Volk 2004:188). Sharing a similar quest as our neighbouring country, Namibia, "[s]adly, diversity is often seen to be the precursor of divisiveness, rather than being celebrated as a product of human creativity and ingenuity" (Mans 2003:7). In South Africa, a unifying approach has been sought for multicultural music education (Hauptfleish 1998; Primos 1997; Thorsén 1997) such as a dialogue of difference that honours the inter-relationships of a "dynamic multicultural ideology" (Elliott 1995:293), and not by means of standardisation, i.e. by extracting common principles, of different cultures. However, the implications for multiculturalism in this country extend beyond a mere meeting of cultures, of which there are many (RSA 2003a) into deeper epistemological values and assumptions that relate to

5 According to the latest census figures released by Statistics South Africa (2001), population groups comprise Black African 79.0%, White 9.6%, Coloured 8.9% and Indian/Asian 2.5%. The population is also classified according to its eleven official languages as Afrikaans, English, IsiNdebele, IsiZulu, IsiXhosa, Sepedi, Sesotho, Setswana, SiSwati, Tshivenda, Xitsonga and other (unspecified), of a total of 44 819 778 citizens. More information is available on <http://www.statssa.gov.za>.
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worldview and which form the basis for ongoing discourse in African and Western music education approaches (Addo et al. 2003).

African and Western music education. The main systems emphasis of this study maintains that the methodologies of the African and Western approaches to music education reflect complementary qualities and patterns of learning and expression (Muller 2002, 1998b). Considering their dynamic organisational properties in relation to each other can contribute to creating mutually coherent and integrative approaches for the purpose of music education in a more transcended and holistic way. The study derived the following table (Table 9.2) to reflect and to demonstrate some of the systemic characteristics that are complementary, although not mutually exclusive, that emerged during the education development fieldwork period (Muller 2002):

<table>
<thead>
<tr>
<th>Western music methods</th>
<th>African music methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linear and graded learning</td>
<td>Non-linear learning in context of whole</td>
</tr>
<tr>
<td>Sequential progression of activities</td>
<td>Simultaneous processing of activities</td>
</tr>
<tr>
<td>Reductionism and layered knowing</td>
<td>Synthesis and multi-layered knowing</td>
</tr>
<tr>
<td>Measured units of varied content</td>
<td>Varied cycles of repeated patterns</td>
</tr>
<tr>
<td>Learn by means of steps or sections</td>
<td>Learn by means of integrated continuity</td>
</tr>
<tr>
<td>Parts are subservient to a central force</td>
<td>Parts remain independent within self</td>
</tr>
<tr>
<td>Multiple score per single player</td>
<td>One player per note(^7) or per pattern</td>
</tr>
<tr>
<td>Performer and listener divide</td>
<td>All participate in a sense of community</td>
</tr>
<tr>
<td>Expected outcomes</td>
<td>Emergent outcomes</td>
</tr>
<tr>
<td>Learning is product focused</td>
<td>Learning is process focused</td>
</tr>
</tbody>
</table>

Table 9.2 African and Western music methods

The innate music properties above reflect the relationship between the respective cultural contexts. Methods of scientific observation inherent in the Western worldview tend to impose on life a separate and structured perception while in African and other indigenous cultures life is viewed with a spirit of constant renewal, entering into direct participation with that which is being perceived. In a universe in which time turns in a circle, and in which the ceremonies of renewal are the continual obligations of the people, the emphasis is always upon balance and harmony as opposed to progress, advancement,

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\(^6\) The terms African and Western have been discussed in chapter two as part of the musicological debate of pluralism versus singularity. In this chapter, African and Western are discussed in terms of their systems epistemological principles in representing their respective comprehensive worldviews which are termed synergistic complements in the context of this study, namely from the perspective of unity and diversity.

\(^7\) This interlocking phenomenon is especially prevalent in the Tshikona reedpipe music of the Venda peoples in sub-Saharan Africa (Blacking 1976)
and accumulation (Peat 1994). Often information is relayed through animated storytelling, dreams and rituals or ceremonies richly imbued with metaphors and images from which one draws one's own personal and contextual account of what the experience may be illustrating. The way in which we know is integrally linked with and made accessible to us through the worldview we are employing in our attempt to know (Bateson 1985; Keeney 1983). Our experience is therefore culturally informed (Blacking 1976). Although physics acknowledges the ability to influence phenomena under perception through the act of participation (Talbot 1996; Bohm 1980; Bohm & Peat 1987), in which knowledge is an integral part of the flux of process which may lead generally to a more harmonious and orderly approach to life as a whole rather than a static and fragmentary view (Bohm 1980), Western views still perpetuate a predominantly separately comprehended reality against the African view which exists by way of a continually co-perpetuated relationship with reality (Mudimbe 1994, 1988; Shutte 1993). Identity is posited as the metaphor for self-in-context regarding diversity of cultures in transition to a new global world culture, i.e. of the cyberculture and communication revolution (Fitzgerald 1993).

While discussions have ensued around African and Western music as contrasting cultural epistemologies (Westerlund 1998), or their unity sought in correspondences “to be found in the many cultural commonalities in the musics” (Mans 2003:49), their worldviews are considered complementary on the basis of the systems epistemological distinctions proposed in the framework of this study. Although it can never be entirely possible to accurately assimilate reality and experiences from another culture’s, or for that matter from another individual’s, standpoint, it should not prevent one from cultivating the necessary epistemological means to understand and accept concepts across cultures: “[t]he deepest order of change that human beings are capable of demonstrating is epistemological change” (Keeney 1983:7). This challenge lies at the heart of the South African cultural transformation process. Systems epistemology re-directs us to a way of viewing the world according to an inter-connected web of patterned relationships (Bateson 1985). It presents a suitable premise for developing new educational methods from which innovative and compatible cultural modalities and experiences can emerge. By integrating African and Western methods of music in a mutually coherent way, they can attain systemic value, that is, the emergent outcome of the two approaches working synergistically within their complementing attributes. This does not imply fusion or mediocrity as purists may infer. Rather, it presents a flexible way in which to mediate multiple cultures as a means of seeking reconciliatory approaches without the respective cultures losing their inherent identities. It does not disregard, nor aim to resolve, the continuing comparative ethical and aesthetic dialogues, but merely presents the systems principles through which to reflect these issues from a meta-perspective so that some of the prevailing misperceptions may be reconsidered and dispelled. As Agawu states, “[t]here is no simple formula for determining the net result of Western and African musical influences, because there are affinities as well as differences” (Agawu 2003b:8).

Multiculturalism in music education. The globalisation process, accelerated by the commercial and digital industry, has resulted in the migration of diverse world cultures into the music class. It
necessitated statutory adjustments to democratic education practices, such as can be found in the recommendations laid down by the Tanglewood Declaration (Britton et al. 1968) of the United States of America, to include music perspectives of all cultures. However, there are different approaches to what is collectively referred to as world music in the field of music education, each with its own meaning and philosophical underpinning, summarised below (Nzewi 2003, 1991; Palmer 2002; Reimer 2002; Volk 2002; Campbell 2001, 1990a; Lundquist et al. 1998; Boyce-Tillman 1996). Of the various descriptors in terms of the relationship across cultures, multiculturalism appears to be the most frequented as an effort to represent their meeting points. Multiculturalism is commonly referred to as the experience and appreciation of different cultures and their value systems. Some prefer the interaction and relationships between cultures to be termed intercultural and those sub-aspects within a single culture as intracultural, as for example within African culture or within Western culture, although yet others regard each of these to be multicultural within their own right. Bicultural means being versed in two musical cultures. Enculturation is used to define the process of traditional modes of learning i.e. learning within one's own culture, also sometimes referred to as ethnocentricity, whereas acculturation means learning about or being influenced by another culture. Everyone is immersed in a culture and therefore to be a-cultural is not thought possible. There has even been mention of deculturation as with the influence of Western colonialism, missionary ventures, urbanisation, commercial modernisation and scientific technology on traditional African culture. Transcultural is considered an abstracted view as the experience of being part of a transcendent universal culture. And cross-cultural is still the general term to indicate working across cultures, while the word culture is in itself ambiguous, generally portraying a way of life. Elliott maintains that music in itself consists of a diversity of musical cultures and is therefore inherently multicultural (Elliot 1995). A generation exposed to multiculturalism as part of musical change has ushered in the increased need for music educators to move beyond monoculturalism to become more bicultural or bimusical and multimusical in their profession (Volk 2002; Hood 1983) which inevitably leads to a “multiple musicality” usually by acquiring practical instrumental study with associated methods and values in a foreign culture (Campbell 2002b:243). While there is “no definitive concept of multicultural music education” (Volk 2004:11), the term, however, remains controversial in South Africa.

**Multicultural music in South Africa.** The restrictive and detrimental influence that Western bias exerted over African musical philosophy has resulted in a controversial situation regarding the term multicultural in South Africa, since “the concept of multicultural education formed the basis for separate development under apartheid” (Oehrle 2002:73). Much of this concerns the relationship that has existed between so-called formal institutionalised and informal traditional music education practices. Both African and Western music practices in their conventional contexts can be termed formal. In Western musical art forms, performance practice is usually initiated in the school context whereas education in African musical practice is associated with its origin in traditional settings. The
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term informal education is misleading here, which in the national education system refers to experience obtained beyond institutionalised education settings according to the assessment criteria registered with the National Qualifications Framework (RSA 1996b). While logistically valid, such cultural misrepresentations may themselves have assumed the licence for African art forms to become engulfed by and inculcated with Western principles.

In truth then, the so-called multicultural music class is an inauthentic and artificially construed device in formal education in that it is abstracted out of context. In fact, much of what is expected from the new integrated music and arts curriculum is already embedded within the indigenous musical arts milieu as a holistic practice (Herbst et al. 2003). Here, African arts become subsumed within each other although each bears its own formal procedures for performance. These practices have remained consistent over generations and have been organised according to communally accepted institutions and principles (Nzewi 1991), oftentimes the bearers and preservers of social mores: "[t]hat creative and presentational frameworks remain consistent over generations demonstrates that musical arts education in traditional Africa is very formally reasoned and structured" (Nzewi 2003:20). The educational value of music in the African culture therefore lies in the participation and interaction in the life of a community on which members "impose a formal institutional or social framework" in a specific context of meaning (Chernoff 1979:125). Essentially, the integrative nature of music involves the community in a more dynamic way, continually recreating the tradition rather than affirming a fixed set of sanctioned concepts or beliefs. It shows a "concern for life as a process of becoming, rather than as a stage in evolutionary progress" (Blacking 1973:55). The main function of music in African education can therefore be shown "to involve people in shared experiences within the framework of their cultural experience" (Blacking 1973:48). The above raises many questions regarding the current state of music education in formal schooling settings. It also indicates emergent possibilities in attending to efforts involved with reconciling African and Western approaches that can have far-reaching consequences beyond merely stabilising multicultural music classes, namely by exploring the integrative nature and function of music in the broader methodological context of education philosophy, pedagogy and practice. In other words, the implications for music education can have a far deeper impact than merely managing and co-ordinating its curricula strategies. In new dialectic contexts it addresses fundamental human rights issues that evolve around worldview and making meaning (Nzewi 1997).

9.3 Music-making as a means of mediating meaning in education

Implications for a wider reading of music as a means of meaning-making in education, with particular pertinence to the South African situation in terms of African and Western values and worldviews, are considered below. Meaning in music and education inevitably evokes different philosophies and methods and in certain respects may appear to resemble education by means of music proposed by Elliott (Elliott 1995). Swanwick refers to the meaning of music as a dynamic and dialectical
relationship between intuitive knowledge and analysis: "intuition and analysis interactively allows us to construct meaning and create experience of quality" (Swanwick 1994:160). In this text, a meta-contextual perspective embodying systems epistemological principles is offered that reflects on the educational role of music in the meaning-making process. This involves the musical matrix of the metaphoric self being enlivened by mediated music-making experiences that have educational value beyond merely educating music. It addresses the question of creativity and musicianship and the integrative value of music within education. Possibilities for a transcendent approach to music-making are explored.

9.3.1 An integrative approach to music and education

As with the various meanings of music, many different attitudes abound regarding its position and integrative status in education contexts. While some music educators in South Africa have welcomed the compulsory inclusion of the arts and culture category alongside other disciplines in the new national curriculum there are those who question the diffuse nature and diminishing value of amalgamating the different arts disciplines. The nature of the learning outcomes in the curriculum allows for them to be attained through any of the art forms, which does not secure a place for any of them and emphasis falls on educating culture, rather than the arts (Klopper 2005). The new national curriculum offers possibilities for the development of skills, knowledge and values in cross-curricular settings that reflect more integrated learning contexts in earlier phases while specialisation and subject choice occurs in the later phases (RSA 2002). Those educators who reject the notion of relinquishing the quality of music across the curriculum feel that the integrity of music education should be preserved even if it were to be threatened with extinction. This is in agreement with Elliot who argues that "[o]ur future does not lie in schemes designed to make music education less musical i.e. to save school music programs by integrating music across the curriculum or by submerging music in multi-arts courses" (Elliott 1995:305). On the contrary, it is felt that music education should secure its integrity by deepening students’ musicianship and creativity and to demonstrate that music is achievable, accessible, and applicable to all. While noble ideals, one ponders on the adverse effects such a perception may have in sub-Saharan African societies whose aesthetic and educational excellence is vested precisely in such an integrative philosophy (Kwami et al. 2003). It may even account for the decline and eventual demise of music education as African countries experience a discontinuation of music in their schools (Naudé 2002). Across Africa, there is a renewed interest in seeking integrative values regarding preservation and transmission of cultural heritage (Klopper 2003) initiated by the Pan African Society for Musical Arts in Education (Pasmae) which is affiliated to the International Society for Music Educators (Isme) and The International Music Council (IMC) as well as the United Nations Educational Scientific Cultural Organisation (Unesco) commission to enhance and promote musical arts education throughout the continent of Africa (Herbst 2005a, 2004; Herbst et al. 2003; Flolu 2000; Mans 2000; Opondo 2000).
Regardless of a new national integrative curriculum policy, the conditions of music education in South Africa remain precarious (Herbst et al. 2005). These are perpetuated by tertiary and in-service training practices not reflecting a systemic and inter-related approach to education and to integrated music and arts training, and in the lack in provision of adequate retraining in multicultural methods for teachers groomed in the old dispensation (Klopper 2005; Rijsdijk 2003; Joseph 2002). The meta-frame of this study provides an opportunity for reflecting and exploring the nature of integrating music and education contexts in a multi-levelled and multidimensional way. It reveals the different ontological and epistemological implications implied in the meaning of creativity, music-making and self-making in African and Western mindsets and contexts that to some extent share in the prevailing debates between aesthetic and praxial approaches to music education (Regelski 2003; Reimer 2003, 1989; Elliot 1995).

Musicianship and creativity. In a general manner of speaking, music education concerns itself with music-making across genres, cultures, different contexts and mediums of practice, while music appreciation and other related theoretical issues form explicit or implicit part of a comprehensive approach (Choksy 2001). Its meaning resides in the purpose for which it is employed. Making music in African traditional practice is based on the principle of “inclusive participation” as an act of “spontaneous and practical artistic performance” (Nzewi 2003:28). Personal responses are informed by contextual values in a communally generated and shared experience (Nzewi 1991). Each music activity is a co-created or re-created event specific to predetermined ideals guided by the particular performance contexts. Creative originality is accommodated within the frame of this mutually agreed process that remains the public property of the community. The African value system allows for self-recognition of accomplishment and self-regulation in areas requiring revision or enrichment that reflects an interactive and reciprocal response of a supportive rather than competitive nature. Creative talent is viewed as a gift that remains in service to the community and one is not expected to exploit it commercially for personal gain. These attitudes to traditional practices have changed as a result of exposure to Western values and modern lifestyle resulting in a search for new modes of presentation while yet others are disappearing from re-creative memory (Nzewi 2003, 1998, 1991). The concept of creativity is synonymous with music-making, including co-creating or re-creating events on a collective level, and standards of practice are dictated by contextual circumstances. Music belongs to and is available for everyone although some may engage more attentively than others.

In the Western approach to music-making, creativity is measured against the technical and artistic development of instrumental skills including the voice, that reflect the degree of musicianship attained by the performer on a particular level of practice, usually associated with individual giftedness. These views have been invested primarily in debates between the aesthetic (Reimer 2003, 1989) and the praxial (Elliot 1995) dimensions of music-making. According to Regelski, aesthetic philosophies tend to abstract music values and meaning to the status of high art as an idealised and often disembodied intellectual pursuit where one gains knowledge from external sources, while developing uniform
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standards regardless of individualised experience (Regelski 2003). Praxial philosophy on the other hand, involves personalised values and meaning that is embodied in lived experience and active music-making contexts that are culturally relevant (Regelski 2003). For Elliott, making music by matching one’s personal level of musicianship with the appropriate level of musical challenge, results in self-growth and musical enjoyment. A high degree of musical challenge without matching musical skills leads to anxiety and frustration, while a high degree of musical skill without adequate musical challenge leads to disinterestedness (Elliot 1995). Creativity is promoted through active music-making as a form of procedural knowledge that propels the self to higher levels of complexity. The purpose of music education is thus “to enable learners to achieve self growth, self knowledge and musical enjoyment by educating their musicianship in balanced relation to musical challenges with selected practices” (Elliott 1995:129). Creativity does not arise automatically “by spontaneous insight” but by achieving know-how towards its end product (Elliott 1995:229). This attitude to creativity predominates in Western musical art contexts (McPherson 1993). It pertains primarily to performance of set pieces and related activities that augment these skills such as improvisation which calls for the need “to develop a wider variety of musical abilities than mere technical skill and an ability to read and perform music from notation” (McPherson 1998:407).

Western music aesthetics draws the experience into an inner validation as an autonomous domain of artistic expression requiring contemplative reflection while African music practice is an integral part of everyday life, not divorced from its collaborative community expression so as to be abstracted into a separate art form. The Western way relies on explicit technical and theoretical training that is notation-based i.e. visual modes of processing. In the African way theoretical aspects of music-making are implicitly embedded in practice that depend on transmission via the ear: “[i]n societies where music is not written down, informed and accurate listening is as important and as much a measure of musical ability as is performance, because it is the only means of ensuring continuity of the musical tradition” (Blacking 1973:10). The question arises as to how to reconcile these two worldviews in a mutual music education system especially in the context of the South African situation. This study investigates a transcendent systems approach that embodies unity and diversity of African and Western music principles as a means of making-music.

A transcendent systems approach to music education. The transcendent approach presented in this study emerged from the expressed need for a unified view within which to accommodate diversity amongst cultures and to develop an integrative paradigm for music within education. It is transcendent, not in the sense of an impersonalised universal idealism, but in its ability to move beyond and embody individual meaning in relative contexts as part of an ongoing holistic continuum between them, mediated by systems principles. In this respect it joins in the prevailing discourse on universality versus individuality and makes contributions with regard to the use of the music elements as trans-cultural archetypes and metaphors to mediate this unity across diverse cultures.
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Universality versus individuality. Different interpretations of this concept have elicited varying responses, some contradictory. There are those who call to abandon Western principles when engaging in African music practices, posited as pluralist contextual thinking against universal colonial criteria: “[i]f a universal theoretical view is searched for, it needs to find a solution to the pluralist practices so that no universal criteria are established” (Westerlund 1998:576). Other views express the need “to establish a contextual set of values that will allow a certain degree of music interchange between cultures” (Boyce-Tillman 1996:43). Another approach in terms of transforming music is visualised as a dialectical one, i.e. instead of an either/or, or a both/and situation, a dialectic this-with-that is suggested (Jorgensen 2003). Elliot proposes amongst his various models a dynamic multiculturalism to minimise the tendency of imposing “a universal musical belief system” on all music (Elliott 1995:293). The search for reconciliatory approaches appears therefore to be centred on finding a balance between the universal and the contextual. Certain contextual approaches advocate initiating an accumulative music knowledge base from a learner’s own culture-specific context in the early years (Nzewi 1998; Elliott 1995); thereafter, gradually making ones way into other musical cultures and eventually adopting a world music approach and specialisation on tertiary level (Nzewi 1998). The accumulative approach however, does not address multiculturalism in the formative years and may appear in a formal South African context to revert again to segregated music education. A collaborative curriculum model towards social sharing (Swanwick & Tillman 1986) presents a developmental spiral through several levels of music knowledge to which a systemic and a transcendent level were later added (Boyce-Tillman 1996). Of the contributions seeking synthesis in multicultural thought, has come the argument that “it is reductionistic to assume that universal principles govern all human conduct in every particular situation, or that each dichotomy is resolvable into a polarity constituting the logical grounds for synthesis” (Jorgensen 2003:53).

The above-mentioned approaches appear to emphasise the contextual or pluralist side and what is referred to as universality applies on a contextual and diversified level within the meta-frame of this study. The transcendent approach proposed in this study, on the other hand, seeks resolution between universality and individuality, unity and diversity as situated along a dynamic continuum by embodying both as a greater whole without compromising each other. It is not the same phenomena as either/or, or both/and on only one end of the spectrum e.g. a unification of both African and Western music on the contextual level of common principles for instance. It makes a distinction between unified universal principles and unification of their diversified individualised contexts perceived as uniformity. Uniformity should not be confused with universality which in this study refers to transcendent archetypes, universal to all cultures. For Plato, these archetypes “are not conceptual abstractions that the human mind creates by generalising from a class of particulars”, rather, “they possess a quality of being”, in their own reality (Tarnas 1996:6). The archetypal idea “comes into and out of being in a multiplicity of concrete forms, yet simultaneously remains transcendent as a unitary source” (Tarnas 1996:10). Blacking speaks of the creative and aesthetic force of music and the arts as
transcending cultural and societal contexts (Blacking 1995). Perhaps this is similar to viewing music processes themselves as having their own values so that by working with them one can transcend the restrictions of habituated contexts to develop creative imagination beyond specific cultures (Chernoff 1979). One way that this may be achieved, according to the study’s meta-frame, is to identify the universal music archetypes as transcendent essences embodied by the music elements in their many culture-specific appearances.

The music elements. What makes the transfer and regeneration of music possible over the ages and across cultures in whatever guise are the basic elements of music namely rhythm, melody, harmony and timbre or tone colour (Tracey 1948). They lend to music an infinite re-organising and expressive ability and hence a degree of autonomy and invincibility. The collective globalisation process continues to stretch the ability of music to travel and re-interpret itself in an endless number of contexts. Sub-Saharan Africa for example has become interested in appropriating and domesticating Western resources and influences, whether adapted or imported directly, for its own cultural usage in as much as the Western world is interested in drawing African culture into its own practices (Nyairo 2004). Ancient and modern texts re-mix as ethical concerns (Agawu 2003b) increasingly give sway to open source facilities and services in which information and materials gain independence and become freely available to all in the global community. Indeed, the territorial origins of music are losing their contextual significance over time as musical processes themselves become accepted on their own terms: “music has a life of its own” (Swanwick 1988:112). Music education may have a role to play beyond cultivating specific cultural identity and intercultural knowledge, i.e. in recognising the transcendent qualities of music and the universality of its principles in the global culture. This perception of a “universality of musical practice” (Kwami 1989:132) is reflected in the cross-cultural use of music elements: “elements of music sound are universal, it is the difference in their human and cultural rationalisations that determine music cultures” (Nzewi 1998:470). Again, the act of delineating music elements on the contextual level is a Western construct since they do not have separate African terms and are not abstracted as such in African music philosophy (Agawu 2003b). In African music “knowledge of the nature, the structural inter-relationships and interaction of the elements as well as objects of music making in the musical arts is gained as a heuristic process as well as a holistic experience” (Nzewi 2003:29). In the meta-framework of this study they are represented as a musical means to transfigure universal principles across culture-specific worldviews and contexts and can be used as an effective means to dialogue and mediate African and Western music perceptions and practices. The music elements should not be viewed as mere “sound materials” that form the basis of analysis, but which involve us in the metaphoric process (Swanwick 1999).

Rhythm. Rhythm in the meta-frame represents the archetype of the world creation closest to the physical body in terms of generating movement demarcated in physical time and space. Its perception in Western music is often associated with the quantitative sense of measure as a tempo-regulating mechanism whereas in African culture the rhythm is usually non-linear and cyclic and is also closely
Implications for an integrative paradigm in education associated with dance by deploying the whole body: "[r]hythm is felt in the body", music embodies sonic dance and dance is visual music (Nzewi 2003:29). Rhythm is the element that has become most strongly associated with African music. The Western notion of African rhythm is often seen as being immensely complex in relation to the other elements that appear less utilised, whereas the African notion of Western rhythm is seen as relatively simple structurally while its musical complexity is enriched by the other elements. The complex sense of African rhythm seems to Westerners devoid of a main or unifying beat: "[w]e consider the rhythms complex because often we simply do not know what 'the' rhythm of a piece is" (Chernoff 1979:42) and this “coherence of the conflicting rhythms is thus based upon a kind of tension which gives the music its dynamic power” (Chernoff 1979:53). These rhythms unfold simultaneously in an interdependent way so that “one rhythm defines another” (Chernoff 1979:52) or put another way, “articulation of one pattern presupposes the other” (Agawu 2003b:92). It is this so-called “conflict of the rhythms” (Chernoff 1979:114) that, according to Nzewi, “has been consistently misconstrued as cross-rhythm” (Nzewi 1998:474). For Nzewi, they remain in complementary and not conflicting relation to each other i.e. by retaining their individuality in the communal context without crossing the other and he prefers the term inter-rhythm. Nevertheless, it may merely refer to a crossing of the Western listener’s attention between the two or more rhythms rather than theoretical. The main characteristic of African music is thus that different rhythms engage and communicate with one another so that “no single rhythm can provide complete focus, and in this sense there is no central point of unity” (Chernoff 1979:157).

Harmony. Harmony in the meta-frame represents the archetype of the world creation aligned with the emotions in which dynamic tension and release by the resultant tonal voice combinations create consonance and dissonance relative to cultural perceptions. In terms of the elements of music “we might say that the one with the greatest colonising power is harmony” which in Western music is identified especially with the diatonic squareness of functional tonal harmony (Agawu 2003b:8). Here, the melody is seen as a carrying voice with harmonic accompaniment in vertical dimension, the voices being subservient to a central sense of tonality. Traditional African music presents many viable polyphonic and contrapuntal alternatives to the hierarchic soprano-alto-tenor-bass texture of Western four-part harmony (Agawu 2003b). African musical harmony is derived from the concept of male and female voice types and their tonal variations regardless of gender, choral or instrumental music i.e. in terms of the principle of harmonic concord based on the balance of high and low (Nzewi 1991). The “high, harmonic voice is a male voice, and the low voice is female” and, in three part harmony, a middle voice is inserted between the high (male) and low (female) bearing in mind that “harmonic procedure in Africa is primarily conceived lineally”. What this means is “that a thematic gestalt is harmonised horizontally as a unit, not as independent notes in vertical thought” and, that themes matching the fundamental theme “could attain independent thematic completeness in isolation but complement one another in simultaneous performance” (Nzewi & Galane 2005:77). In the choral music practices of sub-Saharan Africa “[c]ultural harmonic idioms are the intuitive legacy of
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everybody by virtue of musical enculturation" (Nzewi 2003:29). Some Western harmonic influences appear in their four-part guise in some forms of African music such as with the township marimbas that have originated their own Afro-diatonic system (Dargie 1998).

**Melody.** Melody in the meta-frame represents the archetype of the world creation most closely associated with the mind and the process of thinking and speech. Western melody reflects the singular breathing contours of linear singing phrases with pitch inflexions. In African music “[t]he melodic forms in traditional music are largely configurations of the call and response principle” (Nzewi 1991:109). Because of the cyclic nature of African music, the lengthy and exhaustive linear exploitation of this element often appears lacking although it is neatly nestled in with the rhythmic element. To this effect Nzewi uses the term “melorhythm” to denote the tonal pitch inflexions in rhythmically driven music as found for example in tone drum rows (Nzewi 1991:57). This is similar to tuned, definite pitched drums such as the timpani while not considered a melodic instrument, or indefinitely pitched multiple high-medium-low drum settings in Western and other cultures although the distinguishing feature between definite and indefinite pitch may differ from culture to culture.

**Tone.** Tone in the meta-frame represents the archetype of the world creation most closely associated with intuitive and spiritual principles. It has for many ancient wisdom traditions working with overtones formed the basis of a raised consciousness in which the senses are withdrawn from the world. This is epitomised with the sounding of drone chants as single tones that are manipulated for their multiple overtones (Hykes 1991), also found in the overtone richness of gongs (Heimrath 1994). Tone colour or timbre deals with quality of sound and is that factor which differentiates one sound type from another. It can also be seen as widely diversified sound colours on a contextual level as reflected with Western instrumental practice that become classified according to their textural groupings such as strings etc. Or, it can refer to the tonal quality of a single sounding instrument such as the overtones in the single-stringed varieties of the African musical bow which relies on a system of parallel shifting between two adjacent tones, also referred to as a tonality shift (Dargie 1998).

The transcendent systems approach mediates the relationship between the universal concepts or archetypes as organisational principles of music in general and their particular cultural features as distinctive and distinguishing personalised imprints in specific contexts. This representation of unity and diversity is therefore not to be confused with seeking uniformity across cultural practices on a contextual relative level. And the music elements as they are presented here are not intended to be pursued merely for the purpose of reducing concepts to musical analysis “as though music is merely an illustration of something else” which is often the case when selecting music excerpts to demonstrate their characteristics (Swanwick 1988:147). The systemic nature of the music archetypes as transcending culture-specific applications constitute the generic basis for exploring an approach to creativity and music-making that can extend across cultures as explored in the study’s fieldwork.
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An approach to making music across cultures and across the curriculum.

The musical archetypes metaphorically inhabit the whole of music, self and life. Within the meta-frame this serves to show how they relate across cultures depending on practical or pedagogical perspectives chosen. It indicates for example the basis on which the qualities of African and Western music can be seen as complementary (Table 9.2), a systems term of relatedness rather than referring to similarities and differences, and can be illustrated in experiences showing how they unify and diversify in an endless number of settings. There is no separately formulated uniform or fixed predetermined perspective for universal and contextual traits, since these remain relative. The systems approach allows opportunity for them to cohere in a mutually shared meta-conceptual environment by remaining dialogically and dialectically flexible in ongoing discourse. There is ample place for detail and analysis to emerge where appropriate since "(t)he dialectic nature of mind-set affects every area of music education" (Jorgensen 2003:142), every culture's viewpoint having due place in the chosen context of presentation, without needing to resort to overt universal reductionism in a generalised approach.

It is the position in this study that today's school-going youth are continually exposed to a music and rhythm culture beyond formal education settings (Green 2005) and are likely to perceive the classical era as "one music among many" in the curriculum (Green 2002a:27). Young musicians educate themselves from a variety of "informal music learning practices" (Green 2002b:5). The media, cultural groups, arts festivals, recorded artists and raves are their most admired and direct influences and "music education has had relatively little to do with the development of the majority of those musicians who have produced the vast proportion of the music which the global population listens to" (Green 2002b:5). In Africa the older practices of music such as ritual and healing are declining, responding to contemporary environs: "(t)his typical dissociation of the urban elite from 'own' cultural traditions is common in southern Africa, as people strive to embrace traditions they regard as global and hence more 'developed'" (Mans 2003:31). Different cultural perspectives and approaches, and the divide between formal and informal educational settings are becoming increasingly complex (Bresler 2002; Bresler & Ardichvili 2002). It is not always practical or even possible in the South African climate, to imagine adequate (re-)training of teachers to sustain formal music education practices in their classes now that music specialist posts have diminished. In most cases, music is not taking place at all (Herbst et al. 2005). A possible approach that was explored in the study's fieldwork journey, founded on the prevailing conditions and restrictions in music education (Muller & Le Roux 1997), serves to relieve general educators from relying on formal training to keep music alive in their classes (Muller 2002). It recognises ways in which general educators can become familiar with basic mediation techniques that bypass the necessity to acquire a particular level of technical skill and practical musical experience in order to make music accessible to their learners and which can also provide trans-cultural enrichment for all music educators. This refers, of course, to active music-making experiences and not merely listening or music appreciation activities. Many who assume they have no musical ability may find that they are capable, if given adequate opportunity, to acquire
playing experience (Sloboda 2005; Welch 2005; Howe et al. 1998). The fieldwork approaches consisted of practical percussion-based activities and creative mediation approaches to explore how music-making can become accessible across cultures and in different education contexts.

As a transcendent systems approach the music archetypes provide a meta-contextual level of conceptual organisation through which the music elements can be explored as a generic method of creativity. It forms an ideal matrix of possibilities in practice, which is explored through the mediator maps as a guide for particular context applications. Its effectiveness resides in the appropriateness of activities that are pattern-based, easily co-ordinated and memorised in the body, adaptable and transferable across different grades and curriculum contexts. In many respects the approach follows in the footsteps of other class percussion approaches initiated with Carl Orff's Music for Children, Amuako's bringing of Orff back to Africa, and the Jacques-Dalcroze method, which centres on using co-ordinated body movement as a means to comprehend and interpret music (Amuako 1971; Keetman 1950; Jaques-Dalcroze 1964, 1915). Dalcroze's eurythmics has developed a relation with African musical arts approaches (Phuthego 2005; Kongo & Robinson 2003). Also featured is the era of percussion-based classroom compositions or soundscapes (Schafer 1969, 1965; Self 1967). In the South African situation however it has become necessary to re-conceptualise music education to accommodate African and Western worldviews and methods in the curriculum. The Western-based graded systems and classroom approaches are no longer adequate. African children's music for example, is not always easier than that of adults and they do not necessarily learn simpler music first (Blacking 1967). The approach to creativity proposed in this study draws on the complementary systems principles tabled above (Table 9.1 and Table 9.2) and promotes the use of generic percussion-based patterns to mediate integrated music activities meaningful to all cultures from whence culturally specific projects and experiences can be initiated. Rather than exclusively replicating culture-specific repertoire in a product-based fashion, it is possible to simulate process-based cultural patterns for classroom use “while maintaining its essence” (Anku 1996:76). The emergence of a global rhythm culture that draws on indigenous styles is evidenced in the popularity of rhythm and drum circles (Levine 2005; Hull 1998; Flatischler 1992). The difference between teaching, which can induce crisis mode, and facilitation ⁸ of open drum or rhythm circles, shares some of its pedagogy with the method proposed here. The figure below (Figure 9.1) depicts the proposed mediated creativity approach as seeking a balance between cultivating quality of sound techniques and related music knowledge with pattern-based cycles learnt in free-flowing fashion on different levels of choreography and complexity, reminiscent of the relation between musicianship and musical challenge presented by Elliot (Elliott 1995), or of instruction and exploratory encounter (Swanwick 1988) within the context of a systems synergy of complements involving the whole self (Járos 2000).

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⁸ From a personal meeting with drum circle master Arthur Hull in Copenhagen, Denmark on 07 July 2001.
Educators who are part of such a learning context will eventually experience their world in a profoundly different way (Keeney 1983). Even after education reform around the world in which music is to be taught by non-specialist class teachers, there is a need to strengthen teachers’ confidence since there is still a reliance on specialised subject training requiring expertise and performance ability (Holden & Button 2006; Smit 2003). The following insert has been reserved for this passage to demonstrate the effect that such a subtle shift from formal music teaching to creative music mediation can have in a class setting. It is taken from reflective feedback notes in a participant’s journal from the Creative Mediator Programme belonging to a qualified music teacher from a formerly disadvantaged background, now heading an arts and culture department at a multicultural primary school (Muller & Kleinschmidt 2004):

I have found the course exceptionally inspiring and challenging. It has opened up a new way of teaching for me. The course has taught me to think broader and not always depend on music terminology when explaining concepts to my pupils. I have been applying what has been taught to us at sessions, in class, and have found that the pupils respond to this method of teaching very well. Much more room is provided for pupils to be creative, resulting in them taking ownership of their creations. Interestingly enough, I found that the pupils who studied music at school did not have an unfair advantage over those who did not, in fact, they were limited by their knowledge, and those who did not study music, were able to be a lot more creative. As a project to see how the concept works in a general class, I worked with a class teacher merely as a facilitator guiding their thinking. A connection was made between what they did in class and music, which they enjoyed tremendously. There was a fantastic response from the children. The results were excellent! I feel that in using this method of teaching, music becomes much more accessible to the broader community of children. The effectiveness of creative mediation does not depend on how much finances a school has or how many instruments they have, and can therefore flourish in the poorer communities as well. Teachers who are not musically trained are also not scared away from including music in their teaching, because they are intimidated by the jargon used. It is extremely user-friendly and I have no doubt that this course will be instrumental in changing the perceptions of class teachers, namely that music is only for the specialist teacher. It does have value for both the specialist teacher and the class teacher. It does, however, require a paradigm shift in the way music is perceived in schools at the moment. Without a doubt, creative mediation works!
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An interesting point noted with cultural group experiences of class settings in the Xhosa-speaking schools showed that they have a similar formal image in their approach to performance as found with students in Western music observed by the teacher above. While there is generally more explicit and spontaneous embrace of participation in African music, it is centred on culturally-embedded performances that are specific, known by all and which informs the disciplined choreography of its practice with which they all naturally fall into synchrony (Müller & Kleinschmidt 2004). An equal shift is required from these groups to generate new patterns of creativity outside familiar contexts that can be infused with their other class work i.e. beyond performance of existing repertoire, and which can stretch the meaning of music across the curriculum touching on all areas of education and self in the learning process. This approach to creativity is not intended to replace other methods or specialised study of music, merely a way of expanding possibilities and for increasing accessibility. It is intended as a holistic experience in its own right although the tendency of linking music to demonstrate other disciplines such as percussion and acoustics in science (Arnold & Lehmberg 2002) is not discouraged.

9.3.2 Music as map of the self in mediated education contexts

Returning again to the Pythagorean-Platonic cosmic monochord, visualised by Fludd as linking the microcosm to the macrocosm, and the human system to music, we are dealing with relatedness (Gouk 2000a, 2000b). The meta-frame makes visible the connectedness via metaphoric images as music archetypes, transcendent symbolic representations of universal qualities which constitute the embodiment of the whole being. Metaphorically the self is composed of music as a reflection of the musical world creation and “the vibratory movements of musical notes and phrases combine to express meaningful patterns or shapings, called archetypes, which reside in a super-physical field of thought and feeling” (Lingerman 1983:139). The music archetypes act as templates for the physical, emotional, mental and spiritual self which is inextricably linked with the inner and outer world through the central sense of self. Partaking in music brings forth this world of the self and “music is psychologically woven into the fabric of human discourse” (Swanwick 1988:155). As an integrative paradigm the music archetypes embody the ideal-conceptual and actual-physical domains and the symbolic-mythological and logical-scientific views. Each of these perspectives provides valid modes of inquiry that differ in the questions they ask and the ways in which they frame their responses. In this system of ideas the principles of music are revived for their deeper meaning and mystery. This touches every aspect of being in a holistic way and connects self with the greater pattern of life. In the African healing cosmology, ngoma drumming “is not just symbolic or metaphoric of something, it is that something” (Janzen 2000:61). By enlivening the archetypes, music serves a higher purpose and can have a transformational effect on self and society. For transformation to take place “it is necessary to ask probing questions, challenge the status quo, and have the courage to re-vision education in genuinely novel and imaginative ways that meet the present information age” (Jorgensen 2003:62).
Music metaphor as a map of the self. Since the creating deity directs the whole universe according to musical principles, the human being is seen to reflect the same resonant harmonic proportions (Heninger 1977; Cornford 1937). Kepler, whose ideas represent “a remarkable intermediary stage between the earlier, magical-symbolical and the modern, quantitative-mathematical descriptions of nature”, regarded the planets as living entities endowed with pre-established harmonies that touched upon the human form (Pauli 1955:154). This, he claimed could be enlivened by the archetypal images as the continuous creation of a pattern that exists from all eternity “so that that which formerly was hidden in the soul, as under the veil of potentiality, now shines therein in actuality” (Pauli 1955:163). For Jung the archetypes are an ordering principle of the psyche i.e. “formal factors responsible for the organisation of unconscious psychic processes” (Jung 1955:29) and act as a connecting synchronicity between matter and spirit, the one reflected in the other. Music, as a pattern and archetype for the ordering of the human system, extends the self into a universal cosmology similar to the physics concept of continuity with all that exists (McTaggart 2003). African traditions regard music as “the integrative resonance of which the human body and soul are composed” (Nzewi 2002). Leonardo da Vinci’s diagram of harmonious human proportions shows the relatedness of the human body to the archetypal idea of squaring the circle (Figure 9.2), a mythological combination of the circle as symbol of the heavenly orbits and the foursquare firmness of the earth in the human form. It suggests in terms of symbolic patterns “that we unite within ourselves the diversities of heaven and earth” (Doczi 1985:93). The discipline of human geometry, their continual proportions reflecting the properties of music, evolved to demonstrate principles of symmetry and harmony in the human physiology.

Figure 9.2 Leonardo da Vinci’s diagram of Vitruvian human proportions (in Doczi 1985:93)
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The meta-frame of this study requires a further conceptual shift to evolve this concept to include the levels and dimensions between the ideal and actual self, each carrying a holocosmic imprint of its complementing other within and which remains in dynamic relation with it as a greater whole embracing the timeless eternal and the time-space reality within the self. Although the concepts are not grouped in the same sense, polarities presented by June Boyce-Tillman’s dynamic model of the self depict similar emergent relationships such as the balancing of unity and diversity as creativity, and the balancing of embodiment and transcendence as wisdom (Boyce-Tillman 2000). By infusing these principles within the whole self, the higher and healing principles of music that are not readily recognised can be given due value in education.

Music, healing and the self. In ancient times the relationship between music and healing was considered inseparable. The word heal is derived from the Anglo Saxon ḥāl which means to make whole, also affiliated to holy (Skeat 1993). Music was the connecting force between the human being and the greater cosmos. For many philosophers and mystics, music is the cosmos (Cornford 1937; Khan 1996; Berendt 1987). Music healing is therefore viewed as a means of restoring a sense of connectedness and wholeness within self, community and the cosmos (Achterberg 1985). In African philosophy, a musician of outstanding ability working wisely in the context of healing is considered “one who puts himself in touch with spiritual forces” to access and express these deeper connections (Blacking 1973:48). The healer develops inner senses and knowledge of the sounds to become receptive to ancestral spirit guidance. Our ancestors intuitively knew the healing power of music as evidenced in shamanic practices of different cultures. Here the healer journeys beyond the world of the senses, often with the aid of vigorous drumming, attaining information to restore a sense of balance, meaning and purpose in life (Diallo & Hall 1989). There is a preference for aged drums whose sound is believed to have become enriched with animated spirit voices and infused with ritual properties that are thought to enhance trance states across the worlds (Nzewi 1991). Messages are usually relayed by way of symbols and metaphors. In African traditions healing involves whole community support and music convenes participation to engender the required spiritual energy for the person to recover (Nzewi 2002). Scientific knowledge of the physiological and psychological effects of music on the mind and body has been increasing in the Western world over the past decades (Campbell 1997). The qualities of music with its temporal and spatial ordering have the ability to play on the physiological and psychological constitution and assist in attaining greater health and awareness: “there are different musical works that will appeal specifically to certain areas in your make-up” (Lingerman 1983: 13). However, because of its magical transcendent quality there is still some hesitance to incorporate the innate powers of music healing practices since “the effects of music are not necessarily ‘provable’ by the process of scientific thinking but are ‘knowable’ on several levels of human understanding” (Crowe 1991:111).

The meta-frame of this study makes some attempt to reveal the relationship between the transcendent and the embodied life which can be made knowable by opening the self to all levels and dimensions of
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experience. The music archetypes share an affinity with the healing qualities across different cultural contexts and practices (Gouk 2003a). Ritual drumming, for example, creates the opening to transcendent experience by means of a driving rhythmic component that dominates the reticular activating system in the brainstem with incoming sensory stimulation. This has the effect of suppressing certain functions, such as verbal, in order to activate other non-verbal modes of perception and information processing (Achterberg 1985). Harmonic modulations, their vertical shifts and implied tonal pattern combinations can create perceptual movement that becomes receptive to other mental states and sensations. These occur, for example, in the trance-like intlombe divination music of Xhosa traditional healers (Coppenhall 1991; Hansen 1982) and in the shifting tonal harmonics of umrhube and the uhadi or mhakwanani calabash musical bows (Plaatjies 2005; Dlamini 2004; Madosini 1998). Melody has been known to create subtle shifts in mental states with the flowing rise and fall of fluctuations in frequency. These are found inherent in Indian ragas and Gregorian chant, for example, (Gilmor et al. 1989). Overtone-enriched sounds speak through instruments like the gong, known in ancient times to have been imbued with magical properties that bring health and prosperity (Heimrath 1994; Blades 1975) and forms of sacred chanting that induce contemplative and meditative states of mind by means of their resonant quality (Hykes 1991; Weeks 1991, 1989; Wilson 1991, 1989). While healing rituals remain sacred and even secretive to some cultures, modern day research into music medicine and music therapy as emerging professions have revived the ancient knowledge for the West by exploring effects of music and sound on the mind, body, emotions and spirit. The expansion and interest in contemporary complementary healing modalities has made sound therapies widely accessible to the general population while music and sound techniques are becoming commercially available for self-healing (Barnett 2003; Hull 1998; Goldman 1993; McClellan 1991; Campbell 1990b; Watson & Drury 1989; Beaulieu 1987; Garfield 1987; Hamel 1986).

Music thus directly impacts on the self and can serve to restore wholeness and balance in life as well as a sense of meaningful connectivity with the community and cosmos since music is energy and energy is music, and interchangeable with matter (Eagle 1991). For the Ancient Greeks "[health, in fact, was an 'attunement' depending on a due blend of opposites" (Burnet 1924:50). Ancient cultures mediated the link between the higher and lower worlds by means of deities such as with the dichotomy expressed in Apollo and Dionysus. Jung equated Apollo with inward-directed intuition and Dionysus with outward-directed sensation (Jung 1971). This dual nature, a so-called paradox of the Orphic mysteries, is present within the self as we constantly fluctuate between the concrete preoccupation of the physical senses and the abstract higher interests of the intellect. In mythology, the muses were each assigned to a particular celestial sphere where they sounded their distinctive note under the direction of Apollo, their union exemplified in the resulting harmony: “unity arose from multeity without destroying its component parts” (Heninger 1977:179). The act of creativity has been considered the

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Refer to the International Association of Sound Therapy, online directory of the emerging profession of sound practitioners worldwide, <http://www.soundtherapyassociation.org>.
meeting point between the two flows, that of Apollo and Dionysus, of matter and spirit, each transformed by the other in a continuous act of sustained creation. The scientific basis of physical creation indeed shows that the atoms of our body were composed in nuclear synthesis within the heart of the stars (Bohm & Peat 1987) so that we hold the memory of the cosmos within, and each of us therefore stands at the centre of the universe: “[y]ou are not in the universe; the universe is in you” (Chopra 2003:161). Hence ancient teachings regarded music as a vehicle for higher learning (Cornford 1945). Music education should be intended, not merely to produce a musician, but also for educating the whole human being (Mitchels 2001). Music metaphor can make certain insights available to us by means of transference of qualities to other contexts that invite a different response, i.e “the experience of seeing and responding to one thing in terms suggested by another” (Scruton 1997:85). While aesthetic philosophers may continue to question whether “there is anything, other than itself, that music means?” (Scruton 1997:118), the “[m]etaphorical process lies as the heart of creative action, enabling us to break new ground, making it possible for us to reconstitute ideas, to see things differently” (Swanwick 1999:10). Embodied experience of speculative music metaphors can make the higher purpose of music visible to us in the context of the self since music reaches and enlivens all complex human processes (Muller et al. 1994). The metaphoric schema awakens value and meaning that inform the physical, emotional, mental and spiritual aspects of self as reflected below:

**Music and the physical self.** Studies have shown that the whole body responds to sound frequencies: “[w]e hear and ingest sounds with more than our auditory mechanism. The whole body responds to sound and consumes it whether we consciously hear it or not” (Halpern 1985:38). Direct correlations have been drawn between music and the genetic and biochemical functions of the body (Kidson 2004) so that “the body itself is intrinsically musical” (Dossey 1992:55). The philosopher Novalis suggested that every disease is a musical problem and the more we create environments in which the vibration patterns are in harmony with those coded into our being, the greater our potential for health (Godwin 1987b). Many regard healing with music, sound and harmonics as the medicine of the future (Goldman 1993; Campbell 1992b, 1991; McClellan 1991). The symbolic music metaphor is also reflected in the physiology of the ear in which sound is transmitted from the grosser outer airwaves to the finer inner electrical chemical waves. The spiral cochlea progressively transmutes the passage of frequencies as transcendental open curves starting out from a single point and ending in infinity, logarithmically “transforming the frequency of oscillations in sounds or music into intervals” (Berendt 1988:43). The acoustic laws of sound and harmonics are thus replicated in the actual disposition of the human ear and we are “led to discover the physiological reason for that enigmatical numerical relation announced by Pythagoras” (Helmholtz 1885:5). Research into the effect of sound on the brain and body shows that high frequencies are more difficult to activate in the dense inner apex of the cochlea, requiring more effort to process, resulting in the enrichment of neural functioning or a cortical charge (Tomatis 1991). The cochlea-vestibular system as an organ of hearing and balance supplies a rich network of blood and nerve vessels to the brain and body (Gilmour et al. 1989). Music and movement
are therefore closely linked to the ear and function of balance in physical reality (Storr 1992). There are distinctive benefits of music engagement from an early age, even in foetal responses (Woodward 1992), in facilitating neural connectivity (Tomatis 1991; Wilson 1989) to enhance the whole body. There are also many measurable affects of music directly on the physiology such as on respiration, metabolism, heart rate and brain waves (Campbell 1997, 1992b).

**Music and the emotional self.** Those who have experienced the music-making process know the state of creative flow in which attention and awareness become directly absorbed with the action (Elliott 1995) and emotional engagement provides ongoing motivation (Goleman 1996). Attaining a precise relation between this state of flow and the demands of the activity can render it effortless since “a key to flow is that it occurs only within reach of the summit of ability, where skills are well-rehearsed and neural circuits are most efficient” and a minimum of energy is expended so that “[i]n this state even hard work can seem refreshing or replenishing rather than draining” (Goleman 1996:92–93). It is when demands outreach ability that anxiety, frustration, fatigue or boredom can set in as too many distracting signals are activated. A state of creative flow and emotional wellbeing is thus a prerequisite for learning, which music can facilitate if in healthy balance with musical skills (Elliott 1995). By motivating learners to develop different competencies with which to engaging in finding flow and the positive states that typify it, they are drawn into learning and higher levels of attainment (Gardner 1993). Regulating our emotional intelligence so that it facilitates rather than impedes the thinking process is thus essential to perform more effectively (Damasio 2000; Goleman 1996). Music, when in flow, greatly assists in attaining feelings of wellbeing and exhilaration, while regulating stress and reducing anxiety (Campbell 1997; Jourdain 1997).

**Music and the mental self.** An integrated state of mind is the key to higher learning and creativity (Herrmann 1995) and different intelligences should work together to encourage whole brain learning (Gardner 1993), found particularly in accelerated or super-learning approaches (Rose & Nicholl 1997; Ostrander & Schroeder 1981). Different brainwave patterns have their own characteristic frequency gateway to higher mental function (Berger 2002). Each frequency is suitable for stimulating different types of learning activities, and alternating active mental states with quiet reflective time can strengthen the process of creative thought (Herrmann 1985) and bring about coherence across the whole brain (Petsche & Etlinger 1998). All mental states can be enhanced by the aid of music (Jensen 2000; Lehr 1998; Webb & Webb 1990; Wilson 1985) as music has been shown by studies in cognitive neuroscience to be an inherent part of brain function across cultures (Gerhold 2006). The field of neuromusical research reveals an understanding of the effects that music has on brain activity patterns and networks to enhance consolidation of information (Gerhold 2006; Altenmüller et al. 2002; Demorest & Morrison 2000; Hodges 2000; Petsche & Etlinger 1998). Music especially, can have a strong influence on hemisphere integration, which occurs when there is good co-operation between the two dominant hemispheres of the brain. The state of relaxed receptivity characterised by the alpha frequency is mainly responsible for integrated learning states, which induces a calm yet alert condition.
conducive to cross-lateral brain and body induced movements. The effect of two different sound signals for example creates binaural beats that are an emergent non-linear frequency following response to which the brain begins to resonate (Swartz & Taylor 2004; Lane et al. 1998). This provides information to the net-like reticular activating system in the brainstem responsible for altering internal and external stimuli, a natural function of homeostasis that actively regulates body functions and internal equilibrium and brain-body cross-over: “music more fully involves brain functions in both hemispheres than any other activity” (Lehr 1998:56). Music is also effective in stimulating learning states by means of imagination and mental imagery (Bonny & Savary 1990; Jourdain 1997) and increasing memory throughout different fields of study: “[t]he more connections that can be made in the brain, the more integrated the experience is within the memory” (Campbell 1992a:25). Music can aid learners to each develop their own natural rhythms and cycles of learning (Brewer & Campbell 1991).

*Music and the spiritual self.* Achieving an integrated state of mind can bring about a feeling of unity within self, community and cosmos as reflected in the spiritual intelligence (Zohar & Marshall 2000). “Intuitive knowledge is not a form of day-dreaming but an active way of constituting the world. It makes possible all other ways of knowing” (Swanwick 1994:28). In this state, oscillations occur across the brain, believed to form connections in the cortex where advanced information processing occurs, and in the thalamus, a lower brain region where complex relay and integrative functions are carried out. The thalamus has been perceived as the brain’s equivalent of a threshold between the known and unknown, the material and the spiritual (Nader 1995). These spiritual states can be facilitated by music. By creating harmonic beat frequencies as a superimposed spiral effect on binaural brain beats, the mind can become entrained into highly organised coherent patterns and states of expanded awareness (Goldman 1993). This synchronising effect on the mind is known to be responsible for creative insight, focused concentration, deep calm and enhanced perceptual ability. Some “have deemed it expedient to inspire a type of music calculated to augment spirituality by means of knowledge” (Stewart 1987:109) i.e. by using sound waves to transport the mind to higher states of consciousness where profound transformation can take place (Halpern & Savary 1985). These higher states of being have in ancient times been aligned with cosmic consciousness which is experiencing a contemporary revival of the celestial theme of the music of the spheres (James 1998; Stephenson 1994; Tame 1988; Berendt 1987; Godwin 1982) and which now, in scientific terms can be verified on the terrestrial realm by correlating countless relationships between the laws of harmonics and natural physical phenomena across a wide field of disciplines (Cousto 1989, 1988; Haase 1989a; Kayser 1950, 1946) since modern-day physics uncovered the musical orbits of the macrosphere within all aspects of life: “the entire microcosm is replete with harmonic concurrences” (Berendt 1987:69). On a spiritual level, musical self-awareness can serve as vehicle to access deeper layers of knowing: “the deepest experience of music becomes a spiritual sacrament” (Lingerman 1983:35) and which, while it usually remains concealed to us, can be accessed (Hamel 1986). Music can assist in restoring the symbolic-
mythological ways of knowing along with the logical-scientific and, in so doing, mediate deeper connectedness with life to form an implicit part of how we know ourselves and value our existence.

**The transcendent and embodied musical self.** "Musical experience is no mere response to an aural stimulus, nor is it in any straightforward sense an act of symbolic representation" (Bowman 2004:47) but is seen "as a way of knowing" (Swanwick 1999:7). Whether creating a musical body or a body of music (Spitzer 2004), the concept of embodied mind and bringing forth a world as a systemically inter-connected body-mind web of physiological and experiential processes (Lakoff & Johnson 1999; Varela et al. 1993) has entered the domain of music and the arts as a means of embodied knowing (Bresler 2004a). It beckons new inter-disciplinary conceptual and experiential frameworks, as well as theoretical and research designs (Bresler 2004b). Education approaches, following on from Dewey (Dewey 1958, 1938), regard "experience as central concept of philosophy and affirm the body as organising core of experience" in developing a pragmatic aesthetics and a theory of philosophy as an act of lived experience (Shusterman 2004:51). Here, "[t]he arts, unlike the traditional academic areas, are an arena in which the body is central to the process of inquiry and constitutes a mode of knowing" (Bresler 2004b:9). Since the rise of multiple intelligence theory (Gardner 1993), the arts have gained recognition and status as an intelligence but Bowman asks us to question what we mean by intelligence lest it remain "the kind of cognition construct it always has been: abstract, mental, cerebral, disembodied" (Bowman 2004:29). We should not privilege mind over bodily experience which is also a form of meaningful knowing. The unity of body and music provides schemata that are not merely representational or significant for intelligence on a mental level, but an embodied participation or lived experience (Bowman 2004).

In Africa, there is no mind-body dichotomy: "learning is situated in physical experience, not dissociated intellectual pursuits" (Mans 2004:80), nor is there an individual and collective divide: "the body individual is a reflection and confirmation of the body social" (Mans 2004:83) and "[m]usic and dance act as mediating forces in the understanding and appreciation of ‘other’, in effect, removing ‘otherness’" (Mans 2004:92). In southern Africa, educators have tended to move away from their cultural knowledge, mostly through feeling inadequate in teaching environments and by turning towards contemporary art forms, but "[u]ntil these holistic modes of learning are reassigned the earlier values they carried, body as a means of learning and knowing is likely to remain underrated" (Mans 2004:93). "When the mind-body dichotomy is overcome and we utilize a thinking body, a whole realm of teaching and learning possibilities opens up to us" (Mans 2004:90). In education contexts, however, "the possibilities of embodied knowledge are not engaged by the school arts curriculum" (Davidson 2004a:210). For Bresler, "[t]he body/mind connections relate to the inside/outside interaction" (Bresler 2004c:127; Bresler 2002) and in child-centred education "[i]t can open students up to awareness of the outside world, from shapes and movements to the inner worlds of energies and qualities of experience, combining ways of doing with ways of being" (Bresler 2004c:148).
The metaphysics of the self. The musical metaphor of the self as conceptualised in this study includes the personal or individual self, the relational self, i.e. self in relation to the world with its social and cultural dimensions and the collective or global notion of self as proposed in emerging theories of the self (Sedikides & Brewer 2001; Gallagher & Shear 1999). However, it also reclaims the cosmic or metaphysical self in an attempt to reunite it with the whole self by releasing it from former recondite connotations and to make it available in education contexts.

The metaphysical self in education. The notion of a metaphysical self in this study is one that recognises the ideal self, as a transcendent universal or unity self, in mutual relation and co-creation with an actual self, as an embodied personal or individual self. This emerges as a conscious central sense of self participating simultaneously in the ideal and actual realms of existence rather than being passively played upon. Education contexts that honour experiential modes and methods inclusive of transcendent ideals may bring new value to the self in education. Scholars of Dewey who have revived his metaphysics of the self, for example, acknowledge his sense of unity of experience as a necessary basis on which to provide a coherent philosophy of experience for education. This serves as a central guiding idea to derive clear conviction of the ends, i.e. the connections between empirical and ideal, which Dewey believed were intrinsic to each other and therefore ideal ends could be studied empirically: “ideals enter into experience through the mediation of reflected thought” and thought in turn influences reality, i.o.w. both have existential consequences (Cunningham 1995:178). Dewey’s vision of metaphysics as scientific inquiry therefore suggests that “metaphysics could be reconstructed as part of self-referential experience, and could provide experience with enhanced understanding of nature and of the nature of experience” (Cunningham 1995:179). Such a method of scientific inquiry would prevent some aspects of existence from being devalued in favour of others or, from the tendency to reduce diversity to sheer uniformity. Importance is placed on everyday experience in the hope of providing generic traits that could be used as a conceptual basis for such inquiry. It is specifically the “rates and modes of interaction of these traits, and their proportion in any specific existence” that interested Dewey, such as found in complementary pairs (Cunningham 1995:180). He also spoke about the qualitative immediacy of every event, not only material events, but including also ideals and purposes, as being unique and also continuous with every other event. This teleological account is contextual rather than eternal, involving mediation of reflection in which meanings are potentialities developed by the application of intelligence to experience, and in which essences, rather than being dictated by a transcendent realm, are reconstructed through the interaction with an event.

It is with this in mind that the ideal self, a transcendent universal or unitary self, realises its true nature by being both an agent for personal values as well as playing a part in the greater whole: “self-realisation is the individual aspect of the realisation of a larger whole” (Cunningham 1995:182). The ideal self is thus a working ideal developed within and for the sake of practice, and the continuing flow of activity that is the evolving self exists only at the present moment as a process. Dewey avoided the view that educational ends developed outside the self and wanted learners to have a role in realising
their intrinsic capability with the self as "an emergent phenomenon" active as a relatively enduring organisation of habits (Cunningham 1995:187). The key to understanding the composition of the self is continuity, and the realisation of intrinsic capacity. Learners' capacities as potential activities are not measurable and can only be evaluated retrospectively in which actions cohere into an integral series of related events within the entire event of one's life: "[a] learner's potentialities are open and indeterminate" and not everything can be actualised, therefore decision has moral consequences for the future (Cunningham 1995:190). Dewey's long-standing conception of self-realisation was reconstituted as an essentially aesthetic criterion with the unification of the self as a process rather than an end-result or a self waiting to be discovered. The ideal ends of the emerging self are not predetermined by the actual character or attributes of a learner: "the plethora of possible directions constitutes a field of potentiality from which the moral agent must select ideal ends" (Cunningham 1995:190). By holding the self beyond the scope of psychology Dewey brings it into the realm of inquiry and education.

Music and the metaphysical self. The musical metaphor of the self serves to show the harmonic relationship between the self and the cosmos. Thus the mental shift that is expected to occur through the meta-frame proposed in this study is achieved by abstracting music from its linear progression of time-bound elements and contexts, and to embody their transcendent universal archetypes. The metaphoric schema, or conceptual maps (Colman 2003), demonstrate and mediate this analogical method for aligning music with abstract concepts. It renders the music consciousness capable of tracing a matrix of multi-layered and multidimensional systems wholeness in direct connection with the underlying principles of music. In this way music becomes aligned with, and enlivened by, archetypes of consciousness that are not necessarily accessible by scientific thinking alone but can be made equally real by mythological accounts of the same phenomena i.e. they "arise from combinations of frequencies and patterns that resonate equally for the physicist as for the metaphysicist, albeit in different worlds" (Stewart 1987:18). The intention is not to value one method against another but to illuminate their relatedness as a higher order of meaning made possible by the systemic and unifying metaphors of music. By this method the inner or spiritual and outer or material benefits of music become equally accessible. Their coalescence and mutual resonance, or attunement, creates a bridge between worlds that may become more prominent in future music and worldviews (Stewart 1987:30):

our science reveals more and more of the depths of material existence, and the musical models of the ancient cultures may one day provide the basis for new areas of experiment, models of the universe, or communication with states of being, or self-aware beings, which we cannot at present comprehend. This is not an ignorant reversion to superstition, but a mere suggestion that musical models can act as carriers of signals into dimensions which may not be accessible through any other practical means. As the patterns of musical emissions are said, traditionally, to carry the imprint of the original Word, or creative impulse, or origin of being, they are used metaphysically to act as a universal language that transcends all spaces, times and events.
Closing. The global world is becoming a shared responsibility of the values of all cultures, to restore itself as a collective community. Education processes can foster greater respect and understanding between cultures, the desired ideal of which is not to compete but to co-operate and integrate with the whole without losing a sense of self. This in turn affords the individual an expanded creativity by bringing different worldviews into consciousness. Music as well as “education ought not to be a closed system but a facilitative enterprise that draws attention to ideas and processes that exist in the wider world beyond” (Swanwick 1994:164). Music is a suitable mediator in this process of reconciliation and mutual discovery and this study supports the belief that “all the ways of knowing lie within each individual, and that they can be validated through music-making” (Boyce-Tillman 2000:13). In the meta-frame music connects with self, the community and the cosmos. The metaphoric music archetypes are universal yet they are considered differently in cultures around the world. One can conceptualise them as abstract principles unifying the internal values of music but also defining the specific cultural values and aesthetic organisations mediated in diversified contexts of meaning.

Making music across cultures emphasises experience from within the other culture’s perspective rather than merely learning about them. The process of active engagement, preferably in direct contact with members of other cultures, requires that we open up to other ways of knowing: “[a] changed disposition allows us to get an inside glimpse of another people and their music” (Palmer 2002:33). This experience can lead to a profound sense of healing in society and transformation within self in which “our sense of reality is forever changed” (Palmer 2002:35). It would be a misfortune to regard transformation and development by imposing Western standards on African values (Amoaku 1998:25):

Africa, indeed, is at the crossroads and must choose its path of development and growth. On one hand Africa must move with the rest of the world, share the great advancement in space-age technology, and become an integral part of the global village by conforming to conventional norms and wisdoms. On the other hand, however, Africa must not sacrifice those centuries-old traditional values whose potency has been tested and proved effective as the repositories of the psyche and the soul of the continent. Africa must be able to blend the old with the new and, if it fails to do so, this continent with such diverse human, cultural and material resources will be doing mankind one of the most unforgivable injustices of our time.

The system of ideas and mediator guide proposed in the meta-frame of this study recognises that African and Western worldviews and methods have a great complementing value that has universal relevance beyond the South African situation. Reflected here on a meta-contextual and trans-cultural level as “an internal dialogue of higher order abstracting” (Keeney 1983:45), the study has aspired towards deriving a coherent perspective of inquiry and integrative understanding.
Part E. Conclusion

The final part of this document reviews the research process of this study with regard to its purpose and central theoretical thesis. It shares some of the insights gained in its pursuit to frame the research question and discusses some of the contributions made in theory and praxis with consideration to shortcomings and critical reflection. It closes with recommendations in respect to further research possibilities, and a conclusion. If the ideas offered in this thesis have inspired some, even brief, openings in the minds of its readers, it would have served its purpose.

In search of a revised creation story of the universe. "We need a new story about our place in the scheme of things" appropriate for our times (Reason 1994:14). That is, a story that asserts a wholeness and relatedness between scientific and mythological accounts of our existence, holding a presence with each other (Berry 1988; Wilber 1980; Watts 1963). The evolution of the Western mind has repressed the feminine wisdom principle still active in North American Indian, Asian, African and Eastern cultures (Nzewi & Galane 2005; Tarnas 1996; Allen 1992). In African culture, "[m]usic is also accorded sacred regard similar to the reverence paid to the Mother Earth Deity as a fecund and effective metaphysical force that sustains human existence" (Nzewi & Galane 2005:73). In the Western heritage, Plato's ideas, which in Greek denotes pattern, are "the fundamental elements of both an ontology (a theory of being) and an epistemology (a theory of knowledge)" (Tarnas 1996:10). Viewing in terms of relationship and pattern "would make an almost total change in the way we live, the way we think about our lives, and about each other and ourselves" (Bateson 1991:311). Only now is the knowledge gained though the scientific era ready to be incorporated into a new system that again takes account of mythical and metaphysical realities. The spiral of human development is leading many back to a worldview not so different from that of Robert Fludd, the magic of which reminds us of "the possibility, indeed the imminence, of a cosmic view free alike from the myopia of materialism and the absurdities of naıve spiritualism" (Godwin 1979:5). Bateson offers a systemic network of ideas as a matrix: "[t]he matrix, after all, is an epistemology, and, specifically, it is a recursive epistemology; at the same time, it is an epistemology of recursiveness, an epistemology of how things look, how we are to understand them if they are recursive, returning all the time to bite their own tails and control their own beginnings" (Bateson 1991:191).
10. Conclusion and the way forward

Although the scientific worldview remains an elegant and seemingly superior influence in humanity’s quest for understanding of life and the search for a pattern of meaning in our greater cosmos, it should not be regarded as an end in itself. It is representative of merely a particular perspective of humankind that relies on methodologies of physical cause and effect to uncover the unknown aspects of reality (Ellis 2002; Harrison 2000; Murphy & Ellis 1996; Appleyard 1993). The dominance of the scientific view has tended to relegate other contributors in the pursuit of knowledge and meaning to inferior positions or to degenerate them into the distant remains of a superseded past. Additional contenders in the description of our universe, however, need to be brought forward for legitimate participation in order to contribute to a perception that may ultimately lead to a more profound and holistic understanding of life. The system of ideas and mediator guide proposed in this study is a modest attempt to synthesise divergent ways of viewing the world into an integrative paradigm. Presented as a metaphoric schema, it merged systems theory as a renewed science of holism with the ancient speculative music of the spheres philosophy, augmented by affiliated disciplines such as embodied philosophy, psychology of the self, quantum physics and consciousness studies, to create a meta-frame of inquiry through which to explore its proposed concepts in the context of education.

That the scientific nature of the research inquiry presented in this document has itself become subjugated to the very methodology it appears to contest is not necessarily contradictory, but an emergent response to the one-sided tendency of the scientific disposition which has paved the way for its own liberation. As the tao way of life in Eastern philosophy would phrase it, when the yang principle has reached its greatest strength, the principle of yin is born within its depths (Wilhelm 1984). In African philosophy this is demonstrated by the ubuntu-principle which refers to the interconnected nature of everything and everyone existing by virtue of the other (Tracey 1994). Signs of an imbalance have been evidenced in the gradual ecological decrease of natural resources and life support systems affected by the advances of science and technology. It has become essential for scientific investigation to assimilate the values of its darker, unknown qualities from which it has diverged, so as to create a new, expanded attitude for the sake of its own growth. This phenomenon is a necessary inherent polarity expressed by any living self-organising system as a symbolic undivided unity and essentially resides within the nature of the human being itself (Jung 1971, 1969b). According to Bateson, all science is an attempt to cover over the vast darkness with explanatory devices. But the purpose of the whole operation is really to discover what parts of the darkness still remain uncovered. Thus there is a deeper, more philosophic purpose, to learn something about the very nature of explanation, and to make clear some of the obscurity in our process of knowing (Bateson 1991): “[t]he crucial problem which science faces is its inability to cope with complexity” (Checkland 1999:59). In the classification of the sciences, “[p]hysics is the most basic science, being concerned with the most
general concepts, such as mass, motion, force, and energy" and "exemplifies most clearly the characteristics of the scientific method" (Checkland 1999:62). Beyond physics, the other sciences, such as psychology, and the concept of consciousness, bring in yet increasing levels of complexity. "Systems thinking is an attempt, within the broad sweep of science, to retain much of that tradition but to supplement it by tackling the problem of irreducible complexity via a form of thinking based on wholes and their properties which complements scientific reductionism" (Checkland 1999:74). Rather than fragment "the world into innumerable dualisms that separate us from the various parts of our experience" systems epistemology transforms our ways of knowing into an aesthetic vision that "views all mental and living process as recursive and complementary" (Keeney 1983:94). And, "the deepest order of change that human beings are capable of demonstrating is epistemological change", which means, "transforming one's way of experiencing the world" (Keeney 1983:7).

10.1 Contributions of this research study

While the contributions of the research journey as a whole have manifested in manifold and inter-related ways, the major distinguishing feature of this study is the recursive co-creation of its theoretical and practical pursuits as represented on a meta-contextual level of research inquiry. The contributions emanating from this meta-perspective are grouped and discussed below as: an integrative paradigm for education, music as metaphor and mediator, the systems worldview, and new paradigm research.

An integrative paradigm for education. The primary contribution of this research study is embedded in its purpose and central theoretical thesis namely, to create an integrative paradigm for education by means of music as a metaphor and mediator. This was achieved by drawing together a meta-frame of inquiry for integrating key concepts into a coherent system of ideas based on a systems approach with speculative music metaphors. It is aimed at mediating a conceptual shift in participants by enabling them with the means to conduct inquiry from within different levels and dimensions of perception that serve to inspire and imbue them with new ideas and insights. From this system of ideas metaphoric maps of the self were derived as a guide for participants to mediate and explore the concepts within their own contexts of practice. The study encourages inclusiveness of ideas as well as promoting an inter-disciplinary approach that can reach across education processes in general. However, greater consideration was placed in making a contribution towards music, arts and culture education by strengthening its position within curriculum practice as mediator of learning methods aimed at educating the whole self and thereby unifying music within the general context of education. The theoretical and practical attributes of this study, the metaphor and mediator aspects, did not follow a design and application mode of research but were recursively co-created and have been retrospectively reflected in this study on a meta-contextual level of discussion.
**Music as metaphor and mediator.** By representing the meta-frame through a schema of inter-related speculative music metaphors, connections between concepts became more visible within the complex multi-layered and multidimensional matrix of systems relationships. Metaphoric conceptualisations promote creative meaning-making processes (Spitzer 2004; Johnson 1987; Bateson 1985; Black 1962) in which deductive, inductive and also abductive methods, that relate concepts in an analogic manner, are employed to mediate ideas across abstract and physical terrains in order to reconstitute them within their relevant theoretical and practical contexts. The key metaphors that contained the parameters within which the ideas and concepts evolved are unity and diversity, and a central sense of self.

**Unity and diversity.** Unity and diversity imposed an all-encompassing schema on concept relationships that elucidated various dual systems perspectives, while simultaneously complementing the macro- and microcosmic perception of the time-space domain of existence with an ideal and transcendent counterpart. The time-space perception has been dealt with extensively by research colleagues in biomatrix systems theory founded on models of physics (Dostal *et al.* 2004; Cloete 1999; Jaros & Cloete 1987). The introduction of a transcendent idealistic component and the resulting amalgamation of the two approaches in this study produce a scientific basis for the integration of the logical-scientific and symbolic-mythological distinction. This delineation is central to the concerns and evolution of main ideas in this thesis in support of a higher dimension of perception and aesthetic order of existence. The most definitive of the dual perspectives incorporated into the frame is notably the sphere and spiral perception symbolised by the cosmic mandala and cosmic monochord respectively, which equips the practitioner with complementary ways of viewing a system. As a sphere, the system is kept in field-like balance by means of its inherent quadrate qualities orientated by the four directions in which the dynamics of reciprocal relatedness ensure systems wholeness. As a spiral, the system maintains flow-like continuity between the ideal and actual, and a sense of connectivity throughout the physical and conceptual nature of existence. These two compatible and complementary views introduce a subtle yet powerful dimension to conventional systems approaches.

**Central sense of self.** Another prominent feature of the transferability of the metaphor in this study is in the representation of a central sense of self that symbolically embeds the individual and universal self one within the other. It reflects the one-in-all and all-in-one principle found in many ancient teachings and in the Renaissance philosophers’ notion of the human microcosm as a model of cosmic perfection (Henninger 1977). This has been translated in contemporary physics as the holocosmic nature of the universe (Talbot 1996; Weber 1989; Bohm 1980) and portrayed as the overtone system in speculative music (McClain 1978). In conventional systems approaches, the self is distinguished by the interaction of its inner properties in relation to the outer environment. In the system proposed in this study the self emerges from the interaction between the inner and outer domains giving rise to a central domain as both a transcendent and embodied self on a higher order of distinction (Keeney 1983). On an ideal level this perception highlights awareness of the inter-connectivity of all life and fosters an appreciation of complex human systems in praxis. Especially with respect to learner-centred
education contexts, the self is no longer perceived in isolation but implies the development of the learner as extending across these three domains. The learning process is consequently rehabilitated from an impersonalised separation between the learner and the learning context. The transferability of universal principles across these domains is mediated as the symbolic universal or higher self with which the lower self continually interacts to co-create its purpose and meaning in life.

The systems worldview. Apart from the systems principles delineated in the passages above, the conceptualisation of the integrative meta-frame in itself, by way of the proposed system of ideas and guiding mediator maps, contributes to the field of general systems theory, more specifically through the biomatrix systems approach introduced by co-researchers (Dostal et al. 2004; Cloete 1999; Járos & Cloete 1987). Directly employing metaphoric thought as a creative mode of research rather than merely as a support for conventional scientific thinking (Spitzer 2004; Lackoff & Johnson 1999; Bateson 1991) provided a unique set of configured principles and concepts, together with new ways of viewing and understanding that have emerged from possibilities explored in education contexts. The systemic nature of the meta-frame ensures that the inquiry process is conducted through a reflexive process that can foreground in-depth detail under specific focus while maintaining a continual relatedness to the whole, without the imposing threat of detaching from the general perspective. This affords the inquirer the ability to distinguish and attend to any level or dimension within the proposed systemic context in an inter-related way from a chosen source of reference. In this way theoretical contributions to the conceptualisation process and practical implications by way of education development initiatives co-emerged and were able to remain in mutual influence and continuous communication, impacting on and illuminating one another (Flood 2002). This self-reflexive method thus perpetually informed the research process by tempering soundness and validity of theoretical constructs with accessibility in practice from which the study gained its most meaningful insights and experiential understanding on a meta-contextual level of inquiry (Alvesson & Skoldberg 2000).

New paradigm research. A further contribution is made by this study in the support of new paradigm research (Reason & Rowan 1981a) in that it infuses perspectives not readily recognised by mainstream methods of inquiry or in systems of education. It acknowledges a greater degree of complexity and relatedness in the world within which we live. And therefore, it employs different modes of scientific inquiry that allow for a direct presence of the metaphoric, mythological, metaphysical and philosophical reflections in the text (Reason 1981a; Mitroff & Kilmann 1978) where they are contemplated for their truthfulness rather than engaging in verification or critical reflection (Sokolowski 2000). The position held in this study is not argued against pre-existing research methodology authorities, but rests in "the creation of novel, innovative viewpoints" as a visionary and innovative mode of research (Reason 1981a:44). In keeping with new paradigm research, the study should be valued in terms of soundness of endeavour (Reason 1988a) supported by evidence that it presented its hypothesis in a way that is logically consistent within itself as well as contextually congruent with other research initiatives relevant to the field (Reason 1981b).
10.2 Some considerations: a critical reflective review

The critiques and shortcomings of this research process relate mainly to the milieu within which it is located. For example, working within the extremes of this study, not only of its wide conceptual domain but also in the stretch between its theoretical and practical pursuits, has entailed the paradox of holism and reductionism that has come under general scrutiny within the systems view. Its major critics contend that systems theory attempts to encompass the totality of life despite the confines of the human mind to be able to grasp it (Woodhill 1993) and that it achieves its all-encompassing universality at the expense of the concrete, specific and substantive (Lilienfield 1978). The biomatrix systems group has responded to some of the criticisms recurring in the general systems paradigm (Cloete 1999; Dostal 1997; Edwards 1996). Indeed, the biomatrix model was developed precisely in response to the perception that general systems theory does not "offer a conceptual space in which to visualise systemic ideas or any kind of conceptual map of how these ideas (i.e. various concepts) might relate to one another" (McNeil 1993a:204). The coherent system of ideas and mediator guide presented in this study is consistent with the systemic principles and assumptions of the biomatrix systems model in that it provides a multi-layered and multidimensional meta-frame within which to contextualise an inquiry, unlike conventional general systems approaches that identify the problem and build an environment of wholes and their parts around it.

While it is so that "any position, perspective, conceptual frame of reference, or idea is a partial embodiment of a whole we can never completely grasp" (Keeney 1983:3), the human mind has the ability to comprehend reality in many different ways and it has been one of the aims of this study to include these different modes in the development of a coherent framework and method of inquiry. Particular attention has been paid to the holistic, intuitive and patterned modes of thinking (Bateson 1985; Reason 1981b; Moustakas 1981) that provide a more aesthetic and unified context of related meaning proposed by new paradigm research but which is not accessible to the traditional requirements of empirical science. The framework uses metaphors, symbols and analogies supported by graphic depictions that inspire and facilitate holistic, imaginative and abstract thinking while clear definition of its concepts and documented data descriptions from concrete illustrative field contexts invite analytic and detailed modes of thinking. Thus a balance is achieved between synthesis and analysis, theory and practice, lineal and recursive epistemologies, aesthetic and pragmatic perspectives, convergent and divergent thinking as well as abstract and concrete modes of inquiry as "different sides of a complementary relationship" with the purpose of uncovering patterns that connect them (Keeney 1983:3). According to the different scientific modes described in chapter one (Reason 1981a; Mitroff & Kilmann 1978), some aspect of this research process is bound to appear deficient from within a particular mode of preference, yet "they are inter-related aspects of a systemic view of knowledge, which must co-exist within the institute of science" (Reason 1981a:51). They encourage connections between inner and outer contexts, circular or recursive modes of organisation in addition
to linear sequence, and the meaning-making opportunities that they hold in the interaction between them for a more complete view that "leaves us with an altered, expanded universe for subsequent investigation" (Keeney 1983:23). While scientific theories can never be absolute, indeed the understanding they give will always be partial because no empirical model can circumscribe within itself the full nature of reality (Ellis 2002), the systems worldview "keeps people in touch with the wholeness of our existence" (Flood 2002:142) even in "knowing that we don't know" by appreciating "patterns of relationship" that join everything together in one dynamic (Flood 2002:143). Music and the arts as embodied experience (Bresler 2004a) "represents a mode of knowledge and a realm of creativity that cannot be assimilated into instrumental reason or articulated factually" (Spitzer 2004:286), and this "aesthetic intuition gives us conscious access to a quasi-natural state of reason, a little like being asleep and awake at the same time" (Spitzer 2004:286–287).

Another long-standing criticism lodged against general systems theory applies to this study as well. That is, the use of selective evidence from various scientific disciplines as well as incorporating analogies of phenomena across different modes of knowledge in its construction of concepts that are claimed to be applicable across disciplines (Lilienfeld 1978). While this is so in this case, the conceptual framework that contains the system of ideas and mediator guide presented in this study was formulated and substantiated in the presence of ongoing cross-disciplinary collaboration and experience. This includes an inter-disciplinary systems research group, numerous advisors in related specialised fields from local universities as well as abroad and a large body of colleagues and participants in various applied settings who reflected and co-contributed from within their professional fields of experience. This often leads to another widespread criticism harboured against systems theory, namely the use of imprecise, ambiguous and often unclear terminology (Robbins & Olivia 1982). The biomatrix systems model had created new terms in response to this statement in order to deliver well-defined concepts in comparative discussions. While useful in the context of academic debate, they need to be adapted, however, for accessibility in practical contexts. The terms developed in the meta-frame of this study are infused with the metaphors from its representing fields that are suitable to both theoretical and practical contexts and can remain implicit where appropriate within situations that do not require comprehensive explanations. It may also be argued that the concepts employed in its composition are not new but familiar. The participating disciplines when viewed separately indeed share many kindred concepts that resonate with universal principles. However, the way in which they have been integrated and contextualised in this study by means of unifying metaphors, is unique and can have a profound effect on the way a system is viewed that differs from other models using similar approaches. It may lead ultimately to a subtle shift in worldview that can result in a practitioner relinquishing previous restricting beliefs. Notwithstanding the queries harboured against support and validation of its worth in theoretical and practical contexts, ongoing endeavours on the level of self-inquiry remain located within the exploratory and heuristic end of the research scale rather than the explanatory (Moustakas 1981). This is an important testimony to the

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nature of the meta-frame in that it does not set out to prove or disprove anything, let alone itself. It merely proposes a consistent set of ideas, concepts and metaphors in order to open minds to different ways of viewing and understanding the world, with particular relevance in the context of education.

10.3 Way forward: recommendations for future research

Follow-up research may be recommended on a twofold basis namely, in terms of further development and validation of the contents and concepts contained in the conceptual framework, and in terms of its application and relevance in education contexts.

**Conceptual framework.** The theoretical basis of this system of ideas justifies further research and exploration of its concepts. Within the systemic context, it is not unusual to encounter that, when working across levels, inter-disciplinary research approaches become activated. For example, the fields of philosophy, physics, cosmology and speculative musicology have contributed to the formulation and construction of ideas and key concepts on a meta-level, whereas cognitive and consciousness studies, whole brain theories and learning methods impacted on the inner level of knowing, while psychology and theories of the self contributed to the central level of the self. Issues pertaining to curriculum policy, cultural transformation and education development as well as experiential and mediated teaching methods became relevant on the outer levels of the system in question. More knowledge of these respective fields as well as further inter-disciplinary collaboration is required to be able to enhance the status of the proposed ideas on and across these respective levels.

**Application contexts.** Although the fieldwork contexts co-contributed to the creation of the concepts in the study, it is suggested that further development via the recursive nature of this systemic approach, which is implied in the Revised National Curriculum Statement (RNCS) of the South African system but not readily known in the field, be extended within education practice (RSA 2002). Systems theory has been applied to education policy development and whole schools development (Dostal 1997), yet more can be achieved by investing the concepts and ideas of this study directly in classrooms by means of further education development initiatives such as in-service training for educators and curriculum advisors. This may involve the development of new methodological approaches as deemed appropriate within different contexts of need. The whole notion of extension of the learning environment across three levels may elicit interesting findings. An appreciation of the complexity and inter-connectedness of human systems needs to be expanded by understanding the patterning of learning processes across levels and dimensions. Again, inter-disciplinary initiatives such as working in close co-operation with psychology-enriched education support services, curriculum developers, community artists, social and cultural workers, would enhance this process. An integrated approach to education is much spoken about in departmental meetings, yet mainly on the level of curriculum administration. There is much potential for extending an integrated approach throughout the whole education system on all levels including the learner, and the meta-frame can mediate this.
The proposed inclusion of arts modalities as a valid medium of knowing, to enhance and facilitate learning across the curriculum, could ultimately serve to relieve music, arts and culture from some of the alienation it has endured in the context of general education provided the integrity of the respective arts remain respected (Burton 2000; Wiggins 2000; McPherson 1997; Gibson 1991). In Africa, “[a]rts experiences are deeply rooted in culture, thus lending themselves to inter-disciplinary connections” (Addo et al. 2003:236).

10.4 Conclusion

The concept of music as metaphor and mediator in creating an integrative paradigm for education has been discussed from within the proposed purpose and methodology of this study, namely new paradigm research as a logically consistent and contextually congruent system of ideas and metaphoric guide elaborated with fieldwork illustrations. The ideas put forward have been presented as a coherent system of theoretical and philosophical constructs in dialogue with practical fieldwork contexts. While it draws from existing fields in systems theory and speculative musicology to formulate its theoretical base, the key principles have been reformulated as a unique and novel schema of ideas and approaches on the metaphors of music and their mediating possibilities. As a researcher, I trust that the concepts presented in this document will make a meaningful contribution to various inter-disciplinary fields by serving as a guide and inspiration to general and arts educators, systems theorists, musicians and other relevant practitioners. It also invites research colleagues in the further evolution of its propositions in the pursuit of truthfulness. Above all, it is hoped that the study will bring a more balanced, holistic and unified understanding to our current fragmented worldview to facilitate communication across personal and cultural divides and to restore the aesthetic, intuitive and metaphoric domains of knowing for a more compassionate and humanitarian dimension to life.

The study opened with the framing of its research question and the nature of our mental disposition when doing so, and arrives back at the point from which it departed, but hopefully with renewed insight and a hint of wisdom. The central hypothesis of the research explored whether music, as metaphor and mediator, can create an integrative paradigm for education. The response rests with the reader. If viewed from within conventional empirical inquiry, such a notion may even seem like a meaningless quest. If, however, we were able to achieve, even momentary, “union of mystic inspiration and empirical fact” (Koestler 1968:521) it could result in “the rearranging” of existing knowledge “in a different pattern” (Koestler 1968:513). That this pattern, or idea, be embodied by metaphoric music schemata as an extended frame of mind is no less valid than those presented by other disciplines, which can change the assumptions about the way we frame our inquiry. Perhaps the only appropriate question which emerges is to what extent we are able to arrive at such an integrative and reflexive mode of inquiry, as an encompassing consciousness, enlivened by music metaphors, so as to restore the educational value of music, and all possibilities which may emanate from it, in the true Pythagorean-Platonic spirit of our ancestors.
All audible musical sound is given us for the sake of harmony, which has motions akin to the orbits of our soul, and which, as anyone who makes intelligent use of the arts knows, is not to be used, as is commonly thought, to give irrational pleasure, but as a heaven-sent ally in reducing to order and harmony any disharmony in the revolutions within us.

Plato, *Timeaus*
References


References


References


References


References


Gold, S (2000). Hey, teacher: a homegrown education programme, based on developing a child’s creative skills, has been hailed as internationally groundbreaking work. *Quality Life Magazine*, April-May, 38-40.


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 Járos, G (2002). Holism revisited: its principles 75 years on. World Futures, 58:13–32.


References


References


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Mentz, H G Cowan & L Muller (1999). Promoting an integrated disposition through critical action research with the aim of facilitating transformation in educational practice. Submitted to the Cognition in Education Project, Executive Committee. Western Cape Education Department: Unpublished project proposal.


Muller, L and M Le Roux (1997). A needs-based assessment questionnaire and survey of music education in Western Cape schools. University of Cape Town and Western Cape Education Department, Subject Advisory Services in Arts and Culture: Unpublished document.


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References


References


References


Appendix A. Fieldwork journey projects and activities

The following is a list of the main projects initiated by the researcher and those in collaboration with project partners during 1994–2004:

<table>
<thead>
<tr>
<th>Name of project</th>
<th>Presented in collaboration with</th>
</tr>
</thead>
<tbody>
<tr>
<td>• An Innovative Approach to Music Education through Percussion</td>
<td>Cape Town &amp; Tygerberg Teachers Centres, Conservatoire of Music, University of Stellenbosch</td>
</tr>
<tr>
<td>• Percussion: Integrated African and Western Music Education in Primary and Secondary Schools</td>
<td>Centre for Education Development, University of Stellenbosch</td>
</tr>
<tr>
<td>• A Percussion-Based Approach to African and Western Music Education: In-service Training</td>
<td>South African College of Music, University of Cape Town</td>
</tr>
<tr>
<td>• A Percussion-Based Approach to African and Western Music Education: Field Research</td>
<td>Research Support Services, University of Cape Town</td>
</tr>
<tr>
<td>• Integrated Arts &amp; Lifeskills Project / Education for Creative Living: The Arts in Lifeskills Training</td>
<td>Teaching and Learning Resource Centre, University of Cape Town and the Western Cape Education Department, Arts &amp; Culture</td>
</tr>
<tr>
<td>• Integrated Cognitive Dispositions and the Wela Project of the Cognition in Education Project</td>
<td>Western Cape Education Department (in collaboration with curriculum advisor in art)</td>
</tr>
<tr>
<td>• Exploring the relevance of Marimba and Percussion-Based African music on the Pedagogies of Multicultural Music Education in Sweden</td>
<td>Åstorp Music Centre, Sweden and the South African College of Music, University of Cape Town</td>
</tr>
<tr>
<td>• A Percussion-Based Approach to Developing Methodologies for Multicultural Music Approaches in the Classroom</td>
<td>Malmö Academy of Music, University of Lund and the South African College of Music, University of Cape Town</td>
</tr>
<tr>
<td>Project Description</td>
<td>Institution</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>• African-Inspired Music for Marimba and other Percussion Instruments</td>
<td>Agder University College (in collaboration with Swedish project partner)</td>
</tr>
<tr>
<td>• African and Western Percussion-Based Music Education</td>
<td>Agder University College (in collaboration with Swedish project partner)</td>
</tr>
<tr>
<td>• The Marimba as a Medium for Multicultural Music Education</td>
<td>Sida-NRF (National Research Foundation), Lund University and University of Cape Town</td>
</tr>
<tr>
<td>• Bringing Education in Harmony with the Systems View of the World</td>
<td>Education Management and Development Centre and Cape Town Teachers Centre</td>
</tr>
<tr>
<td>• Creative Mediator Program</td>
<td>Education Management and Development Centre, Central Metropole</td>
</tr>
</tbody>
</table>
Appendix B. Fieldwork journey funding contributions

The following organizations and institutions have contributed to the funding of projects, either explicitly through funding grants, project partnerships or implicitly through their human and material resources, during the fieldwork journey from 1994–2004:

- Agder University College, Norway
- Amampondo Performing Group
- Artisten Music Academy, University of Gothenberg, Sweden
- Ästorp Music Centre, Sweden
- Biomatrix Systems Group, Cape Town
- Cape Town and Tygerberg Teachers Centres
- Centre for Education Development, University of Stellenbosch
- Conservatoire of Music, University of Stellenbosch
- National Department of Arts and Culture, Science and Technology, South Africa
- Department of Research Development, University of Cape Town
- Education Management Development Centre, Central Metropole
- Edumedia, Western Cape Education Department Resource Centre
- Frederikstad Music Centre and St. Croix Cultural Centre, Norway
- Lisbon Conservatoire of Music, European Union, Yehudi Menuhin Foundation
- Malmö Music Academy, University of Lund, Sweden
- Sida-NRF (National Research Foundation), South Africa and Sweden
- Norwegian Agency for Development Corporation
- President's Reserve Fund, South Africa
- Research Support Services, University of Cape Town
- Rikskonserten, Sweden
- South African College of Music, University of Cape Town
- Spier Arts Festival, Stellenbosch
- Svenska Institutet, Sweden
- Swedish International Development Agency Corporation
- Sweden-South African Partnership, Sida Stockholm
- Teaching and Learning Resource Centre, University of Cape Town
- Western Cape Education Department Curriculum Services
- Zimba Marimba, Lund, Sweden
## Appendix C. Fieldwork journey documented data sources

<table>
<thead>
<tr>
<th>Year</th>
<th>Names &amp; titles</th>
<th>Activity description &amp; context</th>
<th>Type of data source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>G. Jaros, A. Cloete, E. Dostal, L. Edwards &amp; L. Muller: Biomatrix Group</td>
<td>Biomatrix Doctoral Research Group under the guidance of G. Jaros, HOD: Biomedical Engineering Department, Faculty of Medicine, University of Cape Town</td>
<td>Notes from biomatrix meetings</td>
</tr>
<tr>
<td>1994</td>
<td>Muller, L. G Jaros et al. The Effect of Music Frequencies on the Human System</td>
<td>A series of measured tests conducted through the Department of Biomedical Engineering in collaboration with the Department of Electrical &amp; Mechanical Engineering, Faculty of Music &amp; Faculty of Psychology:</td>
<td>All scientific test results: Recurrence Plot Analysis, EEG's, Holographic Frequencies on the collaboration with the Department of Interferometry, Fourier Analysis, Cognitive Science</td>
</tr>
<tr>
<td>1994</td>
<td>Muller, L. Guiding Vision: Re-Conceptualising Music Education in South Africa</td>
<td>Brainstorming sessions with systems colleagues using ideal systems design methods, originating from a life (career) planning exercise in preparation for the new government system</td>
<td>Flipchart notes</td>
</tr>
<tr>
<td>1995</td>
<td>Muller, L. &amp; percussion students, University of Stellenbosch: Re-Contextualising Percussion as an Instrument in South Africa</td>
<td>Full day brainstorming session as lecturer in percussion studies after returning from the 1st International Marimba Competition &amp; Festival with a participating performer student in New Jersey, U.S.A.</td>
<td>Flipchart notes towards guiding vision</td>
</tr>
<tr>
<td>1996</td>
<td>Muller, L. An Innovative Approach to Music Education: African &amp; Western Percussion</td>
<td>Drafted program and presented workshops organised through the Cape Town Teachers Centre, Western Cape Education Department</td>
<td>Program content, planning notes, feedback comments from participants</td>
</tr>
<tr>
<td>1996</td>
<td>Muller, L. A Systems Approach to Music and Human Systems (provisional title)</td>
<td>Register for pre-doctoral studies, University of Cape Town</td>
<td>Research proposal (approved by Doctoral Board)</td>
</tr>
<tr>
<td>1996</td>
<td>Muller, L., H Du Plessis &amp; D Plaatjes. Percussion: Integrated African and Western Music Education in Primary and Secondary Schools</td>
<td>Program co-director, drew up vision &amp; motivation, raised funds &amp; initiated the project as an Academic Development Program with project administration by the Centre for Education Development University of Stellenbosch (CENEDUS)</td>
<td>Reports, programmes, planning &amp; meeting notes, feedback notes, questionnaires, full video coverage, external evaluation</td>
</tr>
<tr>
<td>Year</td>
<td>Event</td>
<td>Description</td>
<td>Notes</td>
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<td>----------------------------------------------------------------------</td>
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<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>1997</td>
<td>Muller, L &amp; N Faasen. Curriculum Support and Subject Advisory Services, Integrated Arts Lifeskills projects (Arts &amp; Culture), Western Cape Education Department</td>
<td>Approach Western Cape Education Department (WCED) to work in closer cooperation. Begin series of ongoing meetings with Subject Advisors in Arts &amp; Culture, convened by Nic Faasen, of Curriculum Services as well as regular attendance and contribution to Learning Area Committee (LAC) meetings in Arts &amp; Culture, including involvement in curriculum policy and development with Farouk Houssain of the National Department of Education</td>
<td>All meeting notes and policy documents and draft proposal documents, letters of recommendation from the department for project motivations</td>
</tr>
<tr>
<td>1997</td>
<td>Muller, L &amp; M Le Roux. A Needs-Based Assessment Questionnaire and Survey of Music Education in Western Cape Schools</td>
<td>Conducted in schools throughout the Western Cape in collaboration with the Subject Advisory Services, Western Cape</td>
<td>Needs based assessment, percussion based questionnaire, schools survey and statistics, music subject advisor's report</td>
</tr>
<tr>
<td>1997</td>
<td>Muller, L. Music Education Lecture Course &amp; Teaching Practice</td>
<td>Devise music education year lectures series to 2nd, 3rd and final year music education students, training &amp; supervision of practical teaching in schools, S. A. College of Music, University of Cape Town</td>
<td>Lecture notes and student's feedback comments</td>
</tr>
<tr>
<td>1997</td>
<td>Muller, L. Practical Music Module</td>
<td>Devise and present a year course for B. Prim Ed &amp; PG final year students at the Faculty of Education, University of Cape Town</td>
<td>Lecture notes and student's feedback comments, questionnaires</td>
</tr>
<tr>
<td>1997</td>
<td>Muller, L. Percussion-Based Music Education Module</td>
<td>Devise and present lecture module to 3rd year music education students, Dept. Music, University of Stellenbosh</td>
<td>Lecture notes and student's feedback comments</td>
</tr>
<tr>
<td>1997</td>
<td>International Society for Music Educators (ISME): Focus on Africa Group – The Durban Gathering</td>
<td>Invited by the ISME organisers &amp; the Norwegian Concert Institute as one of a designated group of music educators in Africa to give a presentation and participate in 'The Durban Gathering' in collaboration with the Music Department, University of Natal 'in sharing your visions, experience, knowledge, viewpoints'</td>
<td>All notes from presentation and participation in discussion, handouts by speakers</td>
</tr>
<tr>
<td>1997</td>
<td>Muller, L &amp; team of presenters. A Percussion Based Approach to African and Western Music Education</td>
<td>Project leader: In-service training workshops for music and class educators, funded by Swedish International Development Agency (SIDA), hosted by the South African College of Music, and administered by the Department of Research Development, University of Cape Town in co-operation with the Western Cape Education Department, 1st year</td>
<td>Progress report, full video coverage, participants feedback, planning notes &amp; meetings with funders, action research journal notes, external evaluation</td>
</tr>
<tr>
<td>1997</td>
<td>Muller, L. &amp; research team. Fieldwork Research: A Percussion-Based Approach to African and Western Music Education</td>
<td>Percussion Fieldwork Research Project with community artists, funded and administered by the Extension Service Committee (ESC), Research Support Services (RSS), University of Cape Town 1st year</td>
<td>Progress report containing all documented 'live' data on video, audio recordings of interviews, transcriptions</td>
</tr>
<tr>
<td>Year</td>
<td>Event Description</td>
<td>Details</td>
<td>Type</td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>1997</td>
<td>Muller, L. &amp; team of presenters: Marimba, Percussion &amp; African Music Program</td>
<td>Device and present a two week intensive program to visiting marimba group from the Ministry of Youth and Sport, Municipality of Walvis Bay, Namibia</td>
<td>Program notes, team planning meetings, full video coverage, participant's feedback comments</td>
</tr>
<tr>
<td>1997</td>
<td>Muller, L. Education for Creative Living: Integrated Arts &amp; Lifeskills Program</td>
<td>Initiated and co-ordinated a program (an outcome of efforts while servicing on the committee of Health for Africa (HFA): Forum for Holistic Health Care in S. A.). Raised funds National Department of Arts &amp; Culture and University of Cape Town and invited two British facilitators from the Institute for Arts in Therapy and Education (IATE) in London; presented a program to teachers through the Teaching and Learning Resource Centre (TLRC), University of Cape Town in co-operation with the Western Cape Education Department, and workshops to various creative arts lifeskills facilitators</td>
<td>Full video coverage, questionnaires and participant's feedback comments, all correspondence and planning meeting notes</td>
</tr>
<tr>
<td>1998</td>
<td>Muller, L. &amp; team of presenters: A Percussion Based Approach to African and Western Music Education</td>
<td>Continuation: 2nd year of in-service training program at University of Cape Town</td>
<td>As above</td>
</tr>
<tr>
<td>1998</td>
<td>Muller, L. &amp; research team: Fieldwork Research: A Percussion-Based Approach to African and Western Music Education</td>
<td>Continuation: 2nd year fieldwork research program at University of Cape Town</td>
<td>As above</td>
</tr>
<tr>
<td>1998</td>
<td>Muller, L. Music Education Lecture Course &amp; Teaching Practice</td>
<td>Continuation: to groups of students, Faculty of Music University of Cape Town</td>
<td>As above</td>
</tr>
<tr>
<td>1998</td>
<td>Muller, L. Practical Music Module</td>
<td>Continuation: to another group of final year students, Faculty of Education, University of Cape Town</td>
<td>As above</td>
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<tr>
<td>Year</td>
<td>Event</td>
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<tr>
<td>1998</td>
<td>Muller, L. Percussion Based Music Education Module</td>
<td>Continuation: fourth year music education students, University Stellenbosch</td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>Hammarkulitskolan seminar with educators &amp; workshops with Amampondo to learners</td>
<td>Linked to the World in the School multicultural music program of the Musikhögskolan Göteborgs, Sverige</td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>Visitation: World Music School Project: Music in a Multicultural School &amp; presentation to percussion students, Musikhögskolan i Malmö</td>
<td>Meetings with Eva Saether and the directors of the World Music School at the Malmö Academy of Music, Lunds Universitet and visits to their programs in the classrooms &amp; joint meeting with the director of the Århus Musikskole, Denmark about setting up world music programs</td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>Visitation: Åstors Kommunala Musikskolan, Sverige</td>
<td>Meeting and presentation with the principal, teacher and youth marimba group, Peta Axelsson and Zimba Marimba Group</td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>Domnérus, L. Svenskt kulturbistånd ger goda resultat i Sydafrika. Folknoten, Sverige</td>
<td>An article on the percussion-based project after an interview</td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>Muller, L. &amp; team of presenters. A Percussion Based Approach to African and Western Music Education</td>
<td>Continuation: 3rd year in-service training program at University of Cape Town</td>
<td></td>
</tr>
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</table>

Appendix C

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<thead>
<tr>
<th>Year</th>
<th>Author(s)</th>
<th>Title</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>Muller, L.</td>
<td>Music for a Humane Society: African and Western Percussion-Based Music Education</td>
<td>Published report</td>
</tr>
<tr>
<td>1999</td>
<td>Muller, L., Mnukwana, N &amp; Hlatshwayo, M.</td>
<td>Interview with team members of the percussion-based project</td>
<td>Transcript of the interview</td>
</tr>
<tr>
<td>1999</td>
<td>Muller, L.</td>
<td>Present a year module to music education students at University of Cape Town based on percussion, systems theory and ways of knowing</td>
<td>All lecture notes and student feedback</td>
</tr>
<tr>
<td>1999</td>
<td>Muller, L., G. Cowan &amp; B Tybosch</td>
<td>Acceptance of Integrated Cognitive Dispositions sub-project of the Cognition in Education Project of the Western Cape Education Department’s Curriculum Support Division</td>
<td>All meeting notes, minutes of clearing house meetings, electronic network communications, circulars, departmental documents</td>
</tr>
<tr>
<td>1999</td>
<td>Muller, L., G. Cowan &amp; B Tybosch</td>
<td>Joint presentation and workshop with the Ctc2005, Cognition in Education project members to community educators as part of the Western Cape Education Department’s in-service training and support at a one day conference on 13 November 1999</td>
<td>Storyboard with mindmaps, photographs, video clips, diagrams &amp; drawings, live music and arts demonstration</td>
</tr>
<tr>
<td>1999</td>
<td>Ainslie, D, L Faragher &amp; N Faassen</td>
<td>Cognition in Education Curriculum Delivery Services, Western Cape Education Department, internal and external evaluation</td>
<td>Evaluation reports &amp; classroom observation</td>
</tr>
<tr>
<td>2000</td>
<td>Muller, L.</td>
<td>Present percussion module to Music Education students, University of Cape Town</td>
<td>All lecture notes and student feedback</td>
</tr>
<tr>
<td>2000</td>
<td>Muller, L. &amp; G. Cowan</td>
<td>Part of the Cognition in Education online component of the Western Cape Education Department’s Curriculum Development &amp; Support Services which included training in online delivery &amp; design</td>
<td>Converting ICD materials for online access, including video clips &amp; photographs</td>
</tr>
<tr>
<td>2000</td>
<td>Muller, L.</td>
<td>Project evaluation feedback report for the period 1997–1999 and all accompanying documents</td>
<td>A compilation and summary of all data sources (refer above)</td>
</tr>
<tr>
<td>2000</td>
<td>Cowan, G.</td>
<td>An evaluation report by Western Cape Education Department Subject Advisor in Arts &amp; Culture (visual art)</td>
<td>External evaluation report</td>
</tr>
<tr>
<td>Year</td>
<td>Authors</td>
<td>Title/Activity</td>
<td>Details</td>
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<td>------</td>
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</tr>
<tr>
<td>2000</td>
<td>Mentz, H, G Cowan &amp; L.Muller</td>
<td>Cognition in Curriculum 2005: The aim of the project is to develop an awareness of cognition in C2005 among teachers and learners in schools in the Western Cape</td>
<td>Published Report by Curriculum Services WCED including executive summary and external evaluation reports</td>
</tr>
<tr>
<td>2000</td>
<td>Muller, L &amp; G Cowan</td>
<td>Joint presentation and workshop demonstrations with the project team. Cognition in Education: Developing a Metacognition about Cognition: Operationalising Critical Outcomes, a two day conference specially designed for the Subject Advisory Services of the WCED – 160 participants from the Cape region</td>
<td>Program and planning notes, evaluation instrument and reflection journals of presenters and participants, documented reports and minutes by the committee</td>
</tr>
<tr>
<td>2000</td>
<td>G Cowan &amp; L Muller.</td>
<td>Write a chapter in an education manual as a follow on from Doing OBE: Part I &amp; II compiled by the Cognition in Education handouts for educators</td>
<td>Printed educational materials, WCED curriculum development handouts for educators</td>
</tr>
<tr>
<td>2000</td>
<td>Muller, L. &amp; P. Axelsson</td>
<td>Article in the Austrian newspaper Die Wochenspiegel, Kommunala Musikskolan, frequent planning and presentation visits to Sweden, 1st year</td>
<td>All notes from planning and feedback discussions &amp; presentations</td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td>Form a cultural exchange project with Astorp Kommunala Musikskolan, frequent planning and presentation visits to Sweden, 1st year</td>
<td>All notes from planning and feedback discussions &amp; presentations</td>
</tr>
<tr>
<td>2000</td>
<td>Muller, L. &amp; G Cowan</td>
<td>Cognition in Curriculum 2005: The aim of the project is to develop an awareness of cognition in C2005 among teachers and learners in schools in the Western Cape</td>
<td>Published Report by Curriculum Services WCED including executive summary and external evaluation reports</td>
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<table>
<thead>
<tr>
<th>Year</th>
<th>Authors</th>
<th>Event Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>Muller, L &amp; D Plaatjies</td>
<td>Present a two week program to music educators and students of the Åstorp Kommunala Musikskola with additional workshop visits and concerts at schools and music centres, including educators from other teacher training centres</td>
<td>Full video coverage, program content &amp; planning notes, participant’s feedback discussion flipcharts</td>
</tr>
<tr>
<td>2000</td>
<td>Muller, L and a team of fifteen African musicians, A Percussion-Based Approach to African and Western Music Education</td>
<td>Workshop and lunch-hour concert presented to students and lecturers of the Malmö Musikhögskolan Lunds Universitet, Sverige</td>
<td>Video coverage, program &amp; planning notes, participant’s feedback discussion notes</td>
</tr>
<tr>
<td>2000</td>
<td>Öberg, K.</td>
<td>Article about the exchange project in the Swedish newspaper, Nordvästra Skånes Tidningar</td>
<td>Newspaper publication: international</td>
</tr>
<tr>
<td>2000</td>
<td>Buskas, E.</td>
<td>Article about the exchange project in the Swedish newspaper, Åstorp Ångelholm</td>
<td>Newspaper publication: international</td>
</tr>
<tr>
<td>2000</td>
<td>Muller, L, P Axelsson &amp; M. Hlatshwayo</td>
<td>Radio interview with Kristianstad, Sverige</td>
<td>Radio interview transcript: international</td>
</tr>
<tr>
<td>2000</td>
<td>Muller, L &amp; G. Cowan</td>
<td>Joint representation with the Cognition in Education Project at The University of Stellenbosch</td>
<td>Joint representation of project group: national conference</td>
</tr>
<tr>
<td>2000</td>
<td>Axelsson, P &amp; L Muller</td>
<td>A two day workshop presented to educators of the Hörby Teacher Training College, Sweden</td>
<td>All participant feedback comments</td>
</tr>
<tr>
<td>2000</td>
<td>Axelsson, P &amp; L Muller: Afrikansk-inspirert musikk for marimba og andre perkusjoninstrumenter</td>
<td>Co-present a two day workshops to the music lecturers of Høgskolen i Agder, Norge</td>
<td>Program notes and participant’s feedback comments and evaluation questionnaire</td>
</tr>
<tr>
<td>2000</td>
<td>Muller, L &amp; G. Cowan</td>
<td>Joint representation with the Cognition in Education Project at The International Association for Cognitive Education South Africa (IACESA) conference, University of Stellenbosch</td>
<td>Joint representation of project group: national conference</td>
</tr>
<tr>
<td>2000</td>
<td>Muller, L.</td>
<td>Cognition in Education Online development towards web-centric curriculum delivery</td>
<td>Cognition and curriculum database contributions online</td>
</tr>
<tr>
<td>2001</td>
<td>Muller, L &amp; P Axelsson</td>
<td>Cultural exchange project with Åstorp Kommunala Musikskola, Sweden - 2nd year</td>
<td>As above</td>
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<tr>
<td>Year</td>
<td>Name(s)</td>
<td>Event Description</td>
<td>Additional Details</td>
</tr>
<tr>
<td>------</td>
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</tr>
<tr>
<td>2001</td>
<td>Muller, L, M Hlatshwayo, N Mthabe, P Lavisa &amp; P Axelsson</td>
<td>Present a one-week workshop &amp; Multi African Night Concert as a guest lecturer, with a team of African musicians and Swedish colleague to music education students during their Multicultural Week at the Malmö Musikhögskolan Lunds Universitet, Sverige including participants from Portugal and Holland (see Connect Project)</td>
<td>Video coverage, program &amp; planning notes, feedback discussion flipcharts</td>
</tr>
<tr>
<td>2001</td>
<td>Muller, L, M Hlatshwayo, N Mthabe, P Lavisa &amp; P Axelsson</td>
<td>Present the Percussion Program with a team of African musicians and Swedish colleague in a two day workshop to the music lecturers, music and drama students of Högskolen i Agder, Norge</td>
<td>Program content and planning notes, participant’s feedback comments</td>
</tr>
<tr>
<td>2001</td>
<td>Axelsson, P &amp; L Muller</td>
<td>A Youth Marimba Group from the Åstorp Kommunal Musikkola visit Cape Town as part of the Cultural Exchange Project</td>
<td>Full video footage, planning notes and feedback discussions with the youth and presenters, reporting process</td>
</tr>
<tr>
<td>2001</td>
<td>Mayne, J. Multicultural Marimba Magic: Swedes Soak Up African Ambience</td>
<td>Cape Times article following an interview upon their visit to Cape Town</td>
<td>Published article: national newspaper</td>
</tr>
<tr>
<td>2001</td>
<td>Muller, L. Cognition in Education: To Create</td>
<td>Design a creativity course and electronic script in collaboration with the online team for Web-centric Curriculum Delivery &amp; Support Services, Western Cape Education Department</td>
<td>Online curriculum course</td>
</tr>
<tr>
<td>2001</td>
<td>Muller, L &amp; P Axelsson</td>
<td>Represent Malmö Musikhögskolan in the European Commission’s Connect Program of the Association Européenne des Conservatoires (AEC) Project, Music Education in a Multicultural European Society at Escola Superior de Música de Lisboa, Portugal.</td>
<td>Discussion feedback notes</td>
</tr>
<tr>
<td>2001</td>
<td>Axelsson. The World Music Experience: Practical Work as a Path to Multicultural Music Education</td>
<td>Participate with two Åstorp educators connected to the University of Cape Town exchange project in a one week workshop program presented by a team of Zimbabwe musicians</td>
<td>Written report to Åstorp Music School, video and audio footage, workshop notes, transcripts</td>
</tr>
<tr>
<td>2001</td>
<td>Kulturskolen Frederikstad, Norge. Workshop med Zimbabweisk Musik og Dans</td>
<td>Accompany the Åstors Marimba gruppen as co-coach and performer to the Eurregion Pomerania, Polska, Deutschland Sverige Youth Festival</td>
<td>Published press materials</td>
</tr>
<tr>
<td>2001</td>
<td>Poland, Pyrzyce Festival</td>
<td>Coach Åstors Marimba gruppen for participation in the Percussive Arts Society, Swedish Chapter conference and competition in Stockholm organised by the Swedish Artist and Musician’s Interest Organisation (Sami), the Slagverkspedagogen i Sverige (Spis) and Stockholm’s Kronmata Percussion Ensemble</td>
<td>Media coverage and awards</td>
</tr>
<tr>
<td>Year</td>
<td>Author(s)</td>
<td>Title</td>
<td>Details</td>
</tr>
<tr>
<td>------</td>
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</tr>
<tr>
<td>2001</td>
<td>Muller, L &amp; G Járos.</td>
<td>Meeting with G. Járos from Sydney University Australia to discuss and update doctoral study research methodology from a systems perspective</td>
<td>Notes from discussion</td>
</tr>
<tr>
<td>2002</td>
<td>Muller, L.</td>
<td>Bringing Education in Harmony with the Systems View of the World</td>
<td>A one day workshop presentation to curriculum advisors of the Western Cape Education Department: Education Management and Development Centre (EMDC) Metropole at the Cape Town Teachers Centre</td>
</tr>
<tr>
<td>2002</td>
<td>Axelsson, P &amp; L Muller</td>
<td>A group of visiting Astorps educators to Cape Town as part of the Cultural Exchange Project</td>
<td>Full video coverage, feedback discussion notes, reports</td>
</tr>
<tr>
<td>2002</td>
<td>Muller, L.</td>
<td>Activities Relating to Study</td>
<td>Draw up a document of all activities related to doctoral study following on from visits to Lunds Universitet, Sweden in discussion with Cecilia Hultberg, research methodology lehrar (and with G. McPherson guest lecturer from New South Whales University, Australia)</td>
</tr>
<tr>
<td>2002</td>
<td>Muller, L.</td>
<td>Cultural exchange project with the Astorps Kommunala Musikskola - 3rd year</td>
<td>See above</td>
</tr>
<tr>
<td>2002</td>
<td>Muller, L.</td>
<td>A Course in Creativity – A Practical Guide for Mediators, workshop program with educators including classroom visitations as a follow up to the Education Management Development Centre’s workshop</td>
<td>Teacher creative portfolios and reflection journals, evaluation questionnaires, feedback discussion flipcharts, electronic mail communications, principals feedback comments</td>
</tr>
<tr>
<td>2003</td>
<td>Muller, L.</td>
<td>Muller, L The Creative Mediator</td>
<td>Muller, L The Creative Mediator (expanded to four groups)</td>
</tr>
<tr>
<td>2004</td>
<td>Muller, L.</td>
<td>Muller, L The Creative Mediator</td>
<td>Muller, L The Creative Mediator (expanded to eight groups)</td>
</tr>
</tbody>
</table>
Appendix D. Fieldwork journey elaboration on project details

Chapter two: international extensions of the percussion-based approach

Gothenberg, Sweden. The first visit to Sweden was made from 27 October – 05 November 1998, extended by Stig-Magnus Thorsén of the Gothenberg University. An intensive seminar and in-service training workshop, Världen i Skolan (The World in the School) was held at the Musikhögskolan, Artisten, Göteborg on 28–29 October to music lecturers and educators from around Scandinavia. The workshops were in collaboration with the neo-traditional percussion group Amampondo as the presentation team, coinciding with their European concert tour, and with whom planning meetings were held in accordance with project methodology prior to departure. Additional workshops were held with learners in an affiliated multicultural school as part of a world music education project at Hammarkulleskolan.

Ästorp and Malmö, Sweden. The trip to Gothenberg was extended to accommodate visits to meet with Eva Saether of the World Music School at the Musikhögskolan i Malmö (Saether 2003), that included classroom observations while giving a lecture presentation to the university’s percussion students, before following on to meet with Peta Axelson and her Zimba Marimba group at the Ästorps Kommunala Musikskola with whom we forged an ongoing exchange project the year after, in 1999. In April - May 2000, a percussion-based workshop with the Cape Town project team took place with lecturers and students at the Musikhögskolan i Malmö, Lunds universitet following on from the visit with the Ästorp project.

Malmö, Sweden. The above workshop was followed by a return visit to the Malmö Academy of Music the following year from 8–12 January 2001 to present, A Percussion-Based Approach to Developing Methodologies for Multicultural Music in the Classroom, in an intensive five day program and concert for full-time students during their multicultural week. This program, with a smaller Cape Town based presentation team, shared with Ästorp project partner and West African drum and dance presenters resident in Sweden, formed part of a regular course incorporated into their full-time curriculum for music teacher education in class and instrumental tuition, namely Higher Music Education in a Multicultural Society, a result of their World Music School project, (Lundström et al. 1998).

Agder, Norway. An invitation was extended by the Music Department of the Høgskolan i Agder (University College) in Norway to present a joint two-day program on 23–24 November 2000 with Swedish project partner, Afrikansk-inspirert musikk for marimba og andre perkusjonsinstrumenter to the music education lecturing staff. This was followed up the next year with another two-day program on 18–19 January 2001 presented to staff and full-time music and drama students involving additional members of the South African project team.
Appendix D

Frederikstad, Norway. After initial meetings with Per Skoglund in Cape Town, who expressed interest in the percussion-based approach, a visit was made to Norway in May 2000 with a group of Åstorp Kommunala Musikskola lecturers to forge partner links with the Frederikstad Kommunale Musikskole at the St. Croix-huset kulturskolen and their exchange project with the Zimbabwean Association of Music Educators. This was followed up with participation the following year by myself, Axelsson and a teacher from Åstorp in their six day Workshop, med musik/dans fra Zimbabwe from 11–16 June 2001.

Lisbon, Portugal. Connections with the Malmö Academy led to involvement in their project with the Association Européenne des Conservatoires, Académies de Musique et Musikhochschulen (AEC), Music Education in a Multicultural European Society together with its supporting sub-project, the Connect Program funded by the European Commission (EU) consisting of an exchange initiative with partners from around Europe, in this case with Sweden, Portugal, England and the Netherlands. It presented an opportunity to represent the Malmö Academy in a marimba program with Peta Axelsson as part of The World Music Experience: Practical Work as a Path to Multicultural Music Education with a focus on percussion at the Escola Superior de Música de Lisboa on 02–03 April 2001 in Portugal. This was in collaboration with The Birmingham Conservatoire, The Amsterdam Conservatoire and The Rotterdam Conservatoire in support of the establishment of a World Music Centre: The World in One Place, supported by the World Music Centre Development Association, Serpa, Portugal to promote the inclusion of world music in music academies in Europe. Follow-up workshops occurred with learners at schools and music centres in Lisbon under the auspices of the Yehudi Menuhin Foundation.

Visiting groups to Cape Town and other engagements. London, Devon group. In Cape Town percussion-based workshops were presented by members of the project team at the University of Cape Town to participants of The Crossings Project consisting of educators and curriculum developers from Devon Curriculum Services for the Devon County Council interested in cross-curricular cultural collaborations. Namibia, Walvis Bay group. Ten-day workshop programs have been held in the percussion-based approach with local teams coaching a youth marimba group sent by the Namibia Ministry of Youth and Sport in 1997, 2003 and remain ongoing, initially joining in with the in-service training workshop program at the South African College of Music, also with the African music course and thereafter connecting with marimba groups around Cape Town. Sweden, Stockholm. A group of full-time students and their lecturer in the Dalcroze Eurhythmics Method from the Royal College of Music in Stockholm attended our exchange project workshops with the Åstorp teachers and learners in April – May 2000 and have since formed an ongoing exchange program with the South African College of Music at the University of Cape Town convened by Anri Herbst. Additional opportunities arose to accompany and work with the Åstorp's marimba group at various engagements such as their participating and winning a prize at the Stockholm chapter of the Percussive Arts Society (PAS)
organised by the Kroumata Percussion Ensemble\(^1\) in 2001. Sweden, Lund. Other workshops included two day programs presented in Lund to education staff from the Hörby Teacher Training College as well as linking with the Kultur Centrum Skåne for special needs learners.

**Chapter three: music and the healing arts during a time of reconciliation**

Concept created around *Inner Resonances: Exploring the Inner Life of Sound.* This concept initially consisting of four contemplative percussion compositions (Muller 1991) performed as a series of reviewed public concerts\(^2\) (Rutter 1989; Liebenberg 1989) involving my percussion students. These were influenced by my involvement as performer in The Contemporary Music Society under the direction of resident composer Peter Klatzow with an emphasis on supporting and working closely with local composers such as Johan Cloete. The various newspaper, journal and magazine articles (De la Hunt 1989; Muller 1989b; Gold 1996; Morris 1995; Rutter 1992) and interviews on South African Broadcasting Corporation radio shows such as Womans' World and The Inner Ear, released around these events influenced the way the concepts developed, resulting in a spontaneous shift to more spiritual and consciousness-based aspects of sound. Invitations followed to appear at national festivals and other occasions such as The Body, Mind and Spirit Festival and The Art of Living Festival (Muller 1995a, 1990a, 1989b), and an international symposium, Planet in Change (Muller 1992) in which each speaker aimed, through their various fields, to bring awareness that a changed worldview is needed with new values for understanding the sacredness of all life as an ecological and interconnected whole on a personal, global and universal level. Around this time an increased awareness in the spiritual awakening of the planet occurred in which peace activists started to frequent visits to the world’s sacred sites. Table Mountain in Cape Town was recognised as one of the major energy centres of the world and a series of activities, including some of my meditative music, was held on the mountain to activate it as part of the global peace process (Weiss 1989). These events also corresponded with involvement in the inauguration processions of the newly appointed Cape Town mayor, Gordon Oliver, who chose to emphasise environmental and peace awareness during his term of office, and who, together with others, such as Archbishop Desmond Tutu, had led the first national peace march through the streets of Cape Town.

**Links to sacred music and other festivals and peace initiatives.** Further engagements linked to peace initiatives followed, with appearances at The Exploring Consciousness Film Festivals, playing to visiting Tibetan Lamas such as Akong Tulku Rinpoche (Akong Tulku Rinpoche 2005), and concerts with African musicians Dizu Plaatjies and Madosini with her *uhadi* and *umhrube* bows

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\(^1\) The Kroumata Percussion Ensemble can be accessed on [www.kroumata.rikskonserver.se](http://www.kroumata.rikskonserver.se).

\(^2\) The first concerts, Percussion Music for Healing were held on 12 August and 24 September 1988 at the South African College of Music and Inner Resonances: Exploring the Inner Life of Sound at the Sufi Temple in Newlands on 26 February 1989 and at the South African College of Music, University of Cape Town on 28 April 1989. The program featured the Western concert marimba, vibraphone, gongdrum, an assortment of gongs, bells, Eastern instruments, custom made glass percussion instruments and some African music instruments such as the Shona mbira dza vadzimu (voice of the ancestral spirits).
such as Sacred Sounds from Tibet and Africa, an interfaith music meditation concert under the auspices of the Cape Times One City Many Cultures project in February 1999. Interest in African music healing methods grew deeper (Nzewi 2002). In the same year, 1999, we performed with various international artists such as the Taiko Drummers from Japan, Burundi Drum troop, Pops Mohammed, and the traditional vocal group The Nqguoko Women from the Transkei, in the African leg of the World Festival of Sacred Music at the Kirstenbosch National Botanical Gardens in December 1999. An initiative of, and opened by, the Dalai Lama, the festival aims for "promoting unity through cross-cultural music backgrounds" (Reporter 1999). A youth outreach project for the Cape Performing Arts Board (Capab) included writing the percussion scores for a series of African operas with Capab opera director Michael Williams, involving collaborations between the company's singers and township school children around the Western and Eastern Cape, which was also presented in four consecutive years at the National Arts Festival in Grahamstown in the early 1990s (Muller 1995b; Williams 1995). Some performances, with a youth chorus chanting “peace is coming” to a kwela rap with marimba accompaniment, took place under the protection of plain-clothed police in community townships fraught with unrest during the nation’s state of emergency, often to a backdrop of burning tyres and gunshots.

Health for Africa. The organisation Health for Africa: Forum for holistic healthcare, had regional representation in the country’s major cities, Johannesburg, Durban and Cape Town in the early 1990s. It had been responsible for co-ordinating national activities around various, often controversial, health issues such as the recognition of complementary and alternative health systems, and was instrumental in liaising with statutory and professional bodies in leading initiatives to form representational registration associations for upcoming health organisations. Among these were the South African Complementary Medicine Association (Sacma) and the Confederation of Complementary Health Associations of South Africa (Cochasa) as well as lobbying for inclusion of traditional healers in the national health system (RSA 1997; 1995b). Working in close co-operation with national and regional chairperson, Michael O’Brien, a clinical psychologist appointed onto the African National Congress’s (ANC) advisory health commission (ANC 1994a), we explored the implications of representation for the arts in a healing capacity in a number of ways, often in association with other organisations such as the complementary therapies body Cochasa mentioned above, and the Cape Mental Health Association.

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3 A lecture given by Meki Nzewi on music and healing at the South African College of Music, University of Cape Town on 22 May 1998 dealing with ngoma and sangoma, i.e. traditional healer with music or a drum, impressed on these ideas.

4 The four operas for voices and percussion are based on African folk tales, and were named The Milkbird, The Seven-Headed Snake, The Child of the Moon and The Orphans of Qumbu.
Some of my engagements with Health for Africa included initiating and organising a special public screening of the systems film Mindwalk at the Labia Cinema Theatre in April 1994, followed by a panel discussion and public interface consisting of systems theorists debating the relevance of holism and the systems view of life in the changing South African context, including speakers from the biomatrix systems perspective. Other engagements centred around the arts in a weekend workshop as part of a series, Holism in Action: A Holistic Approach to Creative Arts, held at the University of Cape Town in September 1992 to gather and co-ordinate creative artists in the Western Cape interested in holism and health. The program included Jungian psychodrama (Moreno 1959), southern African drumming and percussion-related activities for children with Dizu Plaatjies, movement and art therapy, guided visualisation with music and lecture demonstrations on healing and traditional Xhosa divination music (Coppenhall 1991). There were also art and book exhibitions, a performance by the Theatre of the Deaf, Falling on Deaf Ears, and a tale in African traditional costume enacted by the Cape Performing Arts Board (Capab) Puppet Company, as well as panel discussions.

Chapter four: course in creativity featuring an arts-based mediation approach

Learning to create: an arts-based mediation approach. An activity that had influenced the inception of the Creative Mediator Program was the involvement in a creativity course named Learning to Create, another sub-project of the former Cognition in Education Project. The executive committee had formed an additional task group to put together a resource publication of the different sub-projects and a multimedia web design group to create an online cognition course for the Western Cape Education Department. Apart from the proposed joint contribution to a chapter in the booklet, I was approached by the committee and project group to conceptualise and develop the primary text content and graphically enriched web script for a proposed online course module around the cognitive verb, to create. This was to be centred on the Integrated Cognitive Dispositions arts-based mediation approach of our sub-project as part of an initiative to demonstrate the effectiveness of, and to render attractive, the web centric curriculum delivery medium. This course brought together a large range of web technologies including an extensive web database in the creation of online media and was destined to be linked with Khanya, another large-scale nationwide schools computer project. The module was aimed, initially, at Western Cape Education Department and Education Management and Development Centres for the economic and efficient training of their personnel to enhance delivery and support to the teachers they serve.  

5 The film is based on the work and systems perspectives of physicist Fritzof Capra and his book The Turning Point (Capra 1982). It was released in Austria in 1990 and directed by Bernt Capra. It involves an intriguing chance conversation between a physicist, politician and poet featuring Liv Ulman, Sam Waterson and John Heard.

6 The Cognition in Education Project has since discontinued but information can be traced through the Western Cape Education Department's website <http://wced.wcape.gov.za>.
Appendix E. Fieldwork journey selections from the portfolio

A Percussion-Based Approach to African and Western Music Education

Rhythm begins in the body

Project photographs: Ronnie Levitan
Appendix E

Picture one. Participants gather around the central fire, an mbawula, engaged in ntsomi, animated storytelling.

Picture two. Presenters and participants prepare for a co-ordinated team event in groups of township marimbas, drums, dancers, singers, amadinda log xylophone and percussion.
Åstorp lär musik på afrikanskt vis

Multicultural marimba magic
This is what our participants have to say:

"a real African experience"
"developing confidence"
"working from within one's own creativity"
"enriching, exciting, exhilarating, uplifting, enjoyable"

"In participating in this course you have given me hope that my faith in the resilience and professionalism of our teachers is not a vain one and that education will indeed lead the charge of reconstruction and development into the twenty first century"

Mr Brian O'Connell

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### A PERCUSSION-BASED APPROACH TO AFRICAN & WESTERN MUSIC EDUCATION

1999 Workshops

with

LINDA MULLER and a project team from UCT including members of

AMAMPONDO as well as youth performing groups

In cooperation with

The Western Cape Education Department

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### COURSE OUTLINE

- the art of story-telling
- rhythmic and body percussion
- dancing, action songs
- drumming groups
- reed flute dance
- xylophones
- music bows, mbiras
- township marimbas
- rhythmic body percussion
- dance, action songs
- drumming groups
- reed flute dance
- xylophones
- music bows, mbiras
- township marimbas

Venue: College of Music, UCT

Time: 0900 to 1600

Dates: 6th and 11th September

Registration Form

Please reserve a place for me in:

A PERCUSSION-BASED APPROACH TO AFRICAN AND WESTERN MUSIC EDUCATION

Fee: R130 per school (disadvantaged schools can be subsidised)

Name:

School:

Contact number:

Per included:

Return to: Cape Town Teachers Centre
P.O. Box 44460 Clarendon 7735
Fax: 671 5566 by 30 August 1999

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Appendix E

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This is what our participants have to say:

"a real African experience"
"developing confidence"
"working from within one's own creativity"
"enriching, exciting, exhilarating, uplifting, enjoyable"

"In participating in this course you have given me hope that my faith in the resilience and professionalism of our teachers is not a vain one and that education will indeed lead the charge of reconstruction and development into the twenty first century"

Mr Brian O'Connell
The *Wela* Project of the Integrated Cognitive Dispositions
sub-project of the
Cognition in Education Project

Picture one. Teacher Bushy makes use of the only textbook available to her, a publisher's sample copy.

Picture two. We found the class divided into fast and slow learners, divided by a central carpet patch.

Project photographs: Gill Cowan
After stating that no arts and culture exists at the school, we discovered a wealth of extra-mural activities alive in the community and arranged for a mini-cultural festival at the school.
Picture one. Members of the community appear at the mini-cultural festival at the school in traditional dress. Picture two. We imported some of the traditional activities into the classroom with parents showing the learners some of the traditional dances and customs.
The Aim of the Project is to develop an awareness of cognition in C2005 among the teachers and learners in schools in the Western Cape.
A course in creativity
~ A practical guide for mediators ~
presented by Linda Muller

Change is here to stay. Change is universal and everyone is experiencing it. In order to respond to and create change, we need to be flowing in harmony with it.

Harmony serves as a unifying and grounding force while allowing for change to constantly unfold in a diversity of creative expressions. Education is in a powerful position to offer such creative change opportunities. In these workshops, we will explore creativity in a practical and experiential way from four different and interactive perspectives.

I. The role of worldview in our lives

We live in a world in which we are forever creating new relationship contexts. The systems view of life can empower and guide us as to how to make a mindset from pre-determined or prescribed (fixed-view) content-based education to self-generated meaning-making learning experiences.

II. Reaching the whole being

The structure and function of the brain actually reflects the systems view of the world. Yet we are using only a small percentage of our capacity. We need to reorganize the way the mind works. We can envision and integrate body, mind, emotions and spirit by embodying different ways of knowing that represent a more holistic experience of life.

III. Mediating self-organized learning

To honour a holistic approach in education, we need to provide a 'holding space' for those discoveries to unfold and develop. This space should have a strong centre to which learners can return after their multi-dimensional excursions. It should also however, ensure a diversity of learning and presentation styles.

IV. Bringing harmony into the system

Still under the influence of the old education system, we seem to be spending too much time and energy on 'undoing difficulties'. This course offers a different approach - by bringing harmony into the learning experience, we inspire confidence in the natural ability of a system to organise itself. Some creative and accessible techniques are explored with culture-friendly percussion activities.

Linda Muller is an education developer, creativity practitioner and musician. She has piloted a number of projects at the University of Cape Town and the Western Cape Education Department in the fields of African and Western methods, creativity in curriculum design and cognitive studies. She spends much of the year in Sweden where she is involved in a number of cultural exchange programs and is a guest lecturer in methods development.

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Workshops will be held at the Cape Town Teachers Centre in Claremont. Participation fee is R 240.00 per person for the four sessions:

Sessions are on Wednesdays 15h00 – 16h15: 20 March, 17 April, 8 & 22 May.

Tea & coffee is provided, please bring your own snacks or something to share. Also, don’t forget to wear comfortable and relaxing clothing.

To reserve your place on this journey, please make a booking with Kathy at the Cape Town Teachers Centre on 671 7088 by Friday 15 March 2002.

“This course, which uses a systems approach, relies on mediation for an integrated and holistic approach in teaching. It ensures a shared understanding through the collaborative nature of the process which can greatly enhance the quality of education.”

-Mackie Kleinschmidt, Chief Curriculum Advisor, WCED
Appendix F. Publications on biomatrix theory

The following is a list of biomatrix publications arranged in chronological order:


Appendix F


