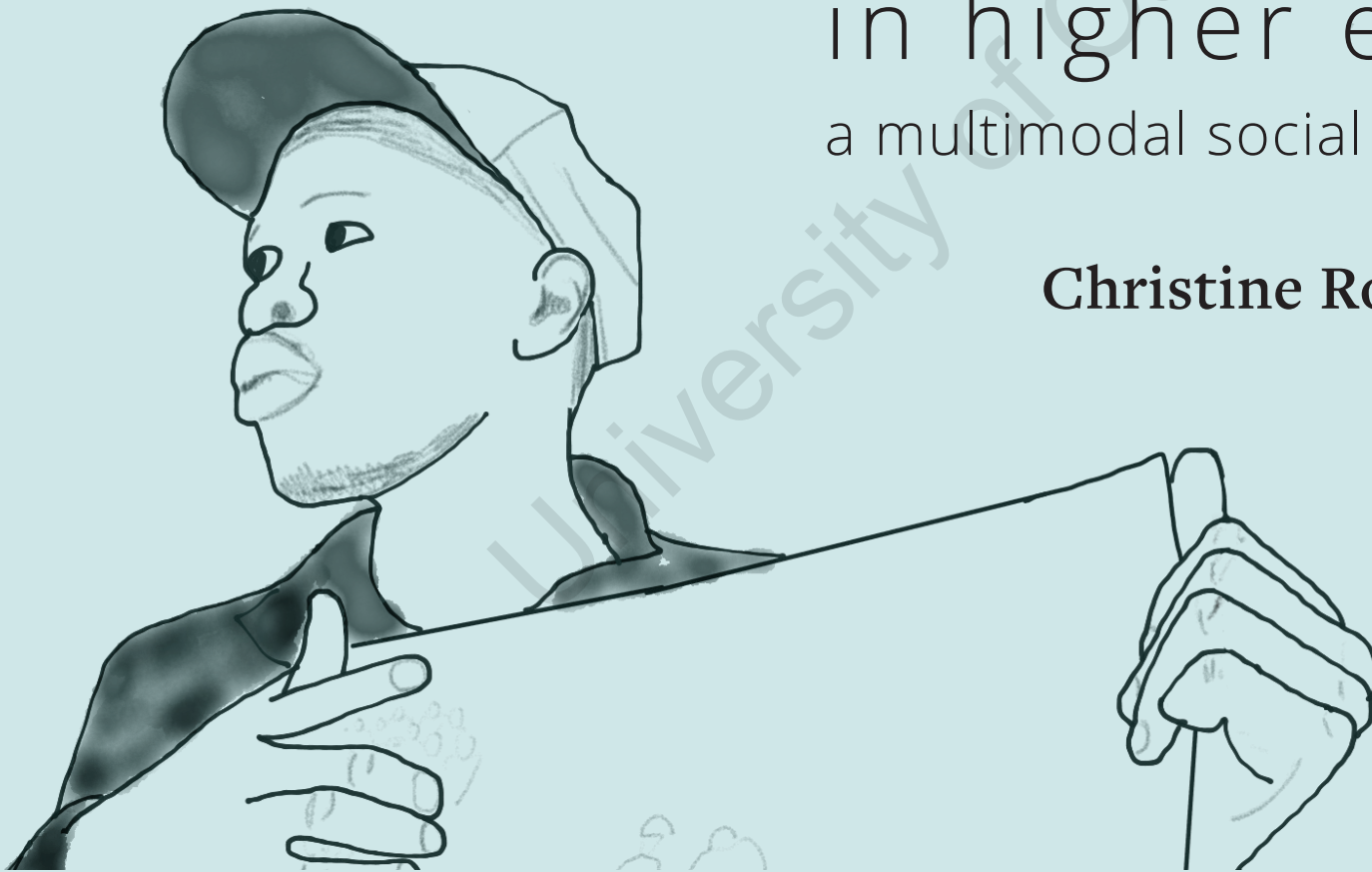


Redesigning

landscape architecture
in higher education:
a multimodal social semiotic approach

Christine Rosalie Price



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Thesis Presented for the Degree of Doctor of Philosophy

Redesigning landscape architecture in higher education: a multimodal social semiotic approach

by Christine Rosalie Price

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Supervised by A/Prof Catherine Kell and A/Prof Arlene Archer



School of Education
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I love you. THANK YOU for making me tea; for copy editing; and for helping me to be the best version of myself.

To my students

You inspire me and teach me more than you know.

Declaration

I, Christine Price, hereby declare that the work on which this thesis is based is my original work (except where acknowledgements indicate otherwise) and that neither the whole work nor any part of it has been, is being, or is to be submitted for another degree in this or any other university. I authorise the University to reproduce for the purpose of research either the whole or any portion of the contents in any manner whatsoever.

Signature

Signed by candidate

Date

3 February 2020

This thesis makes use of British English spelling conventions and the American Psychological Association (7th edition) reference style.

Abstract

This investigation is a case study of landscape architectural design education in South Africa. Current forms of landscape architectural education are influenced by Global North perspectives and often, if not consciously, privilege particular ways of meaning-making, and exclude or marginalise experiences or ways of knowing that are different. The aim of this research is to develop a landscape architectural pedagogy for diversity that fosters multiple perspectives and valorises resources that students bring to their learning environment, in order that students may both access and challenge the dominant landscape educational discourse. In grappling with these concerns, this research finds resonance with a multimodal social semiotic approach. Instead of labelling students as (in)competent or (under)prepared, a multimodal social semiotic approach emphasises the interest, agency and resourcefulness of the student as meaning-maker. The research thus reframes landscape architectural design processes through a multimodal social semiotic lens, providing new insights and clarity to these processes. The approach foregrounds interpersonal and social

meanings of space and, to some extent, challenges traditional landscape architectural design practices that tend to value compositional and conceptual meanings.

The methodology centers around a spatial model project in the second half of a first-year landscape architectural design studio subject. The data includes students' texts and their presentations. The research develops a methodological framework that outlines a range of ideational, interpersonal and textual meaning-potentials of landscape spatial and visual texts and applies this framework to the analysis of students' 2D and 3D texts. Through careful analysis of students' design trajectories, this research uncovers the types of resources students draw on, including semiotic, experiential, social, interactive and pedagogical resources. The analysis shows that students' transformation of resources results in innovative spatial designs, and expands on what and how landscape spaces can mean. Through the investigation, tenets for a multimodal pedagogy for diversity are developed: recognition of the rich and diverse resources students

bring to their learning environment; acknowledgment that these resources are apt 'precedent' for landscape architectural design processes; and explicit attention to multimodal moments and activities that may prompt re-(inner) conceptualisation in design trajectories. This pedagogical approach begins to address past educational imbalances and inequalities, and ensures that diverse, Global South perspectives contribute to the production of knowledge.

Table of contents

Acknowledgements	4
Declaration	5
Abstract	6
List of images	19
List of tables	22
List of appendices	23
Side note: What is landscape architecture?	24
Chapter 1: Introduction	27
1.1 Research context: landscape architectural education	27
1.2 Rationale	28
1.3 Aims, approach and research questions	31
1.4 Outline of remaining chapters	33
Chapter 2: Literature review and theoretical framework	37
2.0 Chapter overview	37
2.1 Multimodal social semiotics	38

2.1.1	Multimodal social semiotics as an approach to meaning-making	38
2.1.2	Connecting multimodal social semiotics to landscape architectural theory, practice and education	40
2.2	Use of resources in landscape architectural design processes	42
2.2.1	The landscape architectural design process	42
2.2.2	Potential resources available at the moment of design	44
	Meaning-making prompts	46
	Precedent as a resource	48
	Guiding-themes as resource	48
2.3	Resemiotisation and trajectories of texts as multimodal ensembles	51
2.3.1	The landscape meaning-making trajectory	51
2.3.2	Resemiotisation	55
2.4	Modes and their affordances for landscape architectural design	56
2.4.1	Space as mode	57
	Ideational meaning potentials of space	59
	Interpersonal meaning potentials of space	63
2.4.2	Visual modes: drawings and 3D models	69
2.4.3	Verbal and gestural modes	75

2.5 Developing a multimodal pedagogy for diversity	78
2.5.1 Recognition and signs of learning	79
2.5.2 Multimodal pedagogy and access	80
2.5.3 The impact of resemiotisation on learning	82
2.6 Conclusion	83
Chapter 3: Methodology	85
3.0 Chapter overview	85
3.1 Research design: A situated multimodal social semiotic and ethnographic perspective	86
3.1.1 A multimodal social semiotic approach to recognise diverse students' resources and meanings	87
Resources	87
Modes	88
Resemiotisation	89
3.1.2 An ethnographic approach to students' situated meaning-making practices	90
3.1.3 A case study: a spatial model project in the landscape first year studio	92
3.2 Research context: The Diploma in Landscape Architecture	93
3.2.1 Research site	93

3.2.2 Research participants	95
3.3 Ethical considerations	97
3.4 Data collection	100
3.4.1 Video recordings	101
3.4.2 Scans and photographs of students' texts	104
3.4.3 Supplementary data	105
Students' comment sheets	105
Interviews and focus group discussions	105
Observations and field notes	105
3.4.4 Reviewing the data	106
3.4.5 Selection of participant data	106
Chapter 4: Malibongwe	107
Chapter 5: Nadine	107
Chapter 6	108
3.5 Framework for identifying students' resources in 2D and 3D texts in landscape architectural education	108
3.5.1 Ideational meaning potentials	111
3.5.1.1 Purpose	111
3.5.1.2 Guiding theme	116

3.5.1.3 Argument	116
3.5.2 Interpersonal meaning potentials	117
3.5.2.1 Affect	117
Belonging	118
Impression or 'sense of place'	118
Comfort	119
Binding continuum	121
3.5.2.2 Interaction	121
Power	122
Social distance	123
3.5.2.3 Identity	125
3.5.2.4 Precedent	127
3.5.2.5 Modality	127
3.5.3 Textual meaning potentials	131
3.5.3.1 Compositional resources	133
Coherence	134
Salience	135
Cohesion	136
Degree of enclosure	137
3.5.3.2 Physical resources	139

Elements of design	139
Materiality	142
Actions	144
3.6 Chapter summary	146
Chapter 4: Constructing different orders of visibility of resources in the classroom	149
4.0 Chapter overview	149
4.1 A 'generosity of view': designing the project brief	150
4.1.1 Narrative as prompt in the landscape design trajectory	151
Overview of students' narratives	154
4.1.2 Widening the range of resources: adaptations to the project brief	156
4.1.3 Assessment criteria	158
4.2 Bringing diverse resources into the landscape classroom: an interpretation of Malibongwe's 2D graphic narrative	161
4.2.1 Interest, resources and difference in Malibongwe's graphic narrative and presentation	162
4.2.2 Recognition of resources in Malibongwe's graphic narrative	169
Multimodal social semiotic analysis of the overall graphic narrative	170
Thickening perspective: in-depth scene-by-scene analysis	174

4.3 Transformation of resources and recognition of signs of learning: an analysis of the 3D model	183
4.3.1 'Remaking' the narrative: the realisation of the 3D spatial model	184
4.3.2 'Remaking' the narrative: (re)designing imagined futures	192
4.3.3 Multimodal pedagogies: A 'Kressian moment'	195
4.4 Conclusion: changing orders of visibility to connect Malibongwe's experiences to the landscape architectural classroom	198
Chapter 5: Resemiotisation: tracing the movement and transformation of resources in a design trajectory	201
5.0 Chapter overview	201
5.1 Drawing on resources to create the graphic narrative	204
5.1.1 Semiotic resources deployed in the graphic narrative	204
Coherence	206
Cohesion	208
Salience	210
5.1.2 Experiential and social resources that prompt design	212
5.2 Resemiotising resources from graphic narrative to sketches to Model 1	215
5.2.1 Taking up interactive resources from the group discussion	216

5.2.2 Mobilising resources through the affordances of sketches	218
Resemiotisation of 'peaceful' and 'destruction'	224
Resemiotisation of 'contrast'	226
Resemiotisation of 'balance'	228
5.3 Resemiotisation of the narrative as a spatial experience in Model 2	229
5.3.1 Resources that realise interaction	232
Control	232
Social distance	233
5.3.2 Resources that realise affect	234
Comfort	234
5.4 Mobilising resources to move from Model 2 to Model 4	236
5.4.1 Emergent meanings: material resources prompting resemitisation	237
5.4.2 Design resolution of the raised platforms	238
5.5 Conclusion: opportunities of multimodal pedagogies to prompt resemitisation	239
Chapter 6: Students as (re)-makers of landscape architectural design	241
6.0 Chapter overview	241

6.1 Recognition of risk in employing resources that meaning (re)-makers bring with them	244
6.1.1 Students' re-making of experiential resources into imagined spatial experiences	245
Thozama: designing faith as space	246
Mbulelo: making experiential resources visible	249
Xola: drawing on an experience of betrayal	253
Cebisa: designing space through engagement and confronting fears	257
6.1.2 Re-making the spatial mode(s): changing visibility of material resources	261
6.1.3 Risk: how much is 'enough'?	268
Spatial model criteria as landscape canon	269
Khanyiswa	270
Sonwabo	277
6.2 The role of pedagogical resources in design trajectories	282
6.2.1 Group crits	284
6.2.2 Iterations of texts in multimodal design trajectories	285
6.2.3 Transmodal moments: prompts of re-(inner)conceptualisation	287
Sketches	288
The 1:1 chalk drawing	289

Mind map	290
6.3 Conclusion: guidelines for a multimodal pedagogy for diversity	292
Recognition of diverse students' resources	292
Recognition of resourcefulness as design precedent	293
Deployment of prompts in multimodal and iterative design trajectories	293
Engagement in the 'contact zone'	293
Chapter 7: Conclusion	295
7.1 Overview of rationale and research questions	295
7.2 The case study	297
7.3 Summary of findings	298
7.4 Key Contributions	301
7.4.1 Theory and method: landscape architectural design	301
7.4.2 Multimodal social semiotics and resemiotisation	302
7.4.3 Landscape architecture pedagogy for diversity	304
Afterword: Future directions	306
References	309
Appendices	327

Appendix A Poster brief	327
Appendix B Poster presentation comment sheet	329
Appendix C Model brief	330
Appendix D Assessment rubric	332
Appendix E Model 1 comment sheet	333
Appendix F Chalk drawing brief	334
Appendix G Model 2 comment sheet	335
Appendix H Model 3 comment sheet	337
Appendix I Summary of student research participants	338
Appendix J Extract from Malibongwe's Model 3 crit	341
Appendix K Extracts of Malibongwe's crit discussions about the meaning of the shell in his models	342
Appendix L Extract of Khanyiswa's Model 2 crit	344

List of images

Image 1.1 Diagram showing the potential trajectories or journeys of diverse students learning to become landscape architects

Image 2.1 Diagram showing components of the meaning-making processes in landscape architectural education

Image 2.2 Diagram showing texts as multimodal ensembles within a landscape architectural design trajectory

Image 3.1 Interconnection of subjects within the first year of the Diploma in Landscape Architecture

Image 3.2 A drinking fountain at Green Point Urban Park that accommodates wheelchair users and dogs

Image 3.3 Space adjacent to tall building and a space adjacent to tall building 'softened' by elements that relate to the human-scale

Image 3.4 Two examples of benches

Image 3.5 Examples of students' graphic narratives grouped into genres

Image 3.6 Compositional layout

Image 3.7 Section drawing showing variations of groundedness

Image 3.8 Section drawing shown variations in height and distance between wall planes and crowdedness

Image 3.9 Section drawing showing variations in sky planes

Image 3.10 The development of the elements of design: point, line and plane

Image 3.11 Figure-ground: the relationship between figure or mass or form and ground or space

Image 3.12 An example of a 'borrowed landscape': the view of Signal Hill from Green Point Urban Park

Image 4.1 Malibongwe's graphic narrative

Image 4.2 Redrawn screenshot of Malibongwe holding up his graphic narrative while he presents

Image 4.3 Analytical diagram of Malibongwe's graphic narrative showing panels, vectors and voids

Image 4.4 Scene 1 from Malibongwe's graphic narrative

Image 4.5 Scene 2 from Malibongwe's graphic narrative

Image 4.6 Scene 3 from Malibongwe's graphic narrative

Image 4.7 Scene 4 from Malibongwe's graphic narrative

Image 4.8 Top view of Malibongwe's Model 3

Image 4.9 View of lower level of Malibongwe's Model 3

Image 4.10 Redrawn screenshot of Malibongwe engaging with his first model in his final presentation assessment

Image 5.1 Diagram of the primary texts or 'fixings' within Nadine's design trajectory

Image 5.2 Nadine's graphic narrative

Image 5.3 Nadine's Sketch 1

Image 5.4 Nadine's Sketch 2

Image 5.5 Nadine's Model 1

Image 5.6 Tracing the use of symmetry and asymmetry through the graphic narrative, sketches and model

Image 5.7 Nadine's Model 2

Image 5.8 Diagrammatic analysis of Model 2 showing access, movement routes, figure ground, sky planes and visual permeability / barriers

Image 5.9 Nadine's Model 4

Image 6.1 Diagram showing how students' resources interface with the landscape architectural canon, as a negotiation in Pratt's (1999) 'contact zone'

Image 6.2 Views of Thozama's Model 3

Image 6.3 Views of Mbulelo's Model 4

Image 6.4 Xola's Model 4

Image 6.5 Figure-ground diagram of Xola's Model 4

Image 6.6 Views of Cebisa's Model 4

Image 6.7 Nadine's Model 3, Nonthobeka's Model 3,
Trent's Model 2 and Fezeka's Model 2

Image 6.8 Dave's Model 3 and Nelisiwe's Model 3

Image 6.9 Mbali's Model 3, Vusi's Model 3, Themba's
Model 3 and Wandile's Model 3

Image 6.10 Khanyiswa's Model 1

Image 6.11 Redrawn screenshot of Khanyiswa's chalk
drawing

Image 6.12 Khanyiswa's Model 2

Image 6.13 Khanyiswa's Model 3

Image 6.14 Khanyiswa's Model 4

Image 6.15 Sonwabo's Models 1 - 4

Image 6.16 Analysis of movement routes in Sonwabo's
Model 4

Image 6.17 Diagram illustrating the role of pedagogical
interventions and transmodel moments in terms
of prompts for design

List of tables

Table 3.1 Summary of texts produced and data collected throughout the case study

Table 3.2 Framework to identify students' semiotic resources in 2D and 3D texts in landscape architectural education

Table 3.3 Examples of possible roles in types of spaces

Table 3.4 Modality markers for 3D abstract spatial models

Table 3.5 Textual resources that realise salience

Table 3.6 Textual resources that realise cohesion

Table 3.7 Textual resources that realise Bound or Unbound spaces

List of appendices

- Appendix A Poster brief
- Appendix B Poster presentation comment sheet
- Appendix C Model brief
- Appendix D Assessment rubric
- Appendix E Model 1 comment sheet
- Appendix F Chalk drawing brief
- Appendix G Model 2 comment sheet
- Appendix H Model 3 comment sheet
- Appendix I Summary of research participants
- Appendix J Extract from Malibongwe's Model 3 crit
- Appendix K Extracts of Malibongwe's crit discussions
about the meaning of the shell
- Appendix L Extract of Khanyiswa's Model 2 crit

What is landscape architecture?

Landscape architecture dates back to early human settlements. One of the oldest known examples of human intervention in the landscape is the Méneac alignment at Carnac Brittany: over a thousand stone markers aligned in rows (Jellicoe & Jellicoe, 1995, p. 16). Dating back to 2500 BCE, the Méneac alignment is typical of early landscape designs which reflected the relationship between people, the land, and the cosmos (Rogers, 2001, p. 21,27). Many settlements around the world and throughout human history have engaged in transforming their environment, for example from the complex landscape of Teotihuacán in Mexico c.150 - 225CE (Rogers, 2001, p. 47), to the earthen mounds in present-day America c.800 - 1350 CE (Rogers, 2001, p. 49), to paintings of walled gardens that were found in a tomb in Thebes, Egypt c.1400 BCE (Rogers, 2001, p. 38).

Although landscape interventions can be identified throughout the history of human settlement, the term *landscape architecture* only came into use in the English language in the mid-1800s, popularised by the works of John Claudius Loudon (Streatfield, 1988). The American

Society of Landscape Architecture (ASLA) was founded in 1899 and in the following year, Harvard University offered the first degree in landscape architecture. With only 252 members in 1930, ASLA's numbers have grown to 15000 members today (van den Brink et al., 2017, p. 1). The South African profession was initially influenced by British and North American landscape architectural theories and practices: the first generation of landscape architects in South Africa studied in the United Kingdom and the United States before setting up practices around South Africa between the 1950s, and 1970s. In 1962 the Institute for Landscape Architecture in South Africa (ILASA) was founded by Joane Pim, Anne Sutton, Peter Leutscher and Roelf Botha (Hindes & Stoffberg, 2012, p. 1). Landscape architects were involved in urban developments from as early as 1960 when Joane Pim, who had trained under both an architect and horticulturist in the United Kingdom, was commissioned by Anglo American Corporation to design the mining town of Welkom (Hindes & Stoffberg, 2012, p. 12). In 1971 the University of Pretoria opened its school of Landscape Architecture. By 1980 approximately 50 graduates

from Pretoria University were practising landscape architecture in South Africa (Hindes & Stoffberg, 2012, p. 15). To date, there are approximately 200 landscape architects in South Africa but despite more than 25 years of democracy, the demographic make-up of registered landscape professionals does not reflect the range of regional or national diversity. Landscape architecture in South Africa, as with most schools of architecture or design in Africa, has adopted educational systems from the Global North (Saidi, 2005, p. 3). There are currently three higher educational institutions in South Africa that offer undergraduate and/or postgraduate qualifications in landscape architecture. As discussed in Chapter 1, these educational programmes play a role in transforming the landscape profession in South Africa.

Contemporary landscape architectural practice is concerned with the design of outdoor spaces: from private to public; urban to rural; and large- to small-scale. There is significant overlap and collaboration between landscape architecture and other professions such as architecture, furniture design, town planning,

urban design, ecology, land art, civil engineering and horticulture. Landscape architects may be involved in the design of projects such as private gardens and estates, public parks, promenades, pedestrian streets, commercial and residential developments, sports and recreational precincts, transport interchanges, rehabilitation sites, roof gardens, heritage sites and stormwater management systems. Although landscape architects may also work in the public and educational sectors, they tend to work in private practice, ranging from one-person consulting practices to large multidisciplinary firms. A typical project from the point of view of the landscape architect includes: receiving a brief from the client; conducting investigations and analyses of the site; preparing conceptual designs and budget estimates; draughting detailed plans and construction details; managing a procurement process to select a contractor; issuing construction documents to the contractor; and inspecting and certifying construction work. Landscape architects tend not to be involved with constructing or managing construction of the projects.

The context of the landscape architectural learning environment attempts to simulate the characteristics of landscape architectural practice in order for students to be equipped for employment. Landscape architects commonly work across a variety of modes of expression and communication, including using visual and spatial modes to represent and explore site context and to design spatial experiences. The potential of landscape designs may be represented to clients and contractors through visual, verbal and written texts. Landscape architectural education often seeks to provide students with exposure to a wide range of knowledge from natural science to artistic creativity (Gazvoda, 2002), including: design history and theory, soils, drainage, botany, ergonomics, natural systems, microclimate, plant material identification and selection, landscape maintenance processes and techniques, construction techniques, drawing skills (both by hand and computer-assisted), ethics, project management and plant pathology. While this range of subjects is important, the primary emphasis is most often the design 'studio' subject. Design studios are a common component of

design education (Alon-Mozes, 2006, p. 30; Brandt et al., 2013; van Dooren et al., 2013, p. 56) where students are expected to learn to work in and across multiple modes and to engage in the conventions of landscape architectural practices. Students work in studio classrooms with access to drawing tables and computers. Studio subject assessments are largely project-based and relate to the types of projects and contexts in which landscape architectural professionals may work. A large part of the studio subject culture is the *crit*: an informal discussion between the student and their peers, mentors or lecturers, about the student's work, with the aim to assist the student in refining their design (Belluigi, 2016; Brandt et al., 2013). Studio work is iterative, there may be several cycles of crits on one particular project before the final assessment.

CHAPTER 1

Introduction

*Out beyond ideas of wrongdoing and
rightdoing, there is a field. I'll meet you there.*
- Rumi

1.1 Research context: landscape architectural education

This thesis centers around a case study in the context of landscape architectural design education in South Africa. Landscape architecture is, broadly, the design of outdoor spaces (see the side note for a more detailed history and description). The profession of landscape architecture in South Africa is still comparatively young, with just over 200 professionally-registered members, despite the identification of landscape architecture as a scarce skill (South Africa, 2016, p. 14). In South Africa, registration of landscape architectural professionals and accreditation of landscape architectural educational programmes are governed by the South African Council for the Landscape Architectural Profession (SACLAP). There are currently three higher education institutions that offer a landscape architectural-based qualification. South African landscape architecture is in the process of developing its own identity and while landscape architectural projects have been implemented that relate to local socio-economic contexts, even 25 years after the

end of apartheid, there are very few black¹ landscape architectural professionals. Current membership of landscape architectural professions in South Africa does not accurately reflect regional or national demographics and there have been recent directives from government to transform the profession. Because programmes are less costly and are easier to access, students with limited financial resources predominantly enrol in historically disadvantaged institutions, while mostly middle-class students enrol in historically advantaged institutions (Council on Higher Education, 2016, p. 147). The Diploma in Landscape Architecture investigated here, is located at a historically disadvantaged higher education institution, and is well-positioned to widen access to and aid in the transformation of the South African landscape architectural profession.

1.2 Rationale

This research is located, as a case study, in the studio project of a first year landscape architectural class at a South African tertiary education institution. Although this classroom and its participants occupy a tiny fraction of time and space, they have not escaped the complexities of the local and global worlds outside the classroom walls. Students in this class live in Global South contexts while simultaneously living in a world that is dominated by Global North views. The Global North is not a geographical location but an ideological perspective (Kerfoot & Hyltenstam, 2017, p. 1; Santos, 2014, p. 10), a single point of view, which has been responsible for, among other things, the justification of colonialism, patriarchy, exploitation of natural resources

¹ Although this research acknowledges that there is no biological basis for race, race is a social and cultural phenomenon that is entrenched in South African society (Seekings, 2008, p. 22). During apartheid, legislation 'classified' all South Africans into one of four racial categories. Despite the abolishment of apartheid legislation in favour of a constitution lauded for its equality, the systemic inequalities and unjust privileges established during apartheid persist in shaping the economic and social lives of South Africans (Erwin, 2012). Ironically, racial categories continue to be used in government policies and data collection in attempts to improve and monitor the progress of transformation or redressing of past inequalities (Bock, 2017; Seekings, 2008) (for example, tracking the number of registered black landscape architects). For more information on race and apartheid in South Africa see Seekings (2008, pp. 3-5).

and widening social and economic inequalities. In South Africa, this single point of view not only promulgated three centuries of colonial rule as well as the more recent apartheid system of institutionalised racism and discrimination, but in the process, erased and rejected many alternative values, social practices, and knowledges (Kerfoot & Hyltenstam, 2017, p. 1; Santos, 2014, p. 5). As discussed further in the next two paragraphs, this has affected physical and epistemological access to education, particularly to those who are marginal to the dominant viewpoint.

Although most of the students in the landscape classroom are part of the “born free”² generation, they are not liberated from the discrepancies and inequalities of post-colonial and post-apartheid South Africa (Ndimande, 2012, p. 215). South Africa has one of the world’s highest wealth disparities and these inequalities are particularly prevalent and evident in

what has been called a “bimodal education system” (Spaull, 2013). Half of the students in the class grew up in rural communities in the Eastern Cape province and attended “schools [...] characterised by under-prepared teachers; poor student attendance; weak leadership; and lack of desks, toilets, libraries and textbooks” (Archer & Newfield, 2014, p. 2). Higher education in South Africa has made some significant progress in addressing these challenges in the past two decades, including change in student demographics; a focus on student support; and additional allocation of financial aid (Council on Higher Education, 2016, p. ix). Despite comparatively high expenditure on education in the national budget, South African education is still in crisis, and access to education is particularly difficult for poor, rural and black students (Boughey, 2012). In 2013 South African higher education participation rates³ were 16% and 55% for black and white students respectively. The 2015 and 2016 nationwide #FeesMustFall⁴ and

² Children born after the 1994 elections which marked the end of apartheid in South Africa.

³ The Department of Higher Education and Training defines participation rate as percentage of 20-24 years olds enrolled in higher education (Council on Higher Education, 2016, p. 68).

⁴ A movement of student-led protests that took place in higher education institutions across South Africa in 2015 and 2016. The primary goal of the movement was to lobby government to increase funding for higher education and to reduce student fee increases.

Decolonising Education student movements have highlighted the persisting problems of financial as well as epistemological access to education. Throughput rates in 2007 were 19% for black students and 42% for white students (in minimum time for a three year qualification) (Council on Higher Education, 2016, p. 68). Notwithstanding the effects of poverty and social inequalities on students' academic success, there are important questions to be asked about students' epistemological access to higher education.

In the past, up to three-quarters of students studying the Diploma in Landscape Architecture may not have known about landscape architecture before beginning their studies (Griesel & Price, 2017). Many students have not had access or exposure to design and creative subjects, which design schools may typically expect of its applicants. The beginnings of this thesis were prompted by my own teaching experiences and the struggles and complexities I observed in my classes. Because of its European and North American roots, I am concerned that current forms of landscape

architectural education are heavily influenced by dominant Global North perspectives and often, if not always consciously, privilege particular ways of meaning-making or knowledge production. The #FeesMustFall and Decolonising Education movements had a profound impact on how I began to think about my own teaching practices. Many teachers in higher education have had to confront the effects of a single perspective, and are working towards uncovering ethical and responsible pedagogies that embrace diversity. The solution is not to replace one single perspective with another, but to practice a 'hermeneutics of suspicion' (Santos, 2014, p. 44), to be aware of absences and silences (Kerfoot & Hyltenstam, 2017, p. 1) that may be at the margins of the dominant perspective (Milani, 2017, p. 174). Kerfoot and Hyltenstam propose the construction of different 'orders of visibility', "an analysis of the differential effects of meaning-making practices, of the ways in which these foreground certain modes of knowledge and semiosis and render others invisible" (2017, p. 7). This resounds with the notion of 'recognition' in the work of multimodal social semiotic researchers (Archer & Newfield, 2014;

Bezemer & Kress, 2016; Salaam, 2017). Given the inequalities in education in South Africa, students from diverse educational backgrounds are often labelled as 'underprepared' (Jaffer & Garraway, 2016). Researchers in higher education in architecture and jewellery design, Saidi and Nazier (2011), highlight the problem of viewing students' educational background as a hindrance and argue that diverse backgrounds "can serve as critical informants to the design of curricula in design schools" (p. 186). Instead of dismissing meaning-makers as incompetent, deficient, or in need of remediation, pedagogies of recognition focus on the agency, identity, ways of knowing and learning, and resourcefulness of the meaning-maker. "This may mean drawing on resources that were previously unnoticed or devalued since they seemed inappropriate in an educational setting" (Archer & Newfield, 2014, p. 6). This recognition of resources, of changing orders of visibility, opens up the potential not only for alternative perspectives to be present, but also increases students' access to dominant perspectives or viewpoints (Archer & Newfield, 2014, p. 1).

1.3 Aims, approach and research questions

This research is prompted by concerns of the impact of a single-perspective pedagogy, including for example, disconnections between students' everyday experiences and those of the landscape architectural classroom. The aim of this research is illustrated in Image 1.1. If the current dominant form of landscape architectural education is seen as occupying a central or dominant position, and diverse students occupy the margins, how can landscape architectural pedagogy be redesigned so that students make connections between this dominant discourse and their own contexts and experiences? The aim is not to develop a pedagogy that adapts to the majority of the students, but to develop a landscape architectural pedagogy that goes beyond ensuring that diversity does not become a barrier to success. The paradox of diversity is that it cannot be easily defined: student diversity includes differences in gender, sexuality, social class, ethnicity, language, geographical locality, and socio-economic status (Milani, 2017). The

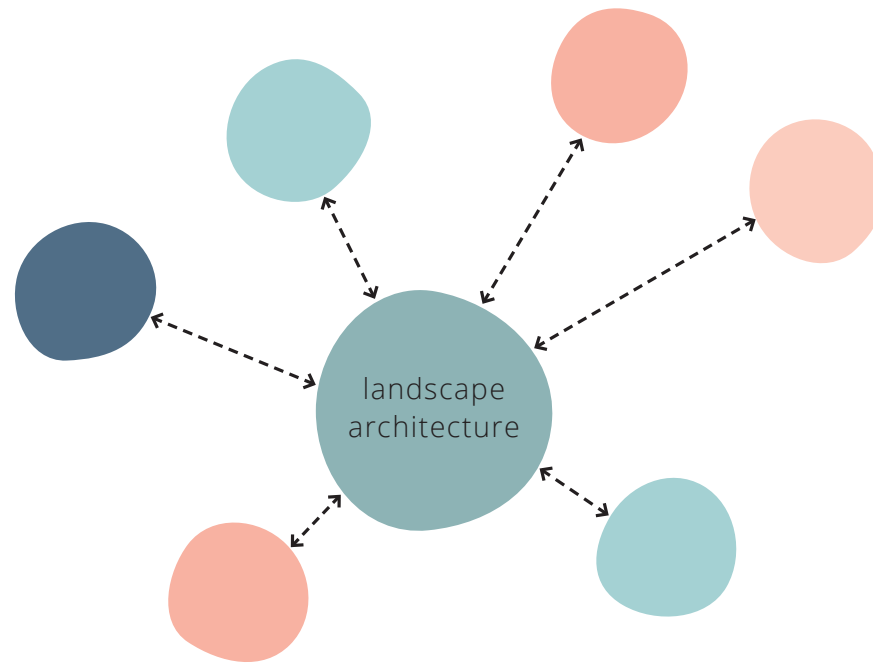


Image 1.1 Diagram showing the potential trajectories or journeys of diverse students learning to become landscape architects

diversity of a class in one year will be different from the next. A multimodal pedagogical approach can be used to recognise and valorise resources that diverse students bring to their learning environment in order that they may both access and challenge the dominant landscape architectural educational discourse.

In grappling with questions around the nature of higher education in Global South contexts, this research has found resonance with a multimodal social semiotic approach. Instead of framing the meaning-maker as (il)literate, (in)competent or (under)prepared, multimodal social semiotics focuses on the meaning-maker's interest, agency, and apt use of available resources in the moment of meaning-making. Multimodal social semiotics has an established relationship with South African education (Archer, 2014b; Archer & Newfield, 2014; Newfield, 2013; Salaam, 2017; Simpson, 2014; Stein, 2008) in its quest to "develop curricula and pedagogies which speak to the diversity of global societies and the development of students' voices" (Stein, 2008, p. 3). A multimodal social

semiotic approach not only promotes an examination of the textual arrangement of signs, but foregrounds interpersonal meanings in terms of affect and power. To develop a multimodal pedagogy for diversity, there needs to be an increase in the recognition and visibility of the rich, complex experiences and resources that students bring to their learning environment and how they deploy these resources within their own meaning-making trajectories. This has been translated into the research questions of this study:

- What resources do diverse students bring to their learning experiences in the context of landscape architectural education?
- How do students mobilise these resources to move between spatial, visual, and verbal modes in a (landscape architectural) design trajectory?
- How can landscape architectural education draw on students' diverse resources to develop a multimodal pedagogy for diversity?

1.4 Outline of remaining chapters

The theoretical framework in Chapter 2 threads together strands of literature from landscape architectural design theory, multimodal social semiotics and multimodal pedagogies. The chapter unpacks landscape architectural theory, practice and education in terms of key concepts in multimodal social semiotics: resources, modes and resemiotisation. It first conceptualises what I have called the *landscape architectural design trajectory* through the lens of multimodal social semiotics. It then deconstructs the meaning-making trajectory in terms of the contexts and resources available at the time of meaning-making: the brief or prompt, interest and agency (Kress, 2010), precedent (Björklund, 2013; van Dooren et al., 2013) and guiding themes (Moore, 2010; van Dooren et al., 2013). In the third section of Chapter 2, the theoretical framework examines the landscape meaning-making trajectory in terms of texts as 'punctuations' (Kress, 2010), multimodal ensembles (Kress, 2010) and resemiotisation (Iedema, 2003; Kell, 2015; Ker, 2015). The chapter draws on landscape

architectural literature (Ching, 2015; Dee, 2013; Lawson, 2001, 2004; Norberg-Schulz, 1979; Rogers, 2001; Tuan, 1977) and multimodal social semiotic literature (Kress & van Leeuwen, 2006; O'Toole, 1994; Ravelli & McMurtrie, 2016; Scollon & Scollon, 2003; Stenglin, 2004, 2008) that provide insight into the meaning potentials of spatial, visual and verbal modes relevant to the study's landscape architectural meaning-making trajectories. The final section of this chapter discusses research into multimodal pedagogies (Archer, 2014a; Archer & Newfield, 2014; Bezemer & Kress, 2016; Newfield, 2013, 2014; Stein, 2008). The resulting theoretical framework is operationalised as a methodological framework for analysis of students' 2D and 3D texts in Chapter 3.

Chapter 3 presents the methodological approach to the study. The research design builds on Chapter 2 by employing multimodal social semiotic and ethnographic perspectives. This research context, which involves a case study of a classroom-based project, is outlined in terms of the research site and participants, as well as ethical considerations. The chapter then discusses the

process of data collection and data analysis. A significant portion is dedicated to developing a comprehensive methodological framework for the analysis of students' 2D and 3D texts produced during the case study. Following Halliday's (1978) Systemic Functional Linguistics (SFL), and drawing on the work of Ravelli and McMurtrie (2016), Stenglin (2004), Ching (2015), and Dee (2013), this methodological framework develops categories of meaning potentials for 2D and 3D texts (in landscape architectural education) in terms of the ideational, interpersonal and textual metafunctions. This methodological framework is used to analyse students' texts in Chapters 4, 5 and 6.

Chapters 4, 5 and 6 follow the logic of the three research questions: the diverse resources students bring to the landscape architectural classroom; tracing the deployment and resemiotisation of resources through the design trajectory; and implications for multimodal pedagogies. Chapter 4 concentrates on constructing different orders of visibility and recognition of students' diverse resources. Initially this chapter explains the

adaptations to the project brief and the development of narrative in the design trajectory in order to widen opportunities for the use and recognition of diverse resources. The chapter then follows a close analysis of one of the students, Malibongwe's⁵, 2D and 3D texts with a focus on recognition and validation of the resources he brings to his learning environment. An in-depth multimodal social semiotic analysis of the texts reveals the interest, contexts, resources and meanings drawn from Malibongwe's experiences and how these are brought into the landscape architectural classroom. The analysis also shows that through recognition of resources and signs of learning, the transformation of resources results in a 'Kressian moment' (Newfield, 2013).

Chapter 5 traces the trajectory of another student, Nadine's spatial model project from initial brief through to her final presentation. An analysis of the texts as 'punctuations of semiosis' (Kress, 2010, p. 120) provides insight into how the resources she brings to her learning environment are realised and transformed

through different modes at different times, as well as the social, interactive and pedagogical resources that she gains during the meaning-making trajectory. Tracing the trajectory in this way, the chapter shows the key moments or moves that contribute to the refinement and realisation of a design resolution.

Chapter 6 draws on the concept of 'remaking' to explore the third research question. The notion of remaking places emphasis on how the students, as remakers of new signs, transform the diverse resources they bring to their designs. This chapter explores students' design processes in relation to risk (Thesen & Cooper, 2014): how students negotiate the 'contact zone' (Pratt, 1999) between their experiential knowledge and the spatial model assessment criteria. Remaking is also explored in terms of processes of resemiotisation in students' design trajectories and the resources and moments that prompt 're(inner)-conceptualisation' (Kress, 2014a), that move their design process forward. Chapter 6 concludes by outlining four guidelines for multimodal pedagogies for diversity. Constructing different orders of visibility of

⁵ All students' names used in this thesis are pseudonyms.

diverse students' resources, while not unproblematic, may facilitate students to access, recontextualise and disrupt traditional landscape architectural conventions and practices.

Chapter 7 concludes by outlining the motivation and rationale behind this research project. It then summarises the key findings of Chapters 4, 5, and 6 and highlights how the research contributes to landscape architectural methods and theories, research in multimodal social semiotics and resemiotisation and multimodal pedagogies for diversity.

CHAPTER 2

Literature review and theoretical framework

2.0 Chapter overview

This chapter develops a theoretical framework by drawing on an ensemble of literature that is relevant to this study, including research in landscape architecture, multimodal social semiotics, and multimodal pedagogies. This theoretical framework provides a language of description that is operationalised as a methodological framework for analysis in the following chapters. The first section connects landscape architectural practice and education to a multimodal social semiotic approach. The subsequent sections focus on literature useful for interrogating each of the broader topics embedded within the research questions: defining resources within the landscape architectural meaning-making trajectory; exploring modes relevant to landscape architectural meaning-making processes; and theorising multimodal pedagogies for diversity.

2.1 Multimodal social semiotics

This section traces how a multimodal social semiotic approach emerged from shifts in understanding of communication and meaning-making. It argues that a multimodal social semiotic approach is of particular relevance to the context of landscape architecture and the educational practices investigated in this study.

2.1.1 Multimodal social semiotics as an approach to meaning-making

Modes are sets of “socially shaped and culturally given” (Kress, 2014b) resources for making meaning within a particular meaning-making community. Multimodality is, increasingly, used as an approach to recognise and understand how a range of modes contribute to meaning-making (Jewitt, 2014b; Kress, 2000). Traditional studies of communication or meaning-making initially focussed around language to the exclusion of other modes. While non-linguistic modes such as music, dance and image have been present in social communities for

millennia, only recently, with the advent of digital and online media, have these modes become ubiquitous in everyday meaning-making processes (Kress, 2000, p. 182). This digital shift in communication has partly prompted research in multimodality: decentering the role of language while providing a space for all modes to be examined, equally, in terms of their potentials and contributions for meaning-making (Kress, 2010, p. 1). Modes seldom exist in isolation, but in relationship with each other, therefore meaning-making activities are multimodal (Kress, 2000, p. 187). Kress recognises that while a multimodal approach can be used to investigate modes, it cannot answer questions about the differences in meanings between various social contexts, and posits that the means to achieve that is through social semiotics (Kress, 2010, p. 2).

Social semiotics is one of three main perspectives that can be identified within multimodal research. Jewitt (2014b) describes these three approaches: a social semiotic approach that focuses on the individual meaning-maker's *interest* and their use of available

meaning-making resources; multimodal discourse analysis which emphasises the metafunctional *systems* that underpin the meaning-making resources that are used by meaning-makers; and multimodal interactional analysis which concentrates on the *moment* of meaning-making that is not just situated in, but inseparable from its context. Multimodal social semiotics is a result of a series of shifts in thinking about meaning-making from early ideas that meaning is innate and language-based, to the view that meaning-making is multimodal, is situated in social contexts, and is constantly evolving. Saussure (1983), considered one of the founders of linguistics, distinguished between *langue*, as a system of language and *parole*, the use of language in social contexts (Terre Blanche et al., 2006, p. 278). Building on the idea that it is not possible to separate language from its social context, researchers such as Dell Hymes (1974) set out to study the use of language, descriptively, as a socially-embedded practice (Johnstone & Marcellino, 2010, p. 3; Mesthrie et al., 2000, p. 12). Following this trend, Halliday (1978) developed Systemic Functional Linguistics (SFL) which was initially taken up by critical linguists (Iedema,

2003, p. 30). Around the 1980s, Halliday's SFL began to be used to understand meaning-making beyond language (Iedema, 2003, p. 32). Kress and Hodge (1988) built on this work, developing a multimodal social semiotic approach to meaning-making. One criticism of multimodality is that its work is permeated with linguistic terms and categories despite being positioned in contrast to monomodal language-dominant meaning-making. As Jewitt counters, multimodality is rooted in Halliday's social semiotic approach to meaning-making and it is this socially-situated focus that differentiates it from language-dominant perspectives (Jewitt, 2014a, p. 29). There is a possibility that the increasing appropriation of linguistic terms and categories in non-linguistic domains of study is subverting any one mode from claiming dominance or proprietorship over these terms (for example, see the discussion in section 2.3 on the use of the term 'text').

Social semiotics explores *semiotics* or *sign-making* as an activity that is heavily influenced by social processes and values (Kress & van Leeuwen, 2006, p. 35). Social

semiotics focuses on the choices of the meaning maker: selecting from a range of resources based on their needs, interests, present situation and social context (Jewitt, 2014a a; van Leeuwen, 2005, p. 5). Resources are multimodal, socially-situated signifiers, objects or actions used to make meaning (Jewitt, 2014a a; van Leeuwen, 2005, p. 4). Semiotic resources have 'affordances' (van Leeuwen, 2005, p. 4) based on past uses and potential future uses. The specific affordances of spatial, visual, verbal and gestural modes relevant to landscape architectural meaning-making processes will be discussed in more detail in section 2.4.

Van Leeuwen (2005, p. 2) argues that social semiotics as an approach is not self-contained and needs to be applied in specific social contexts and combined with social theories. The following section shows that multimodal social semiotics is an apt approach to landscape architectural theory, practice and education.

2.1.2 Connecting multimodal social semiotics to landscape architectural theory, practice and education

Both multimodality and social semiotics connect in meaningful ways to landscape architectural theory, practice and education. Landscape architecture can be described as the design of outdoor spaces with an aim towards sustainable, social, urban spaces (Rogers, 2001, p. 235) and this points to useful connections between landscape architecture, multimodality and social semiotics. Green Point Urban Park in Cape Town, designed by landscape architects 'OvP and Associates', is a showcase of how well-considered spaces can meet diverse environmental and social needs in an urban context. The site of Green Point Urban Park played an important role in the history of Cape Town, but over time had become inaccessible and neglected. The development of the park in 2010 opened up links to green spaces in the city as well as providing a safe and vibrant, multifunctional public space for the Cape Town municipality (OvP Associates, n.d.). Particularly in

projects such as this, landscape architects may work in multidisciplinary teams to develop an appropriate response to a particular site. Design development takes place in an office environment through multiple modes of communication such as freehand drawings and sketches, digital and physical models and computer-aided drawing and presentation techniques. There are formal and informal presentations of work-in-progress with other design consultants (such as architects and engineers), clients, users and local governmental regulators and stakeholders. While landscape architects do produce written documents such as emails and bills of quantities, language is not the dominant mode, rather visual and spatial modes are foregrounded. A multimodal approach is thus particularly useful and relevant to understanding multimodal landscape architectural practices, coupled with social semiotics which frames the socially-situated meanings of landscape architectural design.

The landscape architectural classroom attempts to simulate the landscape architectural practices described

above. Students engage in multiple design projects of varying physical and social contexts (although some are fictitious) and are required to communicate with peers and lecturers verbally, through drawings and models, digital presentations and written documents and reports. Multimodal social semiotics offers an approach to pedagogy that promotes “education reconstruction, of inclusivity, of expansion of the horizons of possibility and of democratic practice” (Newfield, 2013, p. 145). Multimodal social semiotics found traction with pioneers of multimodal education in post-Apartheid South Africa such as Newfield (2013, 2014), Archer (2013, 2016) and Stein (2008). In response to pedagogies that focus on students’ ‘competence’ in making meaning, social semiotics provides potential for situated meaning-making that is transformative, and celebrates the agency of both the teacher and the student (Newfield, 2013, p. 143). It is in this spirit that this thesis stands on the shoulders of the giants of South African multimodal social semioticians, and why this approach is core to this study. A multimodal pedagogy for diversity is further explored in the final section of this chapter.

2.2 Use of resources in landscape architectural design processes

In order to situate the research question, 'what resources do diverse students bring to their learning experiences in the context of landscape architectural education?', this section frames the processes involved in landscape architectural design within a multimodal social semiotic approach. This section first unpacks the landscape architectural design process and makes the argument that this design process is similar to any meaning-making process. The discussion focuses on the potential resources and prompts available at the moment of design, as well as a detailed description of the role of precedent and guiding themes as resources.

2.2.1 The landscape architectural design process

The landscape architectural design process is not unlike any other meaning-making activities, however this process tends to take place over a long timeframe.

In social semiotics, any meaning-making process, the selection of appropriate resources for a particular situation, by definition, is considered 'design' (Kress, 2010). Meaning-making or 'design' takes place using different materials and different timescales, for example a gesture is momentary but the arrangement of furniture in a room has a longer meaning-making timescale (Scollon & Scollon, 2014, p. 213).

Each of these bodies or materials communicates within a distinct mode (human body placement, room furnishings, interior design, building construction) and each has a typical rhythm or time-scale within which it moves through the cycle from production through to dissolution or dissipation of its meaning. (Scollon & Scollon, 2014, p. 213)

Compared to the spontaneous meaning-making processes of everyday conversation, landscape architectural meaning-making is a longer, carefully considered process (Hillier, 2008, p. 222). Perhaps if we could take a microsecond of the semiotic resources

and processes involved in everyday conversation and could stretch this microsecond over a longer period of days or weeks we would see the landscape architectural designer making selections from a range of resources, testing these according to the needs and context of the brief, and making adjustments before settling on the most appropriate combination of resources for making meaning (Moore, 2010, p. 132; Schön, 1987, p. 71). Beyond this 'moment' (Kress, 2010; Newfield, 2013) of design, the built effects of this meaning-making process persist long after the process of their production. Moore's explanation that landscape architectural design "is a snapshot of what we believe and value at a particular time in response to a particular problem and context" (2010, p. 132), is not unlike meaning-making as described by social semiotics, with the clarification that landscape architectural design is an iterative and ongoing process. While 'design' is involved in any meaning-making process, in the context of this research study it will imply a specific reference to the landscape architectural meaning-making process.

Landscape architectural designs are not neutral or impartial, they are constantly evaluated and assessed by other professionals, clients, users and design competition committees. Contemporary landscape architectural canon and practice tends to place value on certain characteristics such as responsiveness, resilience, legibility and accessibility. Design projects that are considered 'successful' tend to meet these characteristics. *Responsive* design is conscious of the site: its functions, connections, processes, contexts and socio-economic environment. There is a tendency for landscape architecture to blend in to the surroundings although even iconic or conspicuous landscape architectural projects may respond to the physical or conceptual context. *Resilience* is a term that is gaining popularity in landscape practice as it not only refers to environmental sustainability but also economic and social sustainability, including the promotion of health, safety and resource independence. *Legibility* refers to landscapes that are coherent, that can be 'read' and understood by its users and *accessibility* can mean both physical access, equality and inclusivity.

Other characteristics that are valued in particular circumstances include *originality*, *flexibility*, *integration* and *multifunctionality*. In terms of *aesthetics*, the adage 'form follows function' is often preferable to pure pattern-making. In contemporary landscape architecture there is a tendency towards form generation that is influenced by processes and natural forces (S. Herrington, 2017, p. 43). While aesthetic considerations do play a role in the appreciation of a design, in some instances, aesthetics may be secondary to other values such as responsiveness and resilience. These values are part of the canon of landscape architecture. As discussed in later chapters, landscape architectural design education has a responsibility to recognise and validate the resources diverse students bring with them, while at the same time ensuring students are not excluded from accessing and contesting this canon.

2.2.2 Potential resources available at the moment of design

There are a number of components present at the moment of design. Image 2.1 maps the concepts that are pertinent to the design processes in the landscape architectural classroom. Design is always in response to a prompt (1). Kress (2014a) describes an 'inner conception' (2) that a meaning-maker develops in response to a prompt. This inner conception may remain internal and may not be realised. If the designer chooses to engage in a meaning-making process, this will involve the transformation of resources (3), consciously and unconsciously selected from a range available at the moment of meaning-making. The designer may also make use of guiding themes (4) to aid the selection of resources. The result of this design process (5) is a text (6). Particularly in the context of landscape architectural education, these texts are presented as a multimodal ensemble (7) in a group crit. This crit discussion may help the designer to identify potential changes to their text as they move in the direction of their design trajectory

(8) where iterations of the text are produced. The third section of this chapter will expand on the components in the right-hand side of Image 2.1: the text and its multimodal ensemble within the larger design trajectory as well as the concept of resemiotisation. Although they are resources, the concept of modes, and by association, materials, will be addressed separately in

the fourth section of this chapter.

In the design process, the meaning-maker draws from available resources in order to realise the text. Social semiotics focuses on semiotic resources, “the actions, materials and artefacts people communicate with” (Jewitt, 2014a, p. 17). Semiotic resources carry

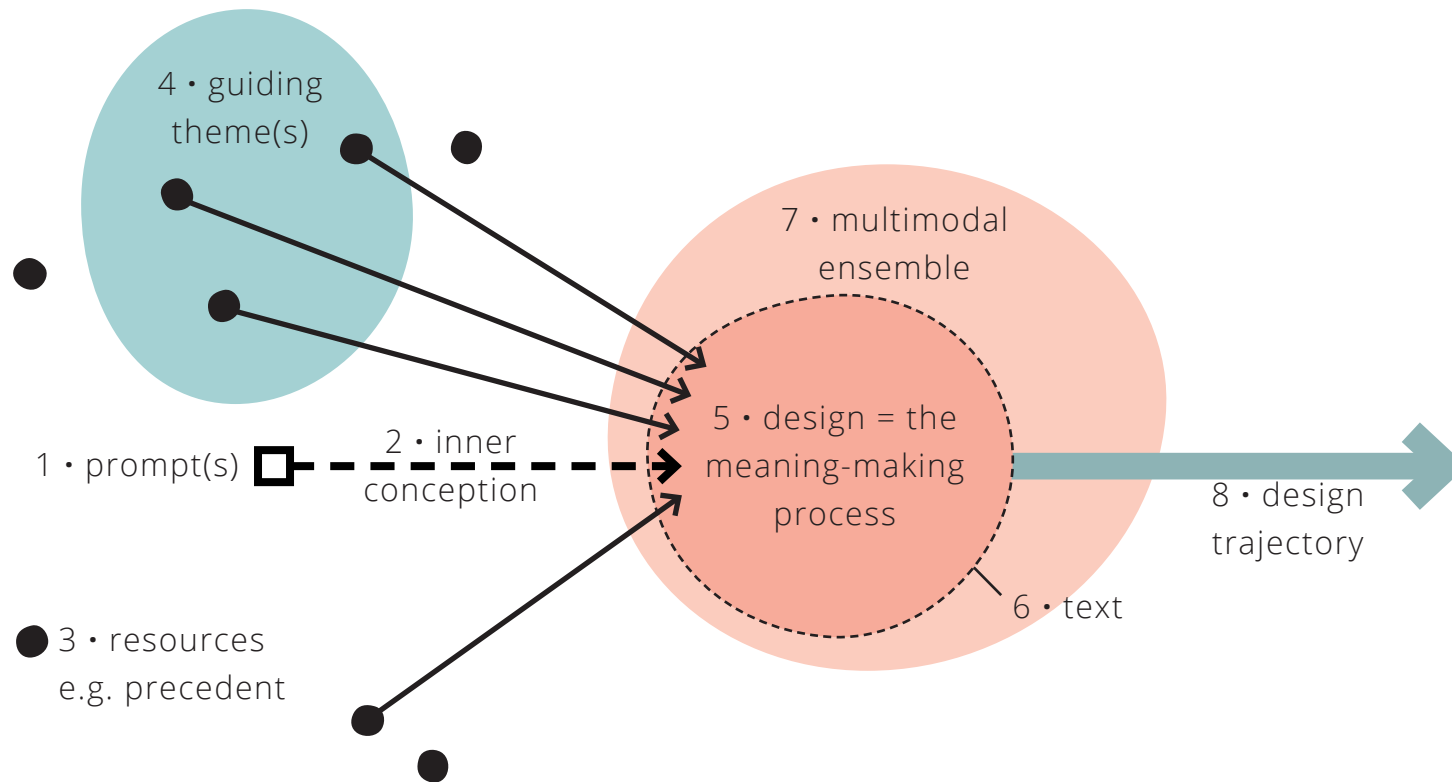


Image 2.1 Diagram showing components of the meaning-making processes in landscape architectural education

a history of meaning potentials and affordances that determine how they may be used. Meaning-makers are viewed as '(re)-makers' (Kress, 2010, p. 69), mediating this history of meaning potentials and affordances by transforming semiotic resources. Semiotic systems, semiotic practices, modes, media and genre are the products of how particular communities use and shape semiotic resources, although these are constantly changing over time. The use of the term semiotic resources (representational resources and meaning-making resources are also used synonymously) is prolific in social semiotic research, although there is acknowledgment of other types of resources. Kress (2010, 2014a), for example, mentions material resources, theoretical resources, cultural resources, abstract resources, graphic resources and conceptual resources in meaning-making. Harrop-Allin (2014), exploring *xoxisa*, a story-telling game played by many black South African children, recognises the children's resources that they draw on, including story-telling resources, artistic resources, material resources, cultural resources, educational resources and musical

resources. This thesis contributes to this broad recognition of types of resources. While not exhaustive, this thesis identifies the linguistic resources, semiotic resources, social resources, experiential resources, pedagogical resources and interactive resources that students may draw on in their spatial model trajectories. Precedent and guiding themes are also types of resources that relate to landscape architectural design processes and are discussed in more detail below.

Meaning-making prompts

Meaning-making is often a response to various prompts. These prompts may be external, such as a design brief given by a client or a lecturer, or may be internal, for example, 'interest' (Kress, 2010) (see discussion below). In landscape architectural design practice, the prompt may comprise more than the explicit instructions from the client or stakeholder. The landscape architect is also responsible for identifying tacit prompts such as the physical site; its socio-economic-environmental contexts; potential users, activities, connections

and processes. Successful, *responsive* designs may appropriately address an extensive, as opposed to narrow, range of prompts. The brief from the client for Green Point Urban Park was:

To transform what had become a dysfunctional public open space into a vibrant public amenity and destination point for the people of the Cape Metropole; through the construction of a high quality multifunctional park that would contribute to the identity and overall regeneration of the Cape Town city bowl; as well as the well-used Green Point and Sea Point beachfront. (OvP Associates, n.d.)

The design team, however, had to develop a more detailed prompt that included elements from the quality and condition of the soil on site, to the microclimate, to addressing issues of crime and safety. The approach to prompts in landscape architectural education may be different to practice. In a landscape studio subject for example, the project brief may be restrictive in order to focus on certain aspects of the design process.

The particular focus of the studio project used in this study is the making of three dimensional models that spatially represent an experience for a hypothetical user, based on a narrative. In the pedagogical approach to the project researched, there is only a vague sense of location, site and context. The primary prompt that the student must respond to is the narrative that they develop at the beginning of the project.

Interest is part of the meaning-making prompt. Choices in the meaning-making process are not value-free and are shaped by the individual designer's *interest* at the moment of design (Kress, 2010). The designer's interest is guided by what they find 'criterial', the meaning they wish to express at that particular moment, and is shaped by their history, experiences, social context, and their sense of what is relevant to their social situation (Kress, 2010, p. 50; MODE, 2012). Each meaning-maker's interest in the world is different and unique and constantly changing (Kress, 2000, p. 71). In social semiotics, the recognition of interest foregrounds the agency of the meaning-maker. In the case study,

students' interests shaped their choice in narratives. For example, students chose narratives based on traditional isiXhosa stories, global environmental degradation, South African historical and political events, movie plots and personal experiences.

Precedent as a resource

'Precedent' is a (landscape architectural) design term that refers to the socially-situated history of (landscape architectural) meaning-making. Designs are often made in response to existing designs in the world (Salaam, 2014, p. 194). Landscape designers are aided by a repertoire or library of patterns and existing designs stored in their minds: resources that can be copied, combined and transformed into new designs. Björkland (2013), studying the differences between novice and expert designers found that "experts have superior extent, depth and detail in their representations, accommodate for more interconnections both within the problem information and between the problem and previous knowledge, and approach the problem in a

more proactive manner" (p. 151). Therefore, in terms of social semiotics, expert designers have access to a larger range of 'well-acknowledged' (Mavers, 2007) resources from which to draw on, as well as the ability to discern the nuances of the 'problem': the needs and context of a particular meaning-making situation. This idea that designers have access to a range of resources can be described in the landscape architectural discipline as 'design precedent'. While students may not have a large range of landscape architectural precedents available, their experiences, skills, ideas, procedures, norms and materials are all 'precedent' resources that can be drawn on during the landscape design process. Particularly in decolonising educational contexts, this method of student-generated precedent is a move towards recontextualising landscape architecture to include a diversity of design precedent and perspectives.

Guiding-themes as resource

During the design process, the use of 'guiding themes' can assist a designer to make appropriate choices for

each particular project (see Image 2.1, 4). The word 'appropriate' signals an important aspect of landscape architecture: that designs can be evaluated (and ranked) according to how effective they are in terms of responding to the needs of the brief as well as the environmental, social and economic context of the project (Rogers, 2001, p. 16). Landscape architectural design is a response to often complex, culturally contested situations and it "takes real skill to avoid creating a compromised mishmash given all the demands made by various stakeholders, accommodating the many different expectations and using them to strengthen rather than dilute the concept" (Moore, 2010, p. 184). In order to avoid this 'mishmash' designers often make use of a 'guiding theme' which could be a concept, symbol, paradigm, pattern or narrative (van Dooren et al., 2013, p. 62). Regardless of the nature or form of the design, these guiding themes are helpful as they focus the design character and identity, and assist the designer in selecting which resources, from a wide range, are the most appropriate for the particular project.

As an example, the Garden of Remembrance at Freedom Park in Tshwane, designed by Newtown Landscape Architects, illustrates how the idea of specific guiding themes (such as symbols, concepts and narrative), shape design decisions. The project brief for Freedom Park was for it to be a monument to the story of freedom in South Africa (G. Young, 2012, p. 195), a monument of reflection but also of healing. Guiding themes can take the form of concepts. One of the main concepts that influenced the landscape design at Freedom Park is *Isivivane* (G. Young, 2012, p. 206). *Isivivane* is an isiXhosa word meaning 'cairn or mound of stones'. The use of the concept of *Isivivane* at Freedom Park is multilayered, referring to symbols, multiple narratives and cultural practices. The use of rocks in the *Isivivane* space in Freedom Park, evokes universal symbols of the sacred, timeless, resting places, monuments and shrines (G. Young, 2012, p. 206). Another meaning of *Isivivane* is the custom of travellers passing a village, breathing on a stone and placing it on a heap of stones, bringing good luck to the traveller and paying homage to the landscape. An abstracted version of this narrative is

acknowledged in a sloping packed-stone wall between the *Isivivane* space and the spiral pathway (G. Young, 2012, p. 208) in the Freedom Park project. A guiding theme therefore, is not a pattern that is applied over a design, but a semiotic resource, a set of ideas that the designer uses to make particular decisions, to reframe investigations and define relationships (Moore, 2010, p. 194). In terms of social semiotic framing, a guiding theme could assist a (student) designer to narrow down the selection of available semiotic choices thus creating a cohesive design that is appropriate to the specific brief and context.

Guiding themes can help to create legibility, or a sense of coherence for users. Van Leeuwen (2005, p. 7) describes the idea of 'framing' as either creating a disconnection of elements by the use of frames, borders or edges, or the opposite, of bringing elements together in some way. Through framing, concepts or narratives are able to pull together separate spaces of a landscape design. Hymes identified that narratives are common to many communities and cultures (Johnstone & Marcellino,

2010, p. 9) and have the ability to link intangible memories, experiences and timelines to a physical, tangible place (G. Young, 2012, p. 196). Although the designer can attempt to provoke emotional reactions to a place, the primary function of a guiding theme is to guide the designer and not necessarily be evident to the users of an installed space (Moore, 2010, p. 194; G. Young, 2012, p. 199). These guiding themes do not claim universal truth (Moore, 2010, p. 160), but a given interpretation of a particular set of values of the meaning-maker. As Young suggests, meanings can also be developed by others or added to over time (2012, p. 199).

This subsection has expanded on the resources that are available at the time of meaning-making, including the brief or prompt, precedent and guiding themes. In Chapter 3 an analytical framework is developed to understand the ideational, interpersonal and textual meanings of students' 2D and 3D landscape texts produced in their spatial model trajectories. This analysis is applied to texts to identify some of the resources that

were drawn on at the time of meaning-making. This framework aims to change 'orders of visibility' (Kerfoot & Hyltenstam, 2017) of the resources that students draw from, but still has limitations and cannot identify all of the resources that were present or drawn on in the meaning-making process. Texts produced in the landscape architectural design process are often not isolated and are refined or linked to other texts in a meaning-making trajectory (Kell, 2008). The following section examines this larger trajectory (Image 2.1, 8) in more detail.

2.3 Resemiotisation and trajectories of texts as multimodal ensembles

Landscape architectural texts seldom exist in isolation and are usually redesigned in multiple iterations in ongoing design processes (Corner, 1999). The first subsection outlines the landscape design trajectory in terms of the relationship between 'texts' and 'strips' (Kell, 2015), and texts as 'multimodal ensembles' (Kress,

2010). The second subsection introduces the concept of resemiotisation and its potential value in tracing the movement of texts and meanings in students' design trajectories (Kell, 2015).

2.3.1 The landscape meaning-making trajectory

Image 2.2 shows the meaning-making trajectory of the landscape architectural design process, as well as the simulated classroom practice. The trajectory includes moments of 'fixing' texts, which Kress describes as 'punctuations' in the 'flow of semiosis' (Kress, 2010, p. 121). These texts are moments of "relative stasis and stability in ongoing transmodal processes of meaning-making" (Newfield, 2014, p. 103). The semiotic processes between one text and the next is what Kell (2015) terms a 'strip': "a series of events within the same participant framework". Kell's (2015) model provides a way of examining what is projected from one strip to another and is useful within this study to investigate how meaning-makers mobilise resources to move their

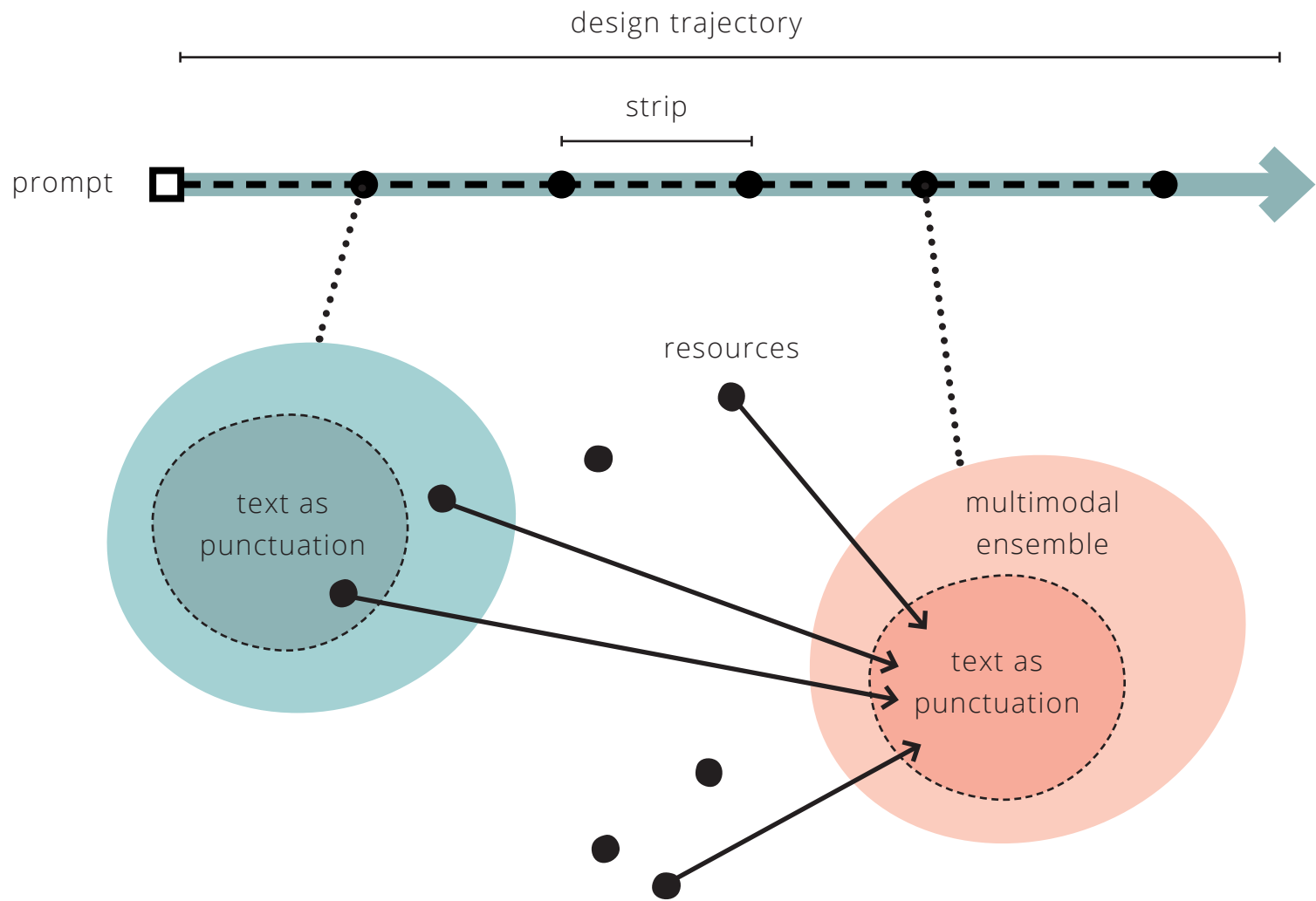


Image 2.2 Diagram showing texts as multimodal ensembles within a landscape architectural design trajectory

trajectories forward along a particular design direction. This connects to the concept of resemiotisation, discussed in the next subsection, and is relevant to the second research question 'how do students mobilise these resources to move between spatial, visual and verbal modes in a (landscape architectural) design trajectory?'

Although an argument could be made that the word 'text' is incongruous with a multimodal approach that seeks to move away from linguistic structures, there is an observable tendency within the multimodal community to use the word 'text' to mean any product of the meaning-making process. "A textual product is understood to be a material form in which meaning is realised" (Stein, 2008, p. 11). 'Texts' have been referred to in terms of image and layout (Kress & van Leeuwen, 2006); buildings and their spaces (Insulander, 2019; Ravelli & McMurtrie, 2016; Stenglin, 2008); and classroom poetry, stories and the *Tebuwa* cloth (Newfield, 2014). Although there are other terms used in multimodality such as 'object' and 'artefact' (Salaam, 2017), the term

'text' is more appropriate in this research as it can refer to physical landscape spaces, as well as sketches, drawings and models produced in the landscape design practice and education.

The designer may produce various texts during the process of design. These texts provide the designer with the opportunity to engage in informal 'crits' with peers or consultants and more formal presentations to clients or stakeholders. In design education, the crit or review is a social practice found in many settings including architecture and landscape architecture. The aim is not to criticise, but to provide guidance and commentary on the student's work (Ivarsson et al., 2014). During a crit, the designer and reviewers gather around the text, the designer communicates by using verbal and gestural references to the text. This multimodal interaction between designer, reviewer and text can be considered a *multimodal ensemble* (Kress, 2010). The modes within a multimodal ensemble each contribute, often unevenly, to the overall meaning, combining in different ways, making use of different resources at different times

(Jewitt, 2014a; Newfield, 2014, p. 102). The meanings between the modes may be aligned or complementary but may also be in conflict or tension (Jewitt, 2014a, p. 27). To illustrate the role of different modes in a multimodal ensemble, Luff, Heath and Pitsch (2014) describe a case study of two architectural designers discussing the early-stage design for a museum gallery. Their fine-grained analysis of this design conversation revealed that no single mode could solely provide the resources necessary for a person to understand the exchange: speech, gesture, drawing, even the differences in pressure of a pencil on the paper (Luff et al., 2014, p. 315), made different contributions to the meaning-making process.

The material activity over and on the page, particularly how they point, gesture and manipulate their pens, is therefore critical to how they discuss features of the design and also how each makes sense of the actions of their colleagues. (Luff et al., 2014, p. 317)

The design process is enhanced by feedback from the reviewers of a text and its presentation. Teachers in a studio crit may engage in several ways with the student's presentation and text, including adding their own analysis of the text, asking questions of clarification and making suggestions for changes (Goldschmidt et al., 2010, p. 287). Through the dialogue between the designer and reviewer there is an unfolding co-construction of meaning. In this study, crits can be thought of as interactive and tacit pedagogical resources (Belluigi, 2016, p. 26) that students can draw from in subsequent strips of their design trajectory.

While strips are often separated by fixings of texts, additional texts may also be produced during a strip. Selander describes sketching as "a process of choices and tentative fixing points within sequences of work, in which salient qualities are elaborated upon" (2013, p. 127). This concept of sketching applies to processes in any mode from film-making to writing. It provides a way of thinking about the multimodal texts a designer may produce during a 'strip'.

Having described the elements and components of the design trajectory, the following subsection introduces the notion of resemiotisation, which when applied to this study, provides a way of understanding how and why particular resources are used in different moments and how meanings may change between strips in the design trajectory.

2.3.2 Resemiotisation

Resemiotisation is a useful concept to address the research question 'how do students mobilise these resources to move between spatial, visual and verbal modes in a (landscape architectural) design trajectory?' Resemiotisation is used to trace the movement of students' choice of resources through their multimodal meaning-making processes. A multimodal approach addresses the decentering of language and questions traditionally-understood boundaries of modes by blurring the lines between them (Iedema, 2003, p. 33). This blurring of lines between modes is evident in the discussion of multimodal ensembles within a meaning-

making trajectory and shows that modes do not function in isolation. In order to describe and analyse the relationship between modes, Iedema (2003) defines the concept of 'resemiotisation' as "how meaning making shifts from context to context, from practice to practice, or from one stage of a practice to the next" (p. 33).

Resemiotisation can be understood in relation to overlapping concepts such as transformation and transduction (Kress, 1997, 2010) and the notion of the 'transmodal moment' (Newfield, 2014). Kress defines *transformation* as changes in meaning within the same mode, and *transduction* as changes in meaning from one mode to another (Kress, 2010, p. 43). Newfield (2013, p. 147) describes the 'transmodal moment', in educational contexts, as transformational and liberating moments where new meanings are reconstructed into multiple modes. The changes of meanings in the landscape architectural meaning-making trajectory of this study occur within multimodal ensembles, between different modes (transduction or transmodal) or within the same mode (transformation). To avoid confusion

between these three terms, this study consequently aligns with Ker (2015, p. 19), who argues for the use of the term resemiotisation because of its focus on changes in meanings in new settings, regardless of mode. Resemiotisation places emphasis on the *process* of remaking and how this impacts form and meaning (Mavers, 2011, p. 106). This particular focus of resemiotisation enables tracking both material and conceptual changes to texts as they ‘punctuate’ (Kress, 2010) students’ design trajectories.

In this section I have framed the landscape architectural meaning-making process in terms of a multimodal social semiotic approach. The discussion examined the role of multimodal ensembles within meaning-making trajectories. The following section unpacks the meaning potentials of modes within a landscape architectural multimodal ensemble, namely the spatial, visual, verbal and gestural modes.

2.4 Modes and their affordances for landscape architectural design

Modes are semiotic resources, combinations of socially-shaped resources for meaning-making in a particular community. Modes have different potentials or affordances which affect choices in use (Jewitt, 2013, p. 253; Kress, 2010, p. 78). Kress (2010) suggests that to study a mode in multimodal social semiotics would be to investigate “the *material*, the *specific*, the *making* of signs *now*, in this environment for this occasion” (p. 13). While this study’s first research question aims to identify the range of diverse resources students bring to their learning environment, the second research question hones in on ‘how students mobilise these resources to move between spatial, visual and verbal modes in a (landscape architectural) design trajectory?’. This second research question has two parts: firstly, the ways in which students use resources to make meaning in visual, spatial and verbal modes; and secondly, how meaning-making is resemiotised as students move between these modes. While Chapter 3 will describe

a framework of meaning potentials for students' 2D and 3D texts, this section will attempt to frame the concepts and theories developed by researchers in the communities where these modes are relevant. This section is set out in three parts: the first subsection brings together relevant theories on meaning potentials of space. The second subsection draws on literature that provides insight into the meaning potentials of visual modes relevant to the texts produced in this study: landscape 2D drawings and 3D models. These first two subsections form a theoretical framework for the development of an analytical framework in the methodology chapter. Although verbal and gestural modes are not included in the analytical framework, their contributions to multimodal ensembles are discussed in the last subsection.

2.4.1 Space as mode

Landscape is defined by Bruns et al. (2017, p. 15) as the human and non-human material phenomena, features and processes, and our perceptions of these.

The landscape comprises three aspects: the image or perception of the landscape, the structure or fabric of the landscape and the actions or processes that take place in it (Bruns et al., 2017, p. 15).

The aim of the discussion in this subsection is to identify theoretical views and understandings of space and to reframe these within a multimodal social semiotic approach. One of the ways for determining a mode is that it includes Halliday's (1978) three metafunctions: ideational meanings, interpersonal meanings, and textual meanings (Kress, 2010, p. 88; MODE, 2012).

As professional analysts and designers, we concern ourselves very much with organizational meaning in an instrumental sense: as a means to orientational and presentational ends. (Lemke, 2002, p. 306)

While all three metafunctions are operationalised in the methodological framework in the next chapter, this discussion takes up Lemke's challenge to investigate meaning beyond the textual composition and attempts

to frame space in terms of ideational and interpersonal meaning potentials.

Space is the opposite of form or mass (Dee, 2013, p. 32). Although it is not an object itself, the perception of space is shaped by surrounding objects or planes, broadly categorised into three types: ground, wall and overhead (sky) planes (Ching, 2015; Dee, 2013; S. Herrington, 2017). Contemporary theories of space however, recognise that space is not neutral (S. Herrington, 2017, p. 76), it is more than an empty abstraction or a set of points in a Cartesian plane (Lefebvre, 1991, p. 12). Space is the product of local and global interactions and is always in the process of being made (Adami, 2018; Massey, 2005, p. 9). Lefebvre's (1991) notion of the *production of space* suggests that physical, everyday *lived* spaces, the *conceived* space of designers and planners and the *perceived* space of social spatial practices are indistinguishable. Although we can discuss the meanings of space in terms of Halliday's three metafunctions, these meanings are intertwined and cannot be separated. Configurations of

space (textual) influence both people's use (ideational) and experiences (interpersonal) of space (Dee, 2013, p. 36; Stenglin, 2008). The various theories of space can be likened to art history movements, each with their own agenda and reaction to particular situations. As Corner (1999) notes, there are moves in contemporary landscape architectural spatial theory from viewing space in terms of forms, to understanding space in terms of natural and social processes.

Ideas about spatiality are moving away from physical objects and forms towards the variety of territorial, political and psychological social processes that flow through space. The *interrelationships* amongst things in space, as well as the *effects* that are produced through such dynamic interactions, are becoming of greater significance for intervening in urban landscapes than the solely compositional arrangement of objects and surfaces. (Corner, 1999, p. 227)

This demonstrates that landscape architectural theory may benefit from a social semiotic approach

which foregrounds not only textual and ideational, but interpersonal meanings of texts. Without trying to extensively map spatial theories (for this see (S. Low, 2017), the following sections draw on key theories that are relevant to this study and the development of a methodological framework for the analysis of students' 2D and 3D texts.

Ideational meaning potentials of space

The ideational metafunction is concerned with how people make meaning of their experiences (Stenglin, 2014, p. 420). In terms of spatial texts, ideational meanings uncover what something is for, or what it stands for (Ravelli & McMurtrie, 2016). Kress and van Leeuwen's ideational meanings of images include how events, objects, participants and processes have been *represented* (Kress & van Leeuwen, 2006; Unsworth, 2008, p. 3). Unlike images, spatial texts exist beyond representations of the world: they *are* the objects, participants and processes in the world. Green Point Urban Park, as an example of a spatial text, comprises

objects such as benches, pathways, planting; participants such as people and dogs; and events or processes from seasonal change to recreational activities. At the same time as being in the world, spatial texts also include representations of meanings. A bench, for example, could be dedicated to a person who has passed away. Some benches in urban areas have multiple arm rests to prevent homeless people from sleeping on the benches, and to discourage skateboarders from performing tricks on benches. These benches could be seen as representations of regulations that determine the types of people and activities that are permitted in certain spaces.

Scollon and Scollon (2003) developed a theoretical framework, 'geosemiotics', to study "the social meanings of the material placement of signs" (p. 4). Scollon and Scollon drew on the work of Peirce (1955), who determined three ways in which a sign could have meaning: as an icon, or symbol or index (although signs can be all three). Icons are signs that are recognisable objects in the world, for example a smiling emoticon

has the same features as a smiling person. A symbol maintains an abstract and arbitrary connection between the sign and its meaning, for example, a red traffic light that means vehicles should stop (Scollon & Scollon, 2003, p. vii). An index is a sign that has meaning because of where and when it is placed in the world. For example, a signboard with an arrow, installed on a street, may indicate the direction of traffic to drivers. The same sign hidden in a storage room, for example, does not convey the same meaning (Scollon & Scollon, 2003). Scollon and Scollon's (2003) work in geosemiotics is based on the notion that all signs are indexical: signs are located in the world and aspects of their meaning are dependent on their context and location in time and space. In applying their approach to landscape spaces, not only are signage boards signs, but people are signs, benches are signs, and pathways are signs.

At a practical level, O'Toole (1994, p. 86) explores the ideational meanings of architectural spaces in terms of their generic functions (public, private, industrial, commercial), activities (access, work, administration,

sleep, storage), primary use (entry, living, eating, washing) and basic needs (light, air, heat, sound). To expand on this notion of function within landscape architecture, Dee (2013) defines landscape architecture as the spatial organisation of outdoor spaces that meet human and environmental needs such as social, cultural, environmental, aesthetic, practical and economic functions (p. 1). Similar to Maslow's hierarchy of needs, people have a hierarchy of requirements of landscape spaces from basic requirements such as light and air, to needs such as security, identity and stimulation (Lawson, 2001). As discussed, landscape architectural spaces may also be required to express qualities such as resilience, legibility, responsiveness and accessibility.

Ideational meanings include what something 'stands for' (Ravelli & McMurtrie, 2016). An example of this is how different cultures and communities attach particular meanings to specific spaces or locations. The meanings of ancient gardens were often sacred, the meaning of the space was linked to its specific location (Rogers, 2001, p. 103). The meanings of contemporary landscape

designs may also be connected to some characteristic of the landscape or an event that took place at the particular geographic location. These meanings are socially-embedded and not necessarily explicit: knowing the stories of spaces gives them more meaning. Tuan (1977) describes how physicist Niels Bohr and Werner Heisenberg's visit to Kronberg castle was affected by the suggestion that Shakespeare's Hamlet had lived there (p. 4). The Nelson Mandela capture site in the KwaZulu-Natal midlands, for example, remembers the exact site that Nelson Mandela was arrested on 5 August 1962. The road is particularly ordinary and unremarkable, yet because it was the site of Nelson Mandela's arrest, communities have given that particular place in the world, a particular meaning.

Conversely, different communities and individuals endow spaces with meanings regardless of their location. Many contemporary landscape designs also make use of symbolism that references ideas about the world. The meaning is not tethered to the specific location, the same meaning could exist if the space

were located elsewhere. Paradise gardens, a genre or style of landscape design, commonly contain a central water feature with four channels flowing from it. This water feature is a symbol of the Garden of Paradise as mentioned in the Quran, and the four channels represent the four rivers of Paradise, flowing with milk, honey, water and wine (Don & Moore, 2018, p. 53). As discussed in the section on resources, narratives and guiding themes can be used to give landscape spaces meanings. Despite communal meanings of spaces, meanings are subjective. Individuals may experience the same space differently and the same person may experience a space differently when visiting it at different times. Landscape architectural theorist, Christophe Girot (1999), explains a method of investigation and exploration of landscape sites through *trace concepts*. One of these four concepts, *Landing*, encourages landscape designers to acknowledge their unique and subjective impressions of a landscape site (Girot, 1999).

Ideational meaning potentials of space may be linked to horizontal and vertical planes (Tuan, 1977, p. 34). The

form of a person moving through space sets up axes relative to their physical engagement in a space: front and back, right and left, top and bottom, and vertical and horizontal (Tuan, 1977, p. 35). These axes may be imbued with symbolism and meaning potentials in particular communities, for example, back space may be analogous with ideas of the past (Tuan, 1977, p. 41). Meaning potentials of axes could also relate to the cardinal points. In his article on the relationship between the Khoisan and the wind, Chris Low writes an account of what the wind means to his friend and translator, Suro:

The north wind [*ao* ≠ *oab*] brings flies, colds, and coughs. The west wind brings biting flies to Khowarib [a nearby settlement]. The west wind brings out snakes, scorpions, and a many-legged khaki-coloured spider-like creature, *an* ≠ *harare*. (C. Low, 2007, p. 73)

Writing about potential meanings of cardinal points with reference to the arrival of the Spanish to the Aztec city of Tenochtitlán, Massey (2005) explains that not

only did the Spanish arrive in a particular time that was significant to the Aztecs, but “they were arriving from the geographical direction which, in these time-spaces, was held to be that of authority” (p. 1). It is clear that directionality has semiotic meaning, which varies in different contexts. Perhaps because of the physical effort required to move vertically, raised ground may include meanings such as wealth, power and significance (Tuan, 1979, p. 395). This is a common narrative found in monoliths, pyramids, obelisks, hill cities, towers, spires and skyscrapers of many cultures across human space and time (Tuan, 1979, p. 396). Although common, these narratives are not universal: conversely, sunken ground could also symbolise importance or significance, such as the sunken stone-cut churches in Lalibela in Ethiopia.

The ideational meanings of space are never fixed or unchallenged: space is varied, heterogenous, and includes multiple viewpoints and trajectories (S. Herrington, 2017, p. 76; Massey, 2005, p. 9). Space, as the product of local and global relations and social practices, is always in the process of being made

(Massey, 2005, p. 9). Space is an open system where everything is related, but at times, connections may be juxtaposed or disconnected (Massey, 2005, p. 11). Designers of space may fall into the habit of imagining it from only one point of view. In light of this Massey (2005) calls for “a fuller recognition of the simultaneous coexistence of others with their own trajectories and their own stories to tell” (p. 11).

Interpersonal meaning potentials of space

Processes, interaction and human behaviour can not be separated from space (Lawson, 2001, p. 4). The interpersonal function is concerned with the social relations between the space, its users and makers (Jewitt, 2014a, p. 25 b; Stenglin, 2014, p. 421). As with any mode, the nature of space is intrinsically linked to social and cultural values, including social identities, power and individual expression. Thus, designers of space can replicate social ideologies and power relations (Degen, 2017, p. 144) and space can be socially contested. In trying to understand why some communities ‘resisted’

urban regeneration designs, Degen (2017) studies the impact of urban design on el Raval, a marginalised neighbourhood in Barcelona. Her criticism of el Raval’s regeneration is that the gentrification process was aimed at attracting outsiders to the area and was not focused on understanding the needs of the el Raval communities (Degen, 2017, p. 143). In addition to this, she finds that the prolonged rebuilding processes disrupted the lives of residents in the area. Degen suggests that any decisions to uplift a community, however well-meaning, are limited by time and budget, and will inevitably result in particular groups being prioritised (2017, p. 143). Degen provides valuable insight into the potential transformation of the landscape architectural profession: while the landscape architectural profession in South Africa may be particularly attentive to social needs, its members are still relatively homogenous, even 25 years after the end of apartheid. Diverse design teams may be more sensitive to the nuances of the needs of particular communities or may prioritise different views. As Degen (2017) shows however, not all outcomes of spatial design address social concerns

and that there may be unintended consequences, for example, economic concerns outweighing social ones.

The exact relationship between space and place can be complex and contested (S. Low, 2017, p. 12). Some theorists frame space and place as two separate ideas with no possible overlap, while non-spatial specialists may not even be aware of a distinction between the two. More useful ideas are those proposed by social scientists, that space is an all-encompassing term of which place is a subcategory, or vice versa. It is not the aim of this research to find the end to these debates, but in light of social semiotics, it is useful to acknowledge the concept of place (S. Low, 2017, p. 12). The concept of 'place' was popularised by phenomenologists and social geographers such as Norberg-Schulz, Heidegger and Tuan (S. Low, 2017, p. 17; Norberg-Schulz, 1979, p. 6; Rogers, 2001, p. 503; Tuan, 1979, p. 369). Places are "centers of felt value" (Tuan, 1977, p. 4), perceptions of a space achieved through accumulated experience and sensation. "When space feels thoroughly familiar to us, it has become place" (Tuan, 1979, p. 73). Norberg-

Schulz (1979) draws on the Roman concept of *genius*, a guardian spirit who determines character or essence of being, to suggest that one could identify the *genius loci* or 'spirit of place' (p. 10). This 'spirit' of place can be subconsciously felt through the senses as well as experiences, such as the use of light, tectonics (how things are put together), public symbols (for example monuments) and what Norberg-Schulz terms 'fields of care' (for example homesteads) (Tuan, 1979, p. 412). Heidegger connects people and place with the term *Dasein*, meaning 'attunement' or "being there, inhabiting and dwelling in the world" (Rogers, 2001, p. 503). Norberg-Schulz (1979, p. 19) also refers to 'dwelling' as our physical location in space, exposed to a particular character of place. He describes two functions of dwelling: identification with place, a sense of belonging; and orientation, an ability to locate oneself and navigate through a space or landscape using features (initially described by Kevin Lynch, 1960) such as landmarks, edges, nodes, paths and foci (Dee, 2013; Lynch, 1960; Norberg-Schulz, 1979, p. 20). Rogers (2001) describes 'place' as "kinetic, a pattern of habitual movements

through remembered space" (p. 505). Stenglin (2008) also shows that people's relationships with space are shaped by culture, environment, social structures, legal aspects and economics. She has developed the concept of 'bonding', a framework similar to Norberg-Schulz's first type of 'dwelling', describing how people may relate to a space using Bonding icons, 'symbolic attributes' or hybridization of space (Stenglin, 2004, p. 404). While 'sense of place' can include an agreed shared attachment of a place by a community, different individuals may respond in unique and often contradictory ways to the same space (Girof, 1999; Norberg-Schulz, 1979).

The configurations of a space influence how people relate to that space. Stenglin (2008) elegantly packages the impact of configurations of space on people's experiences through her concept of 'Binding'. She describes Binding as a continuum ranging from 'Too Bound' spaces that smother and restrict, to 'Too Unbound' spaces that cause people to feel vulnerable and exposed (Stenglin, 2008, 2014). These two extreme conditions, Too Bound and Too Unbound, are on

the outer edges of this continuum and may result in feelings of insecurity. Spatial security is described as an inner range of strongly, moderately and weakly 'Bound' or 'Unbound' spaces (Stenglin, 2008, p. 435). Norberg-Schulz (1979) developed a similar idea relating to how people felt in the larger landscape. He proposes that landscapes could be categorised according to the proportion of sky to land: places such as deserts with low horizons and clear open skies could be classified using Stenglin's Binding continuum, as Unbound; landscapes where the sky is narrowed between tree canopies, mountains or buildings could be considered Bound. There is no 'ideal' space in this continuum because different types of functions or activities in a given space may affect what level of freedom or enclosure is required from a space. "The world feels spacious and friendly when it accommodates our desires, and cramped when it frustrates them" (Tuan, 1977, p. 65). A person looking for a quiet space to read a book or have a private conversation with a friend may feel more comfortable in a small, cosy space compared to another type of activity such as a concert or market where larger,

unrestricted spaces may be more appealing. Designers can analyse, study and make use of these physical spatial resources to intentionally design particular meanings, for example a high, suspended glass walkway may evoke heightened feelings in its users that push them to the edge of comfort levels and security. It is clear, however, that even the most informed designs will never be interpreted in exactly the same way by every user as each person has a unique combination of social and individual experiences and interests (Tuan, 1977, p. 56). In addition to individual perceptions of space, experiences of spaces are also continually changing: over time.

The experiences of space cannot be separated from the events that happen in it; space is situated, contingent and differentiated. It is remade continuously every time it is encountered by different people, every time it is represented through another medium, every time its surroundings change, every time new affiliations are forged. (Corner, 1999, p. 227)

While interpersonal meaning potentials include the ways in which people relate to or experience spaces, the ways people relate to other users of a space is discussed next.

Edward Hall (1966) developed the idea of proxemics, how distances and configurations between different people may affect the relationships between them. Hall (1966) challenges the notion that people's sense of space only equates to their physical bodies, by describing a set of zones, "expanding and contracting fields" (p. 115), like invisible extensions around a person that vary according to the individual, culture and circumstances. In one particular observational study, the number of conversations that were initiated at hospital cafeteria tables were analysed, and found that people sitting perpendicular across a corner were twice as likely to begin a conversation than people sitting adjacent to each other, and conversations in the latter configuration were three times more likely than between people sitting directly opposite each other (Hall, 1966, p. 109). While Hall (1966) cautions that these statistics are not

universally applicable, it does show that configurations of people can have an effect on their behaviour and interactions (p. 110). Possibly Hall's most well-known contribution to proxemics are his four interpersonal distances: intimate, personal, social and public. Intimate distances are usually characterised by close physical contact; personal distance is defined by being within arm's reach; social distances are those common to social gatherings and public distances are too far for social interaction (Hall, 1966; Scollon & Scollon, 2003, p. 54). While proxemics or the distances between users of a space may influence their interpersonal meaning potentials, users may also relate to each other through movement and indexicality.

Jaworski and Thurlow (2014) and Scollon and Scollon (2003) contribute towards ideas of indexicality, behaviours and performances in spaces. Jaworski and Thurlow (2014) examine how the gestures and movements of tourist performances are influenced by social media and how tourists mediated their actions according to the specific spaces in which they occur.

Scollon and Scollon's (2003) 'geosemiotics' investigate how sign makers, users of signs and signs index meanings that are dependent of their place or context. Scollon and Scollon (2003) refer to Goffman's 'personal front': how a person (consciously and unconsciously) indexes who they are in a particular setting. This can be achieved through objects that one may wear or carry, or through body language and actions (Scollon & Scollon, 2003, p. 58). Goffman also defines eleven types of interaction units from 'singles' (people by themselves among others), to 'withs' (two or more people perceived as being together), to 'queues' (people who are unknown to each other but coordinate their activities) (Scollon & Scollon, 2003, p. 61). Scollon and Scollon (2003) point out that by observing groups of people and their actions, it could be possible to identify people by making assumptions about their roles or performances they are indexing (p. 62). Often people's actions and performances in a space are about 'fitting in', mediating personal motivations with reference to communal actions of others within that space (Scollon & Scollon, 2003, p. 59). This subsection has so far

discussed a range of interpersonal meaning potentials that are based on how users of a text may experience a space or relate to other users in a space. The following discussion examines interpersonal meaning potentials relating to the maker or designer of a space or text.

Because of how modality addresses relationships between the makers and users of a text, it has been framed within the interpersonal metafunction in this thesis. Within multimodal social semiotics the term 'modality' is used in two ways: modality as modes of communication; and modality as "the expression of shifting stances toward reality" (Scollon & Scollon, 2014, p. 206). This latter definition of modality is a term used by linguistics to distinguish between *realis*, the definite or perceived, and *irrealis*, the imagined, indefinite and unknowable (Scollon & Scollon, 2014, p. 211). An example of this in language, is the difference between "it *will* rain tomorrow" and "it *could* rain tomorrow". Modality may be realised differently in different modes (Scollon & Scollon, 2014, p. 212). Kress and van Leeuwen (2006) contribute to an understanding of modality in images

and sculpture, and this is furthered by Ravelli and McMurtrie (2016) in the field of architecture. Modality is socially and culturally situated: 'what counts as real' (Kress & van Leeuwen, 2006, p. 163) depends on the relevant coding orientation (Kress & van Leeuwen, 2006, p. 165). Wildlife photography, for example, may be subject to a *naturalistic* coding orientation, compared to an *abstract* coding orientation of Impressionist art where photorealism is not as highly valued. Modality can be described on a continuum from low modality (*irrealis*) to high modality (*realis*) to the hyper-real (*irrealis*) (Ravelli & McMurtrie, 2016, p. 73). The degree of modality can be determined by *modality markers*, which are particular to specific semiotic systems (Ravelli & McMurtrie, 2016, p. 74). Coding orientations in landscape architecture often correlate to distinct landscape architectural styles or genres. In the traditional Buddhist Zen gardens of Japan, placement of rocks echoed the natural landscapes of Japan (Rogers, 2001, p. 299). These rocks were not sculpted into particular forms: memory and imagination were intended to play a role in the perception of forms in the gardens (Hall, 1966, p. 153). In this example,

abstract forms could be considered high modality. Ravelli and McMurtrie (2016) investigate modality in the field of architecture: for example, by using coding markers such as layout, behaviour, voice, learning, noise and ambiance, they use modality as analytical tools to determine how 'at home' a person may feel in a particular library space. Ravelli and McMurtrie (2016, p. 74) suggest that a building that contrasts with its surroundings has low modality. They also suggest that human behaviour in a space can have high or low modality (depending on what is 'normal' for the given context). As discussed in the methodological framework in subsection 3.5.2.5, markers of modality of students' 3D models are dependent on factors such as scale and construction methods. Models that are sturdily and carefully constructed with a clear sense of scale may be more credible and considered high modality.

Although the spatial mode can be understood in terms of the ideational, interpersonal and textual meaning potentials, to avoid repetition, the textual meaning potentials will not be discussed here but in

the methodological framework (see section 3.5.3). This discussion of ideational and interpersonal meanings of space relates to the meaning potentials of existing, physical spaces. However, landscape architectural designers do not often design with the physical material of life-sized spaces, but most often, scaled representations of these spaces such as drawings and 3D models. These visual modes will be discussed in the following section.

2.4.2 Visual modes: drawings and 3D models

This subsection discusses the affordances of visual modes for landscape architectural meaning-making. Because visual modes are an intrinsic part of the landscape architectural design process, the materiality of visual modes as well as the bodily interaction of meaning-making in these visual modes, are discussed.

In terms of modes for meaning-making, visual modes are foregrounded in landscape architecture. Although

landscape architects design space, unlike crafters or construction professionals, landscape architects do not typically produce work in the spatial medium of life-sized landscape projects. Landscape architects make meaning firstly through drawings, and secondly, 3D models as representations of landscape spaces (Lawson, 2004, p. 32). Kress (2010) defines the concept of *production* as “the implementation of design” where “meaning is made material and becomes subject to review, comment, engagement and transformation” (pp. 26-27). The following two paragraphs discuss two important categories of drawings: the first, discusses drawings and models of ‘production’ and the second, suggests the affordances of drawings and models during the process of design.

Drawings and models, as ‘punctuations’ (Kress, 2010) in the meaning-making trajectory, can be used to present design proposals to stakeholders and clients. Presentation drawings are one of Lawson’s (2004) eight genres of drawings that are examples of drawings of ‘production’ as described by Kress (2010). An example

of a presentation drawing is the landscape sketch plan: illustrative drawings shown to clients and stakeholders (Lawson, 2004, p. 34) for comment or approval. These drawings, often in colour, aim to depict the final design after several years, for example, trees are shown as fully mature and not as recently-installed saplings. The affordances of presentation drawings allow clients and stakeholders to understand and visualise the design, without requiring specialist knowledge. Presentation drawings aim for a balance between displaying a near-final design suitable for comment, while avoiding the notion that the design is ‘cast in stone’ and cannot be changed. Models can also be used for review and comment by clients and stakeholders (Dunn, 2010, p. 134). An example of use of models for review, is the competition for the design of the Constitutional Court in Johannesburg. Albie Sachs, former Constitutional Court judge and design competition jury member, describes the model for the winning entry: “The last one I called mish-mash because it wasn’t clear what the building would be like. I had a feeling that a woman was involved because little buttons were used to show

where the trees would be. It had a sense of anticipation, democracy. I loved it and so did Thenji” (Segal, 2006, p. 121). This example demonstrates the potential for identifying designers’ semiotic resources, such as their use of buttons to represent trees in the model.

Sometimes artists or sculptors make a miniature three-dimensional version of their artwork, called a *maquette* (French) or *bozzetto* (sketch in Italian): a scale model or rough design of a sculpture. A maquette is used to test out design forms and ideas without needing to construct a full-scale installation. The spatial model that students produce, can be likened to the maquette as an example of a ‘sketch’, a way designers ‘work things out’.

Drawings, particularly diagrams and sketches, can be used by the designer to explore design implications for a particular project. These types of drawings represent the struggle for finding appropriate resources for meaning-making and unlike presentation drawings are “not illustrations of works” (Ingold, 2016, p. 167). Moore (2010) describes diagrams and sketches as “a way of

working things out, exploring ideas and speculating about possibilities” (pp. 189-194). Van Dooren et al (2013) echo this, describing sketching as a ‘laboratory’ for experimentation while Selander (2013) also describes sketching as “a process of choices and tentative fixing points” (p. 127). Sketches are able to function as experiments because one can control or isolate layers of complexity of the site and test how these respond to design ideas (Schön, 1987, p. 77). A study performed by Suwa and Tversky (1997) shows that sketches have emergent properties, the forms of the design are discovered through the process of drawing. In their study, designers ‘read-off’ functional relations from their perception of the visual features of their sketches. Suwa and Tversky (1997, p. 401) suggest there may be several reasons why sketches enable this: sketches may trigger the designer’s knowledge about particular issues; may be less specific thus allowing other issues to emerge; are ambiguous and allow for re-interpretation.

While inherently multimodal, it is important to acknowledge that in the visual mode, meaning-making is different to (and cannot easily be substituted with) written or spoken texts and “makes claims for its own truthfulness” (Simpson, 2014, p. 49). Compared to the linear, sequential format of written language, the nonlinear characteristics of the visual mode lend it to explorations of spatial relationships (Archer, 2016, p. 95; Kress & van Leeuwen, 2006). Archer (2016, p. 96) suggests that in design, sketches and models can comprise the *argument*, not only a representation of it. Drawings, particularly sketches and diagrams, are therefore “central to the thought processes employed” (Lawson, 2004, p. 50) and part of the meaning-making process through which new ideas can be discovered and developed (Ingold, 2016, p. 167; van Dooren et al., 2013, p. 67). “Writing, in architecture, is left for what cannot be drawn” (Ingold, 2016, p. 167).

When completed, a sketch immediately poses a series of questions to the designer. [...] How can the attributes noted in the sketch be translated into design

possibilities? How might the image spur relevant design ideas? Does the sketch exhibit some visual phrases or spatial language that may be useful in future designs? (Smith, 2017, p. 65)

In addition to drawings, models can also be used to represent explorations at various stages of the design process from concept design to design development (Dunn, 2010). These models assist the designer to test out ideas and visualise their effects (Dunn, 2010, p. 115). Spatial models focus on specific design explorations of a space or a sequence of spaces (Dunn, 2010, p. 114). This processing of ‘sketching’ is linked to the physical process of *making*.

In landscape architectural drawing, there is a strong connection between the process of meaning-making, the movement of the hand or body, and the interaction with tools and materials. “Many designers report feeling almost unable to think without a pencil or pen in their hands” (Lawson, 2004, p. 53). As Smith reports:

A unique relationship is formed between the designer and their drawing, their extension. They both participate in the discussion. The process is not a one-way-street. The designer is, in a sense, conferring with the drawing as it evolves. (Smith, 2017, p. 98)

Multimodal social semiotics focuses on “people’s situated choice of resources, rather than emphasizing the system of available resources” (Jewitt, 2013, p. 250). This situatedness of semiotic resources means that one could analyse, not just a text itself, but how it is produced, for example, by physical human bodies. This “product of the work of social agents shaping material, physical ‘stuff’ into cultural semiotic resources” (Jewitt, 2013, p. 254) is referred to in social semiotics, as materiality. Leander and Boldt (2012) advocate for a comprehensive understanding of the process of meaning-making “as living its life in the ongoing present, forming relations and connections across signs, objects, and bodies in often unexpected ways” (p. 36). Leander and Boldt (2012) see meaning-making as an assemblage of body and context: “a collection of things that happen to be present in any

given context” (p. 25). According to Pennycook (2018), “there has been a move to expand the semiotic terrain [...] in relation to material surrounds and space, with an increased focus on place, objects and semiotics” (pp. 10-11). Social semiotics places emphasis on the social context of meaning-making, as well as the recognition of the non-human context: the tools, surfaces and material surroundings. Sketches can function as an extended memory, externalising the designer’s choices so that they can reflect on their implications (Suwa & Tversky, 1997, p. 385; van Dooren et al., 2013, p. 67). A particular quality of a line, how bold, or jittery, or light, is a direct combination of the angle the pencil is held, how strongly the pencil is gripped, and the amount of force used. The form of a line is a record of a particular motion. Ingold describes the results of these drawing motions as ‘traces’ on a surface and how “drawing freehand, I take my line for a walk” (Ingold, 2016, p. 81). These traces of the drawing can be examined, adjusted and manipulated leaving a palimpsest or history of lines (Ingold, 2016, p. 171), a record of decisions made and changes in representations of ideas. The materiality

of leaving marks on paper serves as an external and extended memory (van Dooren et al., 2013, p. 67). "We can see that designers use drawings not just inside a project, but as a way of storing knowledge and linking ideas from one project to another" (Lawson, 2004, p. 50). These affordances of visual modes in landscape architecture that provide the designer with both a record of representations that can be tested and ways of storing ideas, can also apply to working with models. While this subsection has so far discussed the relationship between the design process and visual modes, such as drawings and models, the following discussion concentrates on visual design resources that may aid the designer in their design process.

There is a history of use of textual meaning-making tools within (western contemporary) visual and graphic design communities that are commonly referred to as 'design principles'. Although a multimodal social semiotic view of 'principles' might conjure concerns about essentialism, in multimodal social semiotic terms, these may be considered 'principles of composition' (Bezemer

& Kress, 2008, p. 167), resources used by communities of designers and design students, as a set of patterns or textual meaning-making potentials. There is no one comprehensive or universal set of these resources, but across a range of visual design communities, there is a general familiarity with textual meaning-making patterns such as *balance*, *emphasis*, *alignment* and *hierarchy*. These have particular affordances and are used in much the same way as Kress and van Leeuwen's textual components of their 'grammar of visual design' (2006). As a textual meaning-making potential, *emphasis* is indistinguishable from Kress and van Leeuwen's (2006) summary of *salience*: "the degree to which an element draws attention to itself, due to its size, its place in the foreground or its overlapping of other elements, its colour, its tonal values, its sharpness or definition, and other features" (p. 210). These patterns or resources may have particular affordances: they can be used in many ways to convey different effects. For example, a designer may want to draw attention to a particular element in the text and could choose to achieve this by increasing the size of the element or by using a brighter

colour in relation to the other elements in the text. Conversely, if a designer is faced with a large element in a text that they intend to de-emphasise, the designer could choose to blur, or fade, or blend the element into the background. Design 'principles' is a misleading term because these textual meaning-making potentials are not fundamental rules that can be indiscriminately applied to any text. While these patterns have a history of use and particular affordances, their specific use is affected by factors such as the interest of the designer and the context of the text.

As I have shown here, visual texts such as drawings and models are produced throughout landscape meaning-making trajectories. It is clear, however, that these texts are mostly not monomodal, and are often combined with verbal and gestural modes in multimodal ensembles, as will now be discussed.

2.4.3 Verbal and gestural modes

Although the aim of this study is not to analyse verbal and gestural texts, these modes contribute to the multimodal ensemble of meaning-making around visual and spatial texts in this study. Verbal modes include writing and speech. This discussion highlights the role of verbal and gestural modes within the multimodal ensemble.

The use of verbal and gestural modes can be identified in several instances during the landscape architectural design process. Designing can be described as having a conversation with the drawing or model (Schön 1987, Lawson 2004:90). A designer may question the text, silently or aloud: "what if I move this here?" or "what if I do this?" This conversation with the text is of increasing importance when there are multiple individuals, a design team, working on a design (Lawson, 2004, p. 85). The design team is likely to communicate with each other using a combination of visual, verbal and gestural modes. Although not the dominant mode during the

landscape architectural design process, verbal modes can play a significant role in multimodal meaning-making processes. An example of this, is in Cross (1997, p. 428), where he describes how a design team, developing a device to mount a backpack onto a mountain bike, experiences a sudden moment of clarity at the mention of the phrase 'tray'. Cross (1997) attributes this 'sudden illumination' to a change in perspective of the design concept, albeit brought about by an idea that was expressed verbally (p. 427). Lawson (2004) describes how "words enable transitions between ideas which look abruptly different if we only look at the drawings" (p. 88). In their study of interaction in complex workplace environments, Luff, Heath and Pitsch (2014, p. 312) found that paying attention to the design conversation, allowed for a better understanding of the constructed and emergent actions and sequences of the meaning-making process, as well as the practices through which participants orient themselves. An affordance of the verbal mode is to make contributions to meaning-making ensembles, particularly with regard to describing narratives or concepts that may frame the design.

Whether it is a landscape architect describing a design narrative to a client, or a student explaining their motivation behind a particular design decision, a drawing or model can rarely be evaluated or assessed as a stand-alone object, without verbal and often, gestural explanation. The difficulty with speech in the design process, is there is little written about it (Lawson, 2004, p. 85), but there is no doubt as to its significance in the meaning-making process. Even more elusive, are theories describing the role of gesture in landscape architectural meaning-making processes. Flewitt, Hampel, Hauck and Lancaster (2014, p. 48) suggest that bodily activities also form part of meaning-making processes, but in less predictable ways. The full meaning of a sign could be represented in part by graphics (or a model) and in part by "physical 'enactment'" (Flewitt et al., 2014, p. 48). McNeill (2005, p. 22) describes how gesture and speech are 'co-expressive', although their relationship may also include tension or contradiction. A single idea may be conveyed simultaneously (and differently) through gesture and speech. Following Peirce's (1955) categories of signs, McNeill (2005)

describes four types of gestures that could accompany speech, and are relevant to different ways designers may gesture during speech. *Iconic* gestures represent images of physical objects or actions (McNeill, 2005, p. 39), for example, a designer might gesture the thickness of an object or trace the movement of a person along a path. *Metaphoric* gestures are abstract, for example, the gesture of a person holding an idea or memory (McNeill, 2005, p. 39). Unlike iconic and metaphoric gestures which are representational, *deitic* or 'pointing' gestures are indexical (Haviland, 2000, p. 13). Deitic gestures are commonly made using the index finger, but could also be achieved in other ways, for example by tilting the head towards the object being indicated (McNeill, 2005, p. 39). Deitic gesture is a common feature of design discussions, perhaps because of their "virtue of a shared spatio-temporal proximity" with the drawing or design (Haviland, 2000, p. 17). As an example, a designer could explain 'because of the site constraints we moved the path from *here* [points] to *there* [points]'. The role of gesture in this interaction provides specificity and context to the 'here' and 'there'. "Speakers often employ

gesture in such a way as to make something that is being said more precise or complete" (Kendon, 2000, p. 51). The fourth type of gesture is beat, where the speaker moves or claps their hands in 'beat' with their speech, usually to emphasise what is being said (McNeill, 2005, p. 40). While acknowledging the role gesture plays in the meaning of the text-as-multimodal-ensemble, gesture is not a focus of this research study.

This section collated relevant theories regarding the affordances of spatial, visual, verbal and gestural modes. In Chapter 3, this conceptual framework is operationalised as a methodological framework for the analysis of students' texts and multimodal ensembles. The following section brings the theoretical framework into the classroom and highlights the potential for pedagogy to provide opportunities for students to recontextualise landscape architectural meaning-making trajectories.

2.5 Developing a multimodal pedagogy for diversity

Saidi (2005) has made significant contributions to understanding the role of curriculum in architectural higher education in South Africa. He identifies that architectural schools in Africa have historically inherited educational systems from the Global North, which may fail to address Global South contexts, both in terms of the needs of students and the architectural needs of a diverse and changing society (Saidi, 2005). Through analysing existing curriculum in architectural higher education, Saidi (2005) proposes seven principles of a *sustainable curriculum* in architecture. While all seven principles are relevant, three principles in particular resound with the aims of developing a multimodal pedagogy for diversity in landscape architectural higher education. The first, is that education should dispel the traditional role of the lecturer as sole expert and creator of knowledge in the classroom. The second, is the principle of resourcefulness: to collaborate and learn with and from others. The third, is education

that “recognizes and cultivates many different kinds of knowledge and learning processes” (Saidi, 2005, p. 179). These principles align with a multimodal social semiotic approach and also underpin the third research question ‘how can landscape architectural education draw on students’ diverse resources to develop a multimodal pedagogy for diversity?’ Multimodal pedagogies challenge notions such as ‘literacy’ or ‘competence’ and focus on the resourcefulness and agency of the meaning-maker (Jewitt, 2014a, p. 21) as well as the recognition of learning. This methodological approach may enable this research to “open analytical spaces for realities that are “surprising” because they are new or have been ignored or made invisible, that is, deemed non-existent by the Eurocentric critical tradition” (Santos, 2014, p. 44).

Multimodal social semiotic pedagogies have a well-established history of practice in South African classrooms, particularly in terms of addressing educational imbalances and developing pedagogies that are receptive to students’ diversity, agency and identity (Archer, 2014a; Newfield et al., 2003, p. 62; Stein, 2008,

p. 3). Researchers have drawn on a multimodal social semiotic approach to education in a diverse range of disciplines, including engineering (Simpson, 2014), jewellery design (Salaam, 2014), medicine (Weiss, 2017) and commerce (Grant, 2012). The following section discusses literature that underpins the third research question ‘how can landscape architectural education draw on students’ diverse resources to develop a multimodal pedagogy for diversity?’ It discusses a multimodal social semiotic approach to pedagogy as well as its potential in terms of recognition of signs of learning, access and resemiotisation.

2.5.1 Recognition and signs of learning

The danger of dominant discourses and single point of view perspectives, particularly in diverse educational contexts, is that different resources, practices, experiences and ways of knowing may be excluded, silenced or marginalised. Being aware of these disparities, responsible pedagogies need to “construct different orders of visibility” (Kerfoot &

Hyltenstam, 2017, p. 8). “The contemporary nature of diversity urges a reexamination of how the academy reflects knowledge, experience and expertise from the very diverse communities and contexts of the world” (Heugh, 2017, p. 212). One of the major drivers behind this research study is to understand the ways in which multiple views can contribute to landscape architectural education, and can disrupt the processes which attempt to marginalise diverse views. Multimodal social semiotics offers a particular approach to pedagogy that promotes the recognition of the resources, experiences, languages, practices and histories that students bring to their learning environments (Archer & Newfield, 2014; Bezemer & Kress, 2016, p. 38; Stein, 2008). Recognition of students’ resources also extends to the role of interest and choice in meaning-making processes. An individual’s interest is shaped by their past experiences, their social context and available resources (Kress, 2010, p. 70) and the moment of meaning-making. Interest is what realises a text, out of the range of meaning potentials and available resources, in the moment of ‘design’ (Kress, 2010, p. 6). Pedagogies of recognition

acknowledge students' agency and 'resourcefulness' (Mavers, 2007, 2011): "the ability to recruit semiotic resources; competence in linkages across modes; inclusion of self, community and culture; and a consciousness of design choice" (Newfield, 2013, p. 14). Recognition also involves theorising what resources students draw on and how they bring these into their design processes. However, Archer and Newfield (2014, p. 7) caution that recognition must also be framed in terms of broader and transformative notions of access to avoid institutionalising particular practices. Thesen and Cooper (2014) frame students' use of experiential knowledge and resources in terms 'of 'risk': there may be some 'weighing up' of resources that students bring with them, in light of dominant discourses that may act as gatekeepers to unconventional meaning-making practices. Chapter 3 outlines a multimodal social semiotic framework and metalanguage that recognises and constructs different orders of visibility for students' resources.

Bezemer and Kress (2016) frame recognition, design and education in terms of 'signs of learning'. Because of the way that meaning-makers transform resources in response to prompts, Bezemer and Kress (2016) argue that "learning is evidenced in *every sign produced*" (p. 3). This does not mean a lackadaisical approach to meaning-making practices, but places emphasis on "foster[ing] environments in which sign-makers can expand their semiotic repertoires" (Bezemer & Kress, 2016, p. 6) and can participate in the production of meaning and knowledge.

2.5.2 Multimodal pedagogy and access

Multimodal pedagogies aim to address issues of power and privilege by promoting access to diverse local and global discourses, practices, disciplines and resources for meaning-making (Archer, 2014b; Archer & Newfield, 2014, p. 4). Archer and Newfield (2014) describe access as both material and symbolic, the latter which includes "epistemological access to forms of knowledge and meaning-making" (p. 4). Recognition of students'

resources and agency in educational settings may provide students with access to dominant discourses, while at the same time drawing from a rich variety of resources they have brought into their learning environment (Stein, 2008, p. 3).

Multimodal pedagogies can be used in the classroom environment to contextualise meaning, making use of students' everyday experiences, not just as descriptions of stories, but to critically discuss relevant issues (Stein, 2008, p. 7). Historically, learning in higher education often centred around students passively absorbing abstract and decontextualised knowledge (J. Herrington et al., 2010, p. 4). However, meaningful learning is situated in the context in which it will be used, is active, student-centred and aims to engage students in complex, dynamic, engaging and collaborative tasks (Grant, 2012; J. Herrington et al., 2010). Multimodal pedagogies can promote educational contexts that are meaningful and relevant for diverse students.

Importantly, multimodal pedagogies aim to develop classrooms as sites of transformation. Stein (2008, p. 3) proposes that a critical perspective of pedagogy could enable classrooms to become 'transformative sites' where students are empowered to use their semiotic resources in productive and transformative ways to engage with curriculum and pedagogies that respond to diversity. Multimodal pedagogies thus view difference in diversity as an opportunity, as opposed to an obstacle. This view is shared by researchers such as Gee (1996), Gomez et al (2011) and the New London Group (1996). Viewing a dominant discourse from different positions may provide perspective to hold "insights into the workings of these Discourses or cultures that more mainstream members do not" (Gee, 1996, p. 140). This strategy, what the New London Group (1996) describes as Critical Framing, has been echoed by researchers of decolonising education (Mackinlay & Barney, 2014; Nakata et al., 2012). The classroom environment needs to juxtapose discourses (Gee, 1996, p. 141) in order to interrogate how particular knowledge has been constructed, why particular types of knowledge have

been valorised (Mackinlay & Barney, 2014) and to challenge or negotiate new meanings. A result of this juxtaposition of discourses could be what the New London Group describe as 'Transformed Practice' (1996). The pedagogy of multiliteracies promotes the understanding that modes of meaning not only differ in various cultural contexts, but are also continuously adapted by their users (The New London Group, 1996, p. 64). Drawing on multiliteracies, multimodal pedagogies may recontextualise semiotic activities and provide opportunities for students to develop "new forms, new meanings and new possibilities for learning" (Stein, 2008, p. 3). This process provides direction and method to engage with the third research question that aims to develop "remixed" (Stein, 2008, p. 3) meanings for landscape architecture that account for diversity.

2.5.3 The impact of resemiotisation on learning

Multimodal pedagogies can promote learning through exploring the meaning-making affordances of particular

modes, in order to justify and contest dominant modes and practices. All meaning-making in the classroom environment is multimodal (Archer & Newfield, 2014, p. 1; Stein, 2008, p. 121), yet intentionally limiting the use of modes draws attention to their particular affordances. In her book "Multimodal Pedagogies in Diverse Classrooms", Stein (2008, p. 134) describes an example of how film students produced films using still images and without sound. This strategy provides students with an opportunity to push particular modes to their limits as an exercise in understanding 'multimodal cohesion' and the potentials and limitations of modes. The spatial model, the focus of this research study, is a project designed for students to understand the meaning-making potentials of spatial form. Although students are encouraged to use a range of materials to construct their model, the project challenges students to investigate the limitations and potentials of forms that define space.

Multimodal pedagogies can also promote learning through resemiotisation, thus contesting dominant

modes in particular contexts. A seemingly contrasting notion to 'multimodal cohesion', Stein (2008, p. 124) also describes a multimodal 'synaesthesia' approach to the classroom where traditional or dominant modes of communication are momentarily set aside, while concepts are explored through the perspectives of multiple modes. This translation or resemiotisation of concepts between modes also serves to highlight the meaning potentials of a multimodal environment. Throughout their spatial model project in my research, students engage in multiple modes for representing meaning: drawings and sketches of ideas, 3D spatial models, videos and 1:1 scaled chalk drawings, and verbal and gestural commentaries and reflections. This multimodal engagement provides rich data for this study to trace the trajectories of students' semiotic resources through processes of resemiotisation.

In conclusion, multimodal pedagogies have the potential to respond to the scars of South Africa's colonial, segregated and exclusive past by promoting inclusive, democratic classroom environments where all voices

are valued equally (Stein, 2008, p. 3). Identifying and recognising students' diverse resources, and how these are deployed in a multimodal landscape architectural educational environment, can provide a way to map the relationship between modes, pedagogy, knowledge and learning.

2.6 Conclusion

This chapter began by describing the nature of landscape architectural design and reasoning that is well-suited to a multimodal social semiotic approach. The social situatedness of multimodal social semiotics is an important counter to structuralist understandings of meaning and its promotion of the meaning-maker's interest and agency, is particularly relevant in the current context of education in South Africa. In the second section, I unpacked the components of the landscape design process, namely, prompts and resources such as precedent and guiding themes, and reframed these within a multimodal social semiotic approach. This combination of landscape architectural design theory

and multimodal social semiotics provides insights into the landscape architectural design process. The fourth section focused on bringing together a range of literature relating to the spatial, visual, verbal and gestural modes that landscape architectural meaning-makers move between in their design trajectories. This section also highlighted the importance of a multimodal social semiotic approach that draws attention not only to textual and ideational, but also interpersonal meaning potentials. The language of description developed in this section underpins the methodological framework in Chapter 3. Finally, this chapter outlined aspects of multimodal pedagogies that could speak to the context and rationale of this research study. This section argued the case for multimodal pedagogies for diversity that recognise students' resourcefulness as signs of learning and foster epistemological access to education, thus demonstrating the potential for multimodal pedagogies to redress past educational imbalances. This literature review and theoretical framework is used in the following chapter to inform decisions about the development and research design of the case study.

CHAPTER 3

Methodology

3.0 Chapter overview

The methodological approach to this research is connected to the theoretical framework and research questions. This research seeks to develop a multimodal pedagogy for diversity that constructs 'different orders of visibility' (Kerfoot & Hyltenstam, 2017) in terms of the resources that diverse students bring to their landscape architectural learning environment. A social semiotic approach has been combined with ethnographic and case study perspectives, and underpins the research design, ethical considerations and data collection and analysis as described in the first four sections of this chapter. The methodological framework for analysis, described in section 3.5 of this chapter, builds on Kress and van Leeuwen's 'grammar of visual design' (2006) and Stenglin (2004, 2008) and Ravelli and McMurtrie's (2016) 'grammar' of architectural three dimensional space. This methodological framework for analysis is applied to students' meaning-making resources within their design trajectories, as described in Chapters 4, 5 and 6.

3.1 Research design: A situated multimodal social semiotic and ethnographic perspective

Qualitative research provides a non-linear approach to the research process. While most quantitative and some qualitative research design is a linear process (Cousin, 2008, p. 3; Maxwell, 2009, p. 214), this is suited to inquiry where it is possible to evaluate, measure and compare discrete elements of a system. Researching within the complex environment of a higher education classroom requires a qualitative approach where research is iterative, non-sequential and each element of the research is dynamically linked (Cousin, 2008, p. 31; Durrheim, 2006, p. 35). This non-sequential relationship between data and the literature means a researcher needs “to be thinking with the data as much [as one] is thinking from it” (Cousin, 2008, p. 4). Blommaert and Jie (2010) also describe how knowledge developed through research is less of a ‘product’ and more the *process* of the researcher’s journey through knowledge.

The design of this research study draws from multimodal social semiotics, ethnography and case study methodologies. These three approaches are closely connected and their combinations have already been used in previous research: in autoethnography and multimodal social semiotics (Simpson, 2014; Simpson & Archer, 2016), ‘multimodal ethnography’ (Dicks et al., 2006) and ‘socialsemiotic ethnography’ (Vannini, 2007). Given the situatedness of ethnographic research (Blommaert & Jie, 2010, p. 11; Green & Bloome, 1997, p. 185), it is unsurprising that case study research could be linked to an ethnographic perspective. The following discussion describes how the design and analysis of this research study is rooted in each of these three approaches: the first, a multimodal semiotic approach to recognise the resources diverse students bring to their learning environment; the second, an ethnographic approach; and the third, case study research.

3.1.1 A multimodal social semiotic approach to recognise diverse students' resources and meanings

The combined aim of the first two research questions, 'what resources do diverse students bring to their learning experiences in the context of landscape architectural education?' and 'how do students mobilise these resources to move between spatial, visual and verbal modes in a (landscape architectural) design trajectory?' is to recognise and identify resources of diverse students, and to trace how these resources move between modes and phases of a classroom-based design trajectory. Methodologically, this research relies on a multimodal social semiotic approach, including key concepts discussed in this subsection: namely, resources, modes and resemiotisation.

Resources

In the process of meaning-making, the designer draws on a range of available resources. These resources include

semiotic resources, the material and non-material resources used in meaning-making, but may also include precedent, experiential, social, pedagogic and interactive resources. While these latter resources may not be realised in the design, they shape the meaning-making process. Foregrounding the use of resources shifts the focus to the role of the meaning-maker, their interest and the choices they make in the meaning-making process (Jewitt, 2014a, p. 24). The framework for analysis, described at the end of this chapter, is used to analyse the students' 2D and 3D texts produced during their spatial model project. Bezemer and Kress (2016, p. 41) suggest that "each and every sign and sign complex tells us something about how a sign-maker knows and sees the world at the time of the production of the sign." The analysis of the different meanings that have been realised in the text points to some of the resources that were used or shaped the meaning-maker's design processes.

Modes

A mode is the organisation of semiotic resources that are used and shaped by a particular community to make meaning (Kress, 2014b). In a meaning-making environment different modes of meaning-making may be combined as a 'multimodal ensemble' (Kress, 2010). For example, in the landscape architectural classroom, a crit discussion, or multimodal ensemble may include: the spatial mode (3D models), speech (the explanation and discussion of the model), gesture and sketching. Each mode has different meaning-making potentials or affordances and contributes to the multimodal ensemble in different ways. It is important during the research study to video-record these multimodal crit ensembles so that the meanings conveyed in the discussion are not limited to only one or two recorded modes. A typical discussion about a student's model may include non-specific verbal references, for example "*this* represents confusion in my narrative" or "*maybe that* should be taller". Without video references to gesture or images of the 3D models, it would be difficult

to later understand the references to 'this' and 'that' in the model.

Kress's (2014b, p. 65) criterion for defining a mode, is that it realises ideational, interpersonal and textual meanings, the three metafunctions of SFL (Halliday, 1978). "Multimodal research provides tools for analysing and describing the full repertoire of meaning-making resources which people use to communicate and represent" (Jewitt, 2014a), therefore the development and use of a methodological framework that is able to analyse students' 2D and 3D texts in terms of these three categories of meaning-potentials is an important methodological approach to identifying and recognising the resources that students bring to their learning environment. Analysing the meanings of a text through these metafunctions investigates meaning-potentials in terms of 'what can be meant' or 'what can be done' (Jewitt, 2014a, p. 25) with the semiotic resources that have been expressed in a text. Where the traditional discourse of landscape architecture may focus on particular semiotic resources and textual meaning-

potentials (Corner, 1999, p. 251), the framework opens up the analysis of students' texts to include ideational and also importantly, interpersonal meaning-potentials that may have, in different circumstances, been overlooked.

Resemiotisation

The concept of resemitisation is part of the methodological approach to investigating the second research question 'how do students mobilise these resources to move between spatial, visual and verbal modes in a (landscape architectural) design trajectory?' ledema (2003, p. 33) defines 'resemitisation' as "how meaning making shifts from context to context, from practice to practice, or from one stage of a practice to the next." Resemiotisation provides a useful frame for analysing how students deploy different resources in different modes and for tracing changes in meaning across the students' meaning-making trajectories of their spatial model projects.

Resemiotisation is useful for this study. Firstly, it allows for understanding how design is a process of experimentation, or trial-and-error (van Dooren et al., 2013, p. 61) or where the designer engages in a sequence of hypothetical moves exploring potential effects of particular actions. The design process is iterative: suitable designs are often not generated after the first attempt as alternative ideas need to be generated and tested (van Dooren et al., 2013, p. 61). Design therefore, involves changes in ideas as well as changes in representations of these ideas, which are evaluated and then further developed. Secondly, the notion of resemitisation helps in comprehending intertextuality in the design process: which meanings are selected, for what reasons and how are they recontextualised (ledema, 2003, p. 40). Thirdly, the dynamic quality of the landscape architectural design process involves numerous shifts in mode throughout the trajectory as the imagined three-dimensional design is re-presented as various drawings, models and verbal and gestural explanations.

Fourthly, the concept of resemiotisation could provide insight into how social dynamics may shape meaning-making, or how different resources are used in different social settings (Iedema, 2003, p. 40; Ker, 2015, p. 20).

Following the path of textual trajectories provides a useful material and concrete way into analysing social practices extending in time and space which can otherwise appear abstract, making visible processes which can otherwise easily become invisible. (Tusting, 2017)

Resemiotisation is key to understanding the meaning-making potential of particular modes and their affordances: how the students' movement between modes unfolds; what particular semiotic resources are used (or not used) at certain times; and what resources are carried forward into future strips of their design trajectory. As Kell (2015) demonstrates, the concept of resemiotisation holds potential to analyse semiotic resources beyond a 'snapshot' in time and to trace meaning-making trajectories through space and time.

In a multimodal social semiotic approach, meaning-making is socially-situated. This situatedness fits well with an ethnographic approach to data collection, as discussed in the following subsection.

3.1.2 An ethnographic approach to students' situated meaning-making practices

This research study combines social semiotics with an ethnographic approach in order to interpret meanings within the dynamic environment of higher education. Ethnographic approaches originate from anthropology and demonstrate how interpretation of meaning can be researched within the context of a case study "to produce descriptive and analytical accounts that invite reader judgment about their plausibility" (Cousin, 2008, p. 131). Ethnography is a broad term in research that can apply to different disciplines and academic fields as well as various processes, products, ways of collecting data or even ways of constructing knowledge (Green & Bloome, 1997, p. 183). Green and Bloome (1997, p. 183) also

differentiate between 'doing ethnography', conducting in-depth and long-term studies of a community; and adopting an 'ethnographic perspective' which is less comprehensive than a long-term ethnographic study, but still makes use of an ethnographic approach to studying everyday life and cultural practices of a community. This research study follows the latter approach, particularly with regard to its potential to provide insights into the way knowledge and resources are socially constructed in classrooms (Green & Bloome, 1997, p. 191).

When compared to a structural linguistic approach to meaning-making that views meaning-making within fixed systems or structures, a multimodal social semiotic perspective which foregrounds meaning-making as a social practice, is conducive to an ethnographic approach. As Vannini's (2007, p. 125) work in 'sociosemiotic ethnography' has shown, multimodal social semiotics recognises the lived experiences and meaning-making practices of individuals, as social agents operating in wider social structures and communities. These meaning-making practices include how people

use, practice, critique, challenge, interpret and engage with meaning-making resources (Dicks et al., 2006, p. 84; Vannini, 2007, p. 125). Ethnographic approaches attempt to "describe the apparently messy and complex activities", while avoiding reductionism and hegemony (Blommaert & Jie, 2010, p. 13). This approach increases the potential to describe practices and behaviour that may be unexpected. This is particularly relevant in this research methodology that has set out to recognise diverse students' resources, including those that may have otherwise remained invisible.

Ethnographic research acknowledges interpretive analysis as part of a 'multiplicity of perspectives' (Vannini, 2007, p. 122), a foil to the dominant, single point of view. While ethnographic approaches do not make replicable claims for contexts outside of the situated environment of the study, there is potential to provide detailed, rich understandings of contextualised situations as well as insight into generalised contexts (Agar, 1986; Blommaert & Jie, 2010; Cousin, 2008, p. 112). These insights may either confirm or challenge established views of these

generalised contexts through interpretation of specific contexts (Blommaert & Jie, 2010). An ethnographic and multimodal social semiotic approach can enable insight into this research study's aim to identify and recognise diverse student resources, as well as how to draw on these resources to develop a multimodal pedagogy for diversity.

The nature of an ethnographic approach to research, as situated in everyday experiences and practices of communities, has inspired the development of data collection through a case study.

3.1.3 A case study: a spatial model project in the landscape first year studio

It is difficult to define a case-study because any study that locates itself within a specific time and place could be a case study (Ragin, 1992, p. 2). For Flyvbjerg (2006), the case study is an example of context-dependent knowledge that has the potential to provide a subtle, close-up 'wealth of details' of experiences, events or

processes. The use of case studies is varied, from generating hypotheses, to confirming or disputing preconceptions, the specific application of which is dependent on the context (Flyvbjerg, 2006, p. 221). Ragin (1992, p. 9) differentiates between four broad categories of case-study research that are positioned between the specific and general on one hand, and the empirical and theoretical on the other. While these categories are not strictly bound, this research aligns with case study research that is specific and empirical.

The case study around which this research revolves is a 3D spatial model project in the landscape architectural design studio subject in the second semester of the first year. The following section, the research context, describes the research site and participants of this case study in more detail.

3.2 Research context: The Diploma in Landscape Architecture

Chapter 1 outlined the broader context of this case study in terms of the development of the landscape architectural profession and semiotic practices, as well as contextualising landscape architectural education within the current South African educational agenda. This section includes a description of the specific research site and research participants of the case study.

3.2.1 Research site

The specific location of this research takes place in the second semester studio subject of the first year of the Diploma in Landscape Architecture at a South African Higher Education institution. Using the first-year studio spatial model project as a case study for this research was carefully thought-out. As depicted by Image 3.1, subjects in the first semester of the Diploma in Landscape Architecture broadly focus on general

graphic or visual (2D) design skills: understanding and applying design principles to visual communication such as posters, free-hand sketches, collage and digital photo manipulation. The second semester subjects build on the first semester subjects and provide connections to the other second semester subjects. All the subjects in the first year feed into a residential landscape design project. While a seemingly small residential design, students need to draw on knowledge and skills learned throughout the year, from design skills to drawing conventions to site analysis to identification and placement of plant material. Because the residential design project requires students to engage in spatial design (as opposed to the two dimensional visual design of the first semester), a spatial model project focussing on three-dimensional design bridges the gap between two- and three-dimensional design. This spatial model project is therefore a pivotal point in the first year of the Diploma in Landscape Architecture.

Because this research project aims to investigate the diverse resources of students as well as a tracing movement

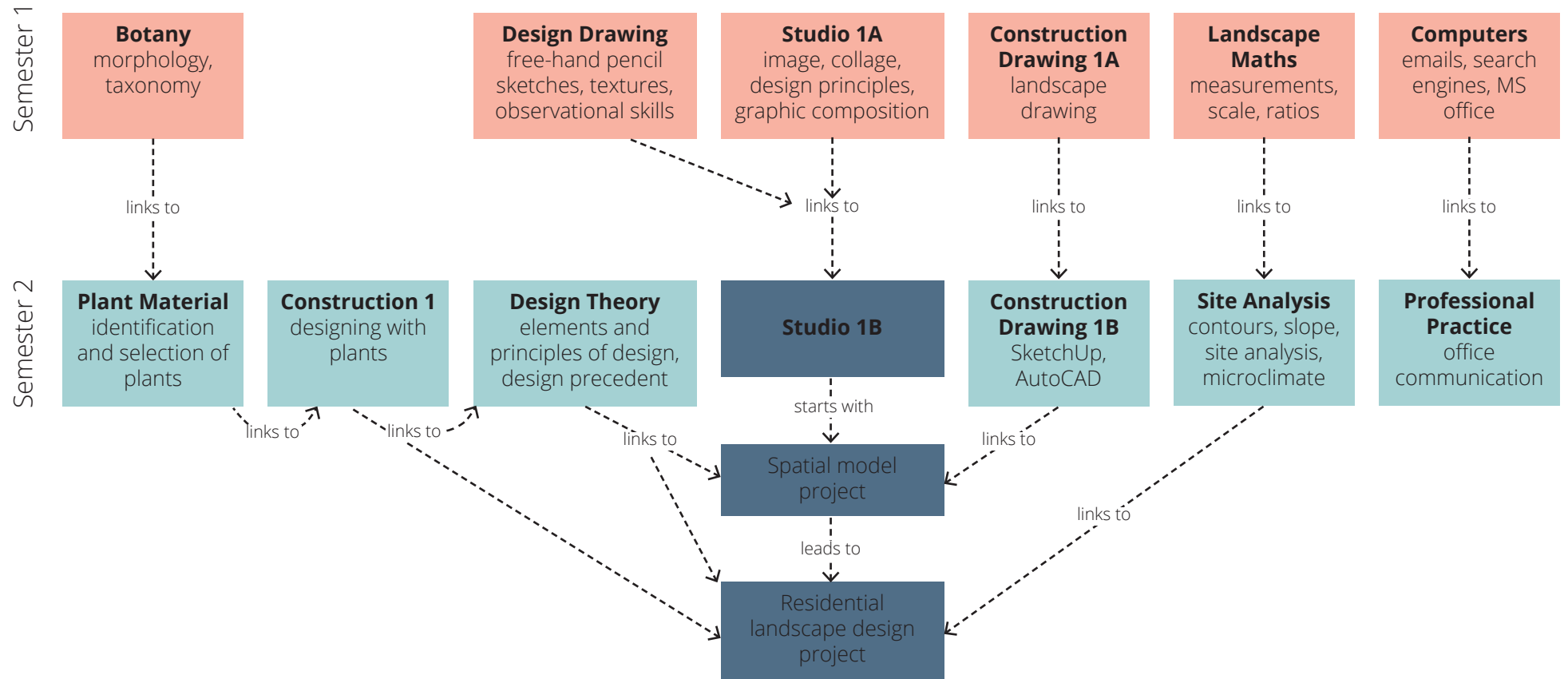


Image 3.1 Interconnection of subjects within the first year of the Diploma in Landscape Architecture

between resources, the data collection focuses on the spatial model project. The context of data collection in a first year subject is more conducive to identifying the resources students bring to their learning environment, compared to second or third year students who may be more familiar with the current canon and practices of the landscape architectural discipline. The location of the project in the second semester provides the time to develop trust and rapport between lecturers and students.

3.2.2 Research participants

Diversity is difficult to describe, because even a group of students who may appear to have a lot in common, will differ in terms of age, gender, sexuality, social class and language (Milani, 2017). The following description of the proposed participant group is the result of an assignment in which students were asked to write about their journey leading up to their decision to study landscape architecture. (See Appendix I for a summary of the students who participated in the study.)

In the assignment, the students wrote about their background: where they grew up, what schools they attended and who their families are. The study's participant group comprises 34 students ranging in age from 20 to 26 years old. All the students in the class are South African. Half of the students in the class were born in the Eastern Cape⁶ with a significant proportion completing their secondary education in the Eastern Cape before moving to Cape Town. Approximately one quarter of the students in the class were born and raised in the Western Cape. Only a handful of students were born or have lived in one of South Africa's other provinces such as Gauteng, KwaZulu-Natal or North West Province. Most students are multilingual, the majority of the class speaks isiXhosa as a first language and English as a second or third language. A handful of students are first language English speakers. Most students report a strong connection to family life: the average student has three siblings and lives with their parents and/or extended family (if and when students are not in university accommodation). A quarter of the students have lost one or both parents. Many students

⁶ The Eastern Cape is one of South Africa's nine provinces. Rural Eastern Cape is characterised by chronic poverty, low economic activity and reduced employment opportunities, growing food insecurity, poor provision of infrastructure and services and disrupted families through migrant labour systems (Westaway, 2012, p. 118).

fund their tuition fees and campus accommodation through bursaries, particularly the National Student Financial Aid Scheme (NSFAS). A number of students work part-time and/or have family responsibilities such as caring for children, siblings or ill family members.

The writing assignment asked students to describe their present interactions with tertiary education. Thirteen students took part in the landscape architectural Foundation programme which provides a one year extension to their diploma, prior to their first year of study. Approximately half of the class described an interest in plants, nature, drawing or design but it is unclear if these were original motivators to register to study landscape architecture. A third of the class specifically mentioned that landscape architecture was not a first choice of study. First choice studies included nursing, dental technology, civil engineering and law. Some students live in university accommodation and are able to access campus via university transport, but for the majority of students, public transport costs and delays have a significant impact on their access to

campus. Only two students in the class have access to private transportation. While the timetable allows for access of studios, libraries, tutors and computer labs during the day, students who live in university accommodation make particular use of these resources during the evenings and on weekends. In general the class communicate and assist each other. The strong leadership of two class representatives has a positive impact on communication. The class representatives manage a WhatsApp group that also includes most of the students in the class as well as two subject lecturers.

The final question in the writing assignment asked students to share their goals or dreams for their future. Employment is a large part of how students envision their future after graduation: many students express dreams of owning their own landscape business, creating employment, supporting their families financially, building up their community and designing landscapes for people to enjoy. Quite a number of the 13 female participants aspire to become successful 'career women'.

In addition to the student participants, there are two lecturers involved with the case study project, myself and a co-lecturer, Nel⁷. Both lecturers are professionally-qualified Landscape Architects, having studied to masters level at South African universities. Both lecturers have worked in private practice as well as higher education. Another lecturer from the Diploma in Landscape Architecture, Walter⁷, also participated in the study as the internal moderator at the students' final presentation assessment.

3.3 Ethical considerations

The primary motive behind this research study is to address transformation in the landscape architectural industry. There is a need to develop landscape architectural practices and pedagogies that connect to the local and global practices and experiences of the students who are learning to become landscape architectural professionals. Acknowledging diversity as an opportunity is at the heart of the theoretical rationale of this study and so it follows that this should

be true of the process of data collection and ethical considerations. My assumptions and hypotheses are the catalyst for this research study, but these need to be carefully acknowledged and challenged through data collection and analysis. De Souza (2017, p. 197) emphasises Spivak's (2004, p. 6) caution that it is not enough to 'unlearn one's privilege', there is an ethical responsibility to oppose the view that the Global South needs 'rescuing', "resisting the temptation of projecting oneself or one's world onto the other" (de Souza, 2017, p. 197).

The first part of a strategy of empowerment of the participants is to design the study as 'research-as-intervention' (Swartz 2011:62); designing stimulating and engaging activities that will benefit the participants. The additional types of activities such as the 1:1 chalk drawing and mind map exercises not only contributed to the data collection in this research, but provided students with different opportunities to reconceptualise their projects. Because of my position as both researcher and lecturer there are inherent power relations. The second

⁷ Both Nel and Walter are pseudonyms.

part of empowering participants is to 'flatten' these power relations by building up trust, respect, dignity and positive relationships with the participants. To prevent potential biases due to researcher engagement, the co-lecturer and internal moderator performed the final summative assessment of the project.

Prior to collecting data, this research was approved by the School of Education Ethics Committee at the University of Cape Town, the Ethics Committee at the Higher Education Institution in which this research takes place and the Head of the Department for the Diploma in Landscape Architecture. Ethics approval letters have not been included in the appendices to ensure anonymity of the Institution. Before the start of the project and data collection, the nature of the research study was discussed with the students and co-lecturer. Students were not coerced to join in the study and, if they agreed to participate, were able to entirely or partially withdraw at any time. The co-lecturer, internal examiner and 34 students opted to participate in the study and signed written consent forms. Students' participation in

the study was confidential. No students were excluded from participating in the activities relating to the project. Students who chose not to participate in the study were therefore not at a disadvantage in terms of their own progress in the subject or the final assessment. Where possible I have tried to keep students' identities and data anonymous, and have given all participants pseudonyms. It is important to be reminded of the adage 'research is a privilege, not a right'. As a researcher, my mandate is to open up possibilities, not to oppress or control participants. Those who chose to participate in this research study had the autonomy to express themselves, visually, spatially and verbally. As Santos (2014, p. 6) reminds us, people "do not want to be spoken about. We want to speak for ourselves." In order to ensure triangulation of data collected, a range of activities was designed, providing multiple angles and opportunities for participants to represent themselves, their work and their thoughts.

There are three significant aspects of the project that have particular ethical considerations for this

study. The first is the 'observer effect' of recording the student peer discussions, the second is the access and availability of model-building materials, and the third is the portrayal of students' recognition of learning. In terms of the 'observer effect', it is clear from some of the transcripts of the peer group discussions, that the students, being aware of the recording devices, have at times consciously or unconsciously moderated the nature of their discussions. Even though lecturers were not present in the peer discussions, the recording devices nevertheless represented the presence or aspects of power associated with a lecturer. Although the recording devices may have changed the nature of the student discussions, this change may also have positively affected the students' engagement in the project. Having taught this project in subsequent years where student discussions have not been recorded, I have observed that the presence and power aspects related to the recording devices have mostly resulted in more meticulous and thorough student peer discussions, which are beneficial to the students' design trajectories. Because of the potential intrusion in these

discussions, the recording devices used in group crits and peer discussions were controlled entirely by the students who could choose where to aim the camera and when to start and stop recording.

The second ethical concern is lecturer influence on the physical materials available for model-building. In any class group there is diversity in terms of access to financial resources. The concern was that this difference in access to financial resources may affect the range and quality of model-building resources students could draw on during their project. In order to ensure that all students had equal access to model-building resources, a range of materials was selected and provided for students to use, if they chose to. In a research study where the aim is to make visible the resources students choose to bring to their learning environment, this selection of model-building resources has affected the types of material resources students used to build their models.

Finally, in line with a multimodal social semiotic approach, consideration is given to the ways in which participants' signs of learning are portrayed. Bezemer and Kress (2016, p. 3) emphasise that through a multimodal social semiotic lens, "learning is evidenced in every sign produced, not by a pre-defined, selective subset of signs". Through this research, I have had to challenge my own pedagogical habits of assessing students and have aimed to focus on the agency and interest of the students as meaning-makers.

The following section describes the various types of data collected throughout the research study.

3.4 Data collection

The focus of this research is to identify what resources students draw on, and how they deploy these resources in their spatial model project. Students' design processes, combining resources and making texts, takes place over time and in different places. A student may design their graphic narrative or model over several days, in their

home, or residence room, or in the studio classroom. As part of the studio subject, students are required to present their design progress in crit sessions. Without needing to record students' entire meaning-making trajectories, these crit sessions provide opportunities for students to reflect on the meaning-making trajectory of their text (Tusting, 2017). The data collection has focused on these presentations of texts as 'fixings' or 'punctuations' (Kress, 2010, p. 120), in the students' design trajectories. The texts, the 2D graphic narrative, and the 3D spatial model, are the dominant modes and form the primary units of analysis in this research. Other modes within the multimodal ensemble of the crit such as speech and gesture, expand or modify meanings (Bezemer & Jewitt, 2010) and assist others to interpret the text. The crit is a dynamic meaning-making process: the other students and lecturers present, may ask questions for clarification or to elucidate meanings, may challenge or contest particular meanings, or may provide prompts for future 'fixings' of meanings in the trajectory. The most important data collection revolves around recording this multimodal ensemble: audio-

video recordings of the text and crit discussion, and comprehensive photographs of the students' texts. Supplementary data such as students' comment sheets, interviews and field notes aim to record data that relate to the students' design trajectories.

In line with a qualitative, ethnographic approach to a case study, this subsection describes the case study activities and the data collected. Table 3.1 summarises the activities, texts and type of data collected throughout the case study project. There is not necessarily a complete set of data collected for every student: some students may have missed a particular class session or did not complete an activity or comment sheet.

3.4.1 Video recordings

While video is acknowledged to be a subjective view of reality (Cousin, 2008, p. 215) it is beneficial to record sound, image and gesture to provide rich data for analysis. All crit discussions, both those with a lecturer present, as well as peer group discussions, were

recorded using tablet devices. Generally, crit sessions comprise groups of six to eight people sitting around a large desk or group of desks. Setting up a camera in a fixed point may result in some students facing away from the camera. The use of tablet devices provides the ease of mobility to readjust the camera angle for each student as they present their work. Because the tablets display the recorded image, students are able to see what views or angles are being recorded and are able to adjust the camera accordingly. In addition to recording crit discussions, students also used the tablets to record their 1:1 chalk drawings. They video-recorded their description of the designed or intended user experience, as well as demonstrations of how a user may access and move around their design. Students' final presentation of all their work to the panel of assessors was also video-recorded as part of the data collection.

As shown by Luff et al (2014), design discussions around a visual text are supported by speech and gesture. For example, a student may point to an element in the model

Table 3.1 Summary of texts produced and data collected throughout the case study

Key	Description	Data collected	
P	a	Students select a narrative and represent this as a poster or graphic narrative	Scanned copy of graphic narrative
	b	The graphic narrative is presented as a multimodal ensemble (verbal, visual and gestural) to a small group	Students' graphic narrative presentations and the group discussions are video recorded and the speech is transcribed
	c	The student and the group discuss a set of questions on the comment sheet about the graphic narrative	
	d	Students write down notes on their comment sheet	Scanned copy of comment sheets
1	a	Students make Model 1	Photographs of Model 1
	b	Students present their Model 1 as a multimodal ensemble in a crit group	Students' Model 1 presentations and the group discussions are video recorded and the speech is transcribed
	c	The crit group discusses Model 1 and provides input, thoughts and suggestions	
	d	Notes or sketches are recorded on a comment sheet	Scanned copy of comment sheets
	e	Students present their Model 1 as a multimodal ensemble to a group of peers and discuss a set of questions on the comment sheet	Students' peer group discussions are video recorded and the speech is translated (where relevant) and transcribed
	f	Students write down notes from this discussion on their comment sheet	Scanned copy of comment sheets
C	a	Students draw a 1:1 chalk drawing of their Model 1 or Model 2	Photographs of student's chalk drawings
	b	Students video themselves walking through their 1:1 chalk drawing	Videos of students narrating / walking through chalk drawing
	c	Students write a reflective blog on their Facebook page about their chalk drawing activity	PDF copy of Facebook page post
2	a	Students make Model 2	Photographs of Model 2
	b	Students present their Model 2 as a multimodal ensemble in a crit group	Students' Model 2 presentations and the group discussions are video recorded and the speech is transcribed
	c	The crit group discusses Model 2 and provides input, thoughts and suggestions	

	d	Notes or sketches are recorded on a comment sheet	Scanned copy of comment sheets
	e	Students present their Model 2 as a multimodal ensemble to a group of peers and discuss a set of questions on the comment sheet	Students' peer group discussions are video recorded and the speech is translated (where relevant) and transcribed
	f	Students write down notes from this discussion on their comment sheet	Scanned copy of comment sheets
3	a	Students make Model 3	Photographs of Model 3
	b	Students present their Model 3 as a multimodal ensemble in a crit group	Students' Model 3 presentations and the group discussions are video recorded and the speech is transcribed
	c	The crit group discusses Model 3 and provides input, thoughts and suggestions	
	d	Notes or sketches are recorded on a comment sheet	Scanned copy of comment sheets
	e	Students present their Model 3 as a multimodal ensemble to a group of peers and discuss a set of questions on the comment sheet	Students' peer group discussions are video recorded and the speech is translated (where relevant) and transcribed
	f	Students write down notes from this discussion on their comment sheet	Scanned copy of comment sheets
M		Students participate in mind map activity	Scanned copy of mind maps
A		Students present a multimodal ensemble of their graphic narrative, all models and drawings to a panel of assessors	Students' final presentations to examiners are video recorded and speech transcribed
F	1	Four students participate in a focus group discussion	Audio recorded and transcribed
	2	Two students participate in a focus group discussion	Audio recorded and transcribed
I		Nadine participated in a personal interview	Audio recorded and transcribed
N		Personal notes and observations	Hand-written notes

and say 'people will move through here'. It is important to record the modes of speech and gesture related to the model. As discussed in the literature review, meaning-potentials are not universal. The use of the colour white, for example, may include a range of meaning-potentials from peace, to void or emptiness, to purity, to loss or mourning. Without a student's explanation, their use of the colour white in a model, would therefore be subject to my interpretation. In a research study where I am interrogating my own assumptions and discourses, it would be remiss to include only my own interpretation of students' texts. While there will always be some degree of my own interpretation of the students' data, the recording of students' verbal and gestural explanation of their text is important to maintain the integrity of the interpretation of their texts. Multimodal data is often complex and diverse, and the collection or recording and transcription of this data will inevitably result in re-representations that are different to those located in the field (Dicks et al., 2006, p. 78; Flewitt et al., 2014, p. 50). The process of transcription, description and interpretation of multimodal data, therefore involves

transduction, the change in meaning from one mode to another (Kress, 2010, p. 43), of this data (Flewitt et al., 2014, p. 52). Although it is a re-presentation and transduction of the original multimodal ensemble, wherever possible, students' verbal and gestural explanations of their texts have been included in the data analysis chapters.

3.4.2 Scans and photographs of students' texts

Students' 2D graphic narratives were digitally recorded and all models photographed. Although digital photos may show depth and perspective, they represent a three dimensional object from a single viewpoint. Each of the students' models were photographed against a white background to ensure maximum clarity and were also photographed from multiple angles to capture different views.

3.4.3 Supplementary data

Students' comment sheets

Students were required to complete comment sheets during or after crit discussions (see Appendices, B, E, G and H). The comment sheets include questions that prompt students to reflect on the crit discussion or to 'fix' particular meanings of a model in writing. These comments sheets are used in this study to trace students' design trajectories and to reflect on how they used the crit sessions to move their designs forward.

Interviews and focus group discussions

Interviews are not strictly ethnographic methods (Blommaert & Jie, 2010). Informal conversations, semi-structured interviews or focus groups however, can be key to developing a 'third space' (Cousin, 2008, p. 73) where the researcher and participants work together to develop understandings. At the end of the spatial model project, six students participated in two focus groups.

The aim of the focus groups was to gauge students' perceptions of the abstract spatial model project and to determine if there were significant issues relating to the research questions that had not been addressed during the spatial model project.

Observations and field notes

Blommaert and Jie (2010) highly recommend recording field notes promptly after every field work event. These field notes, which often include subjective, impressionistic and emotional responses (Blommaert & Jie, 2010), may become valuable to the dynamic process of unfolding knowledge. I recorded my own notes after each class session or activity within the case study. These notes have helped to reflect on significant moments in the case study and have helped guide the data analysis.

The following subsection describes the ways in which the data described above was analysed.

3.4.4 Reviewing the data

When collecting data, the video-recordings and photographs were logged chronologically per student. This enabled tracking of a particular student's trajectory during analysis. The audio was first transcribed from the video data, and later gesture, and sometimes, pace and emphasis added to the transcription. Video data can produce rich data but also a lot of it (Bezemer & Jewitt, 2010). The data set includes approximately 20 hours of audio-video recordings and 800 images of students' texts. My field notes were instrumental in guiding the data sampling to select moments for detailed analysis.

In terms of the process of data analysis, video data allows for repeated viewing as well as being able to focus or pause particular moments (Bezemer & Jewitt, 2010). Multimodal researchers such as Bezemer and Jewitt (2010) and Flewitt et al (2014) transcribe video data into matrices that segment the data according to various modes over time, including gaze, gesture, movement, language and tone. This may be useful where the video

data is the primary unit of analysis, but in this research study the spatial model is the primary unit of analysis, therefore video has not been transcribed in this way.

The following subsection describes how participant data was selected.

3.4.5 Selection of participant data

Given the extent of data collected during the case study, careful decisions were made around which participants' data to share in this thesis. The final structure of the three data analysis chapters aligns with each of the three research questions. These research questions therefore played a role in determining the appropriate data to present and interrogate in each chapter. This subsection aims to unpack the decisions around selection of participant data for each of the three data analysis chapters.

Chapter 4: Malibongwe

Chapter 4 centers around investigating the question ‘what resources do diverse students bring to their learning experiences in the context of landscape architectural education?’ Malibongwe’s spatial model is analysed in this chapter because it is distinct from many of the other students’ projects. Firstly his narrative about the Marikana massacre illuminates the stark differences between students’ experiences inside and outside of the landscape architectural classroom. His narrative brings interest and resources into the classroom that may have previously been ignored or dismissed and I felt that unpacking these resources would go some way to addressing the first research question. Secondly Malibongwe’s spatial model excels in terms of abstracting concepts into space-making and as a result his project was awarded the highest mark in the class. Chapter 4 aims to not only make visible but to valorise the resources Malibongwe brings to his design trajectory and shows how his transformation of resources results in a ‘Kressian moment’ (Newfield, 2013).

Chapter 5: Nadine

Chapter 5 aims to understand the question ‘how do students mobilise these resources to move between spatial, visual, and verbal modes in a (landscape architectural) design trajectory?’ While many students thoroughly engaged in the activities of the design project, not all students participated in every activity. Because Nadine meticulously filled out her comment sheets and volunteered to participate in a focus group and personal interview, more moments in her design trajectory were available in the data collected. Nadine’s more thorough set of data provides more opportunities to trace movement and uptake of resources in her design trajectory. Through the data analysis, this chapter contributes to an understanding of how resources are deployed in design trajectories as well as the role of these resources in terms of being ‘taken up’ and transformed in later phases of a design trajectory.

Chapter 6

This chapter explores the third research question ‘how can landscape architectural education draw on students’ diverse resources to develop a multimodal pedagogy for diversity?’ by focusing on students as (re)-makers (Kress, 2010, p. 69) of landscape architectural design. This chapter draws on Thesen and Coopers’ (2014) concept of productive risk in order to understand how students navigate the ‘contact zone’ (Pratt, 1999) between their resources and experiences, and the dominant landscape architectural discourse. This focus helped to narrow the data that would be presented in this chapter: Thozama, Mbulelo, Xola and Cebisa’s models were selected for discussion because they each successfully negotiated risk in their projects in different ways. However, the use of students’ experiential resources to access dominant discourses is not unproblematic. This chapter interrogates these dilemmas of risk by also exploring the spatial model design projects of two students, Khanyiswa and Sonwabo. While both students bring their own experiences and resources with them, they

each have varying ‘success’ in mediating these in relation to landscape architectural design. The exploration of these six students’ work enables an understanding of the role of pedagogical resources in design trajectories and contributes to the development of guidelines for a multimodal pedagogy for diversity.

Having described the nature and method of data collection, the following section outlines the methodological framework that is used in Chapters 4, 5 and 6, to analyse students’ 2D and 3D texts.

3.5 Framework for identifying students’ resources in 2D and 3D texts in landscape architectural education

The first and second research questions aim to recognise the resources that students bring to their learning environment and how they use these resources to move along their design trajectory. In order to recognise resources, including those that may

have previously been unnoticed or invisible, I have developed a framework for analysis. This framework makes use of Halliday's (1978) three metafunctions or categories of meaning; the subsequent developments by Kress and van Leeuwen (2006) on the 'grammar of visual design'; and the work of Ravelli and McMurtrie (2016) and Stenglin (2004, 2008) on the 'grammar' of three dimensional space. The analytical framework includes theories of design, architecture and landscape architecture, by weaving relevant visual design and space-making theories of practitioners such as Ching (2015) and Dee (2013) into the framework of meaning potentials.

While the analytical framework draws on research from the Global North, the meaning potentials the framework describe are not universal, but categorise how and what texts could mean. The framework is designed around questions that can be 'asked' of the text, for example, 'what is the story of this text?' or 'how can I interact in this text?'. The questions are open-ended to allow for the possible identification of

meanings that may have otherwise remained invisible. The examples in the framework are illustrative but by no means exhaustive: the intention is that the framework could uncover new meaning potentials that students draw on. The underlying premise of social semiotics is that modes or systems of meaning are not fixed, but are subject to change by communities of meaning-makers. This reinforces the importance of recording students' explanations of what their texts mean. In order to develop categories of meaning potentials, the framework is modelled on Halliday's (1978) categories of meanings or 'metafunctions'.

Social semiotic research is based on Halliday's (1978) Systemic Functional Linguistics (SFL). SFL presupposes that meaning-making comprises many semiotic systems such as music, painting and language; and that these meaning-making systems are connected to social use and change and evolve according to the needs and practices of their community of users (Unsworth, 2008, p. 1). According to SFL, the meaning-making resources of a text, the product of a meaning-making activity,

can be arranged into three categories of meaning or 'metafunctions': *ideational*, *interpersonal* and *textual*. The ideational metafunction involves how a text represents or constructs experiences, circumstances, participants or objects in the world (Halliday, 1978). Interpersonal meanings include the social relationships and positioning between a text, the makers of this text and its viewers or users (Ravelli & McMurtrie, 2016, p. 6; Unsworth, 2008, p. 3). Textual meanings include how semiotic choices have been organised within a text, (O'Halloran, 2014, p. 125) for example, the relationships between elements within a text and its *gestalt* or overall composition (Unsworth, 2008, p. 3). While Halliday primarily focused on language, these three metafunctions have been applied to other semiotic modes such as images (Kress & van Leeuwen, 2006) and three dimensional space (Ravelli & McMurtrie, 2016). This metafunctional approach has been used as the basis to develop not only an understanding of the meaning potentials of semiotic resources, but a means to analyse semiotic choices of real texts, out of a range of possible choices (Kress & van Leeuwen, 2006, p. 42; O'Halloran, 2014, p. 125). In this thesis, this framework

for analysis provides opportunities for new viewings of student texts, constructing different orders of visibility and widening the range of perspectives beyond the dominant discourse and pedagogy. While traditionally, landscape architecture may place more emphasis on textual resources, this framework also foregrounds the ideational and interpersonal resources that students may draw on in their meaning-making processes.

Table 3.2 is a summary of the analytical framework for identifying resources in students' 2D and 3D landscape texts. The framework on its own, outlines groups of meaning potentials, ways a text *could* mean. The application of the framework is to analyse both the students' 2D graphic narratives and their 3D spatial models. The framework includes meaning-potentials of both the physical 3D model as well as the model-as-projection: the imagined space that would be installed if the project were to reach construction phase. While this framework aims to identify the semiotic resources that have been realised in a text, identifying how these have been expressed in a text, may point to the experiential,

interactional, social, linguistic and pedagogical resources that students may have drawn on in their meaning-making processes. The following three sections of this chapter describe in turn, the ideational, interpersonal and textual meaning potentials for the 2D and 3D texts produced by students in the spatial model project.

3.5.1 Ideational meaning potentials

A text, a 'punctuation' in the 'flow of semiosis' (Kress, 2010), is the realisation of the meaning-making process. The ideational meanings of a text comprise experiential and logical meanings (O'Halloran, 2014, p. 125): how people, places, events, objects and circumstances are constructed and connected (Jewitt, 2014a, p. 25; Kress, 2000, p. 87; Unsworth, 2008, p. 3). Ideational meanings include the *purpose* of the text: how the text may be used, or what it is used for; as well as the *guiding theme*: the metaphoric or symbolic meanings or behind the text. Additionally, ideational meanings include the resources the meaning-maker has drawn on to organise knowledge or construct the *argument* of the text.

3.5.1.1 Purpose

The way the *purpose* has been realised in a text can be determined by asking 'what is this text for?' Analysing meaning potentials in terms of purpose help to locate the text in terms of *setting*, *ownership* or context, types of *activities*, and *macro-genres* and *primary genres*. Although the model brief requires students to design a spatial model in an urban public park, the students' graphic narratives may reveal different types of settings or geographical locations. For example, the *setting* of one student's graphic narrative is that of an informal settlement⁸.

To understand the purpose of a text, O'Toole (1994, p. 86) also examined the type of *ownership* of the text: residential, institutional, governmental, commercial or religious. While O'Toole primarily applied this to buildings and architecture, the content of students' graphic narratives and spatial models could also be analysed in terms of ownership or context. The nature and degree of ownership affects the type of users in

⁸ Informal settlements, characterised by buildings made from corrugated metal sheets and other found materials, are a result of apartheid spatial planning practices. Despite 25 years of democracy, inequalities in access to land, housing, transport, and basic services persist in informal settlements.

Table 3.2 Framework to identify students’ semiotic resources in 2D and 3D texts in landscape architectural education

Metafunction	Questions	Realisation in the projection of the 3D landscape spatial models	Realisation in 2D graphic narratives
Ideational meaning potentials 3.5.1	“What is this text for?”	Purpose 3.5.1.1	Setting: urban, rural, residential, informal; geographical location Ownership / context: residential, institutional, governmental commercial, religious (O’Toole, 1994, 86); Continuum of public - semi-public - private Activities: economic, recreation, social, cultural, aesthetic, ecological, health and fitness (Dee, 2013, p. 36) Macro-genres (Ravelli & McMurtrie, 2016, p. 14-16): kraal, amphitheatre, square / piazza, orchard, maze, forest, labyrinth, courtyards, walled gardens, ‘werf’, avenue, meadow, boardwalk, promenade, colonnade, wall, grove, play area Primary genres (Ravelli & McMurtrie 2016, p. 14-16): rondavel, wellpoint, bridge, gazebo, pagoda, folly, topiary, seat wall, reflection pond, fountain, grotto, rill, bench, pergola
	“What is the story of this text?”	Guiding theme 3.5.1.2	Concept (e.g. loss, freedom), paradigm (e.g. ecofeminism), symbolism or metaphor, pattern Narrative: stories, songs, fables, journeys, biographies, myth Qualities of place e.g. responsiveness, originality, layering, robustness, inclusiveness, mystery, complexity, coherence, diversity, refuge, integration, safety (Dee, 2013)
	“What strategy has been used to organise knowledge in order to construct the argument in this text?”	Argument 3.5.1.3	Narrative, juxtaposition, induction, classification, comparison (Archer, 2016, p. 96)

Interpersonal meaning potentials 3.5.2	“How does this text make me feel?” “How connected do I feel to this text?”	Affect 3.5.2.1	Belonging / familiarity: Bonding (Stenglin, 2004, 2008); Insider / outsider continuum	
			Impression or ‘sense of place’: Average vs individual reaction; feelings / emotions	
			Comfort: ergonomics, human scale, barriers, microclimate, physiological experiences	
			Binding continuum: Too Unbound - Unbound - Bound - Too Bound (Stenglin 2004, 2008)	
	“How can I interact in this text?”	Interaction 3.5.2.2	Power: position e.g. (horizontal and vertical angles); control (e.g. maximum / minimum, visible / invisible); spatial engagement (e.g. heteroglossic / monoglossic, self-Binding) (Ravelli & McMurtrie, 2016)	
			Social distance: proxemics (Hall, 1966); intimate, personal, social and public distance; contact: direct contact, eye contact, one-way contact, auditory contact	Contact and size of frame (Kress & van Leeuwen, 2006)
“Who can I be in this text?”	Identity 3.5.2.3	Indexicality, possible roles and performances (Scollon & Scollon, 2003)		
“How does the maker of the text draw on a range of existing designs or similar texts?”	Precedent 3.5.2.4	Range of designs (e.g. Boomslang, the raised walkway at Kirstenbosch)	Types of 2D graphic narratives: collage, ‘filmstrip’, ‘scene’, ‘movie poster’	
“How credible is this text?”	Modality 3.5.2.5	Modality markers for 3D models include scale; functional aesthetics; user engagement / participation; type of sign; construction	Modality markers for 2D images include colour saturation, colour differentiation, colour modulation, depth, illumination, brightness, representation	

Textual meaning potentials 3.5.3	“How have compositional resources been used to arrange the elements in this text?”	Compositional resources 3.5.3.1	Coherence “how does the viewer understand where to move / look?” (legibility, sequence, path / reading path)	
			Saliency: “how does the viewer know what is important?” “what attracts the viewer’s attention?” (Kress and van Leeuwen, 2006, p. 177) (significance, emphasis, information value, contrast, foregrounding)	
			Cohesion: “how do the elements fit together?” “how are elements connected or disconnected?” (Kress and van Leeuwen 2006, p. 177) (distinction, delimitations, dis/connections, relationships, unity, balance, framing, proximity, similarity, repetition, balance)	
			Degree of enclosure (groundedness, distance between planes, elevation, permeability)	
	“How have physical resources been used to make this text?”	Physical resources 3.5.3.2	Elements of design: Points, lines, vectors, planes, edges, volumes, voids, shapes, forms, types of spaces, organisation of spaces, figure-ground (Ching, 2015; Dee, 2013; Kress & van Leeuwen, 2006)	
			Materiality: materials (e.g. bricks, plants, paper, glue), techniques / methods (e.g. cutting, folding hatching) and sensory aspects (e.g. colour, texture, scent, light, temperature, views)	
			Actions: Users and movement, time, natural systems / processes	

a space, for example there are different expectations of which users may enter privately owned commercial spaces, as compared to institutional public spaces.

Included in functional meaning potentials, are Dee's (2013) categories of activities that take place in landscape texts: social and recreational, economic, cultural, aesthetic, ecological and health and fitness (p. 36). These types of *activities* may be identified in both the students' spatial models and graphic narratives.

In architecture, Ravelli and McMurtrie (2016) distinguish between *macro-genres* and *primary genres*.

A macro-genre is the larger, overarching social purpose and functional structure of a spatial text: 'shopping centre', or 'museum'. Primary genres are the small-scale, functional arrangements of items, often prefabricated, which are embedded in the larger-scale arrangement in order to help fulfil the social purpose of the text, for example, 'purchase point' or 'art display'. (p. 16)

These concepts of macro-genres and primary genres could be used to analyse 3D landscape texts, including the students' model-as-projections. Macro-genres are similar to Dee's (2013) 'archetypes' or Herrington's 'typologies' (2017, p. 157) and can be identified in landscape architecture. Examples include the traditional African enclosure or kraal, 'werf', amphitheatre, public square or piazza, orchard or walled garden. These archetypes share common characteristics, but may take different forms in different contexts. For example, the Cape Dutch farm 'werf' often includes a central axis, low white walls, an avenue of trees and large unpaved, laterite-surfaced spaces. Primary genres in landscape architecture include recognisable landscape elements that fulfil a particular social function, for example: a rondavel, wellpoint, pergola or reflection pond.

While the purpose of a text may give insight into the physical and literal functions, the conceptual or symbolic meanings of the text can be analysed in terms of guiding themes.

3.5.1.2 Guiding theme

As discussed in the literature review, the term *guiding theme* is used to describe any of the overarching concepts used by the designer to make decisions within the design, or for users to interpret their experience of the design (Moore, 2010; van Dooren et al., 2013). The guiding theme can be established through asking ‘what is the story of the text?’ or ‘what does the text stand for?’ (Ravelli, 2008, p. 18). Guiding themes include *concepts*, *paradigms*, *narratives*, *metaphors* or *patterns*. Particularly in three dimensional spaces these guiding themes can reveal particular *qualities of place* such as ‘mystery’ or ‘refuge’ (Dee, 2013, p. 13). The guiding themes are the basis around which students design their studio project, from their graphic narrative through to their final spatial model. While the students make use of narratives as a guiding theme, these are often complex and multi-layered. As seen in the data analysis, a student’s guiding theme may change at times in their design trajectory. Students’ choice of guiding theme may be prompted by their interest, what they deem criterial, but they may

also draw from social and experiential resources, for example, when selecting their guiding theme.

3.5.1.3 Argument

Ideational meaning potentials include the ways in which the meaning-maker understands their world, how they classify or categorise the information, and how they use *argument* to organise or construct knowledge within the text. Argument is realised through textual resources. There are many different ways of organising knowledge or argument, for example *comparison* constructs argument through similarities and differences, while *juxtaposition* conveys argument through challenging existing structures (Archer, 2016, p. 96). Other ways of conveying the argument include *narrative*, *induction* and *classification*. The ideational meanings of a text can be identified by analysing the purpose, guiding theme or argument of a text. To understand how the maker or users of a text relate to each other or to the text, the analytical framework sets out categories in terms of the interpersonal metafunction.

3.5.2 Interpersonal meaning potentials

Ideational and textual meaning potentials are often foregrounded in design professions. The value of social semiotics in multimodal meaning-making is that it also draws attention to the social and interpersonal meaning potentials of texts. Interpersonal meanings include the different ways in which producers, users and texts orient themselves in relation to each other (Kress & van Leeuwen, 2006, p. 114). Interpersonal meaning potentials could be phrased as questions of the user or viewer of a text, such as ‘how does this text make me feel?’ and ‘who can I be in this text?’ (Ravelli & McMurtrie, 2016, p. 51). In this framework, *affect*, *interaction* and *identity* can be grouped together as categories of interpersonal meanings that relate to how a *user* may feel, interact or ‘be’ in the model-as-projection or in viewing the graphic narrative. *Precedent* and *modality* are categories of interpersonal meanings that relate to the *maker* of the text: how they have positioned themselves in relation to other texts, as well as how they construct the credibility of the text.

3.5.2.1 Affect

In this research, *affect* is considered as the experience of feelings: of both emotions and degree of physical comfort. Affect includes a person’s internal feelings, described in this framework as *belonging* or *impression*; as well as potential reactions to external stimuli such as *comfort* and *Binding*. Meaning potentials of affect include the imagined user of the model-as-projection as well as users and viewers of students’ graphic narratives. To analyse the affect of a text one could ask ‘how does this text make me feel?’ or ‘how connected do I feel to this text?’ All texts have some degree of affect, and that is a result of the choices made by the meaning-maker. “Even the maximally abstract modality of diagrams is an affective choice, by the very fact that it attempts to negate affect” (Kress & van Leeuwen, 2006, pp. 267–8). These affective choices could be analysed through a range of meaning potentials that focus on how a person may feel towards a text. Affect may include the degree to which a person may feel a sense of familiarity or belonging; impressions or sense of ‘spirit of place’; and

particularly with reference to the model-as-projection, how comfortable the imagined user feels physically; and how 'Bound' or 'Unbound' a person may feel in response to the text (Stenglin, 2004, 2008).

Belonging

Belonging is the degree of inclusiveness and affiliation that a person may feel towards a text. Belonging includes Stenglin's (2004, p. 22) work on Bonding which "is concerned with ways of building togetherness, inclusiveness and affiliation". However not all users of a space may not feel affiliation to a space or to other users. The degree to which a person may experience belonging in a space could depend on if they are an 'insider' or an 'outsider' in the space, or their sense of familiarity within that space. When designing public spaces, designers envision a community around the space who will take 'ownership' of it, not necessarily in terms of property ownership, but in a sense of stewardship. A space that may feel inclusive and community-based to one person, may feel disorienting and confusing to someone who is

marginal to that community. There may be tacit practices that are familiar to the regular users or communities in these spaces. If it is not obvious 'where to go' and 'what to do' in a space, strangers and outsiders may feel alienated or self-conscious. Belonging can also be analysed in 2D texts: particular patterns, colours or images may feel familiar or foreign to the viewer or may evoke particular memories affiliations. Insider / outside relations could be established through the use of coding or decoding, for example, a drawing using particular conventions may feel familiar to members of that particular community.

Impression or 'sense of place'

Affect can also include a person's reaction to a text or their *impression* of it. Norberg-Schulz's (1979, p. 10) concept of *genius loci* describes the 'sense of place' which people subconsciously experience and identify with a space or landscape. Some places, such as Kirstenbosch National Botanical Garden, commonly inspire delight and wonder in visitors. Other places, such as the catacombs of Paris,

are generally experienced as eerie or macabre. Affect however, is also based on individual preferences and moods. Two different people could feel a different sense of a place or reaction in the same space on the same day, and one person may experience the same text very differently at different times depending on factors such as the person's mood, time of day, weather conditions or crowdedness (Giro, 1999).

Comfort

Comfort comprises a range of textual arrangements that influence how comfortable a user may feel in a text. These textual arrangements include *ergonomics*, *human scale*, *barriers*, *microclimate* and *physiological experiences*.

Ergonomics is the study of how people interact with objects and their environment in terms of human structural dimensions and range of movements (Ching, 2015, p. 339). Texts that are designed around ergonomics may contribute to a user feeling more comfortable in a text. For example, a bench that is

too high or too low may not be as comfortable as a bench that accommodates seat-height ergonomics. Ergonomics also includes accommodating a range of different types of users such as adult pedestrians, cyclists, children and wheelchair users. In some public parks, for example, drinking fountains have been designed to accommodate standing adults, children, wheelchair users and even dogs (see Image 3.2 of a Green Point Urban Park drinking fountain).

The concept of ergonomics can be extended to consider the *human scale*: how a person relates to the larger environment or spaces within it (Dee, 2013, p. 47). Texts that take the human scale into account may be easier to relate to. For example, as illustrated in Image 3.3, a skyscraper may feel overpowering and intimidating to a person at ground level, but if human-scaled objects are added to the ground level of the building, a person may feel less intimidated. Ergonomics and human scale could also be applied to 2D texts, for example the scale of represented participants could affect how the viewer relates to the graphic narrative.



Image 3.2 A drinking fountain at Green Point Urban Park that accommodates wheelchair users and dogs

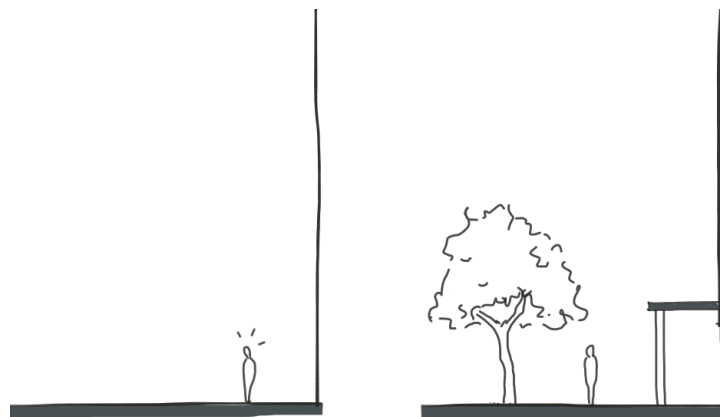


Image 3.3 Left: Space adjacent to tall building Right: Space adjacent to tall building ‘softened’ by elements that relate to the human-scale

There are other practical considerations that affect how a user may experience a space, including *barriers*, *microclimate* and *physiological experiences*. Barriers are obstacles or objects that restrict movement. Barriers are not necessarily solid walls: a soft lawned area might be a barrier to a person wearing high-heels and a set of stairs could be a barrier to a wheelchair user. Particularly in outdoor spaces, the degree of exposure to wind, rain and sunshine has a profound influence on a user’s experience and use of that space. In hot microclimates, users may feel more comfortable in cool, shady spaces, while in cool microclimates, users may gravitate towards warm, sunny areas. Generally, designers of outdoor spaces tend towards designing spaces where users feel comfortable, however designers may also intentionally manipulate space to cause unexpected physiological experiences. As an example, at the Jewish museum in Berlin, Daniel Libeskind designed the ground plane of the Garden of Exile to slope from one side to the other. The wall planes in this space are also slightly angled, perpendicular to the slope of the ground. The physical effect of walking through the space is one of

confusion and disorientation as gravity pulls the user to one side of the path. Libeskind's intention is a physical experience that echoes the journeys by ships and the disorientation in strange lands, experienced by exiled Jews of the 1930s and 40s. In this way the interpersonal, physiological experience of the space connects the user to the ideational meanings of the space.

Binding continuum

Closely related to how comfortable users feel in a space, is Stenglin's *Binding continuum* (2004, 2008) which describes how secure or vulnerable users feel within a space. Stenglin defines her continuum in terms of Bound or Unbound spaces. Bound spaces feel secure and protected while Unbound spaces allow for freedom and movement. Both Bound and Unbound spaces can be further categorised as weak, moderate or strong. At the extreme ends of this continuum Stenglin also describes Too Bound and Too Unbound spaces that are generally considered outside of the average human comfort range: Too Bound spaces may be experienced

as claustrophobic and restrictive while Too Unbound spaces may cause users to feel exposed and vulnerable. Binding could be applied to individual spaces as well as larger landscapes such as a neighbourhood or valley (Norberg-Schulz, 1979). Binding may be expressed through textual figurations of planes, permeability, texture, colour, light, and pattern (Stenglin, 2004, 2008).

In summary, affect includes interpersonal meaning-potentials between the user and the text, as realised through a sense of belonging, impressions and degree of Binding in a space. The following section discusses how *interaction* includes the meaning-potentials of the ways in which users physically engage or interact with the text or with other users.

3.5.2.2 Interaction

Both the 2D graphic narratives and the 3D models-as-projections are realised through combinations of textual choices. These textual choices have 2D and 3D spatial implications for the user in terms of interacting with

the text itself, or with other users of the text. Different combinations of interactive meaning potentials can be analysed in terms of *power* and *social distance*.

Power

Power is a resource that can resolve in 2D and 3D landscape texts through position, such as horizontal and vertical angles; the degree of control; and the degree of spatial engagement. Power can be established by the *position* between users or represented participants. This position can be created in terms of vertical or horizontal angles. This idea has been identified by Kress and van Leeuwen (2006, p. 140) in 2D images and Ravelli and McMurtrie (2016, p. 55) in 3D spaces: if a user is viewed from above, they may feel small and insignificant; if a user looks down at a space or object, that user may be considered to be in a position of power. Horizontal angles can also affect the power balance in an image or a space. Facing straight on to an object could be seen as more assertive compared to approaches from an oblique angle, which while more detached (Kress &

van Leeuwen, 2006, p. 136), could be considered less intimidating (Ravelli & McMurtrie, 2016, p. 58). Power can also be conveyed through metaphorical elevation such as wealth, status or authority. For example, in spaces, high quality materials and finishes may suggest the power of wealth (Ravelli & McMurtrie, 2016, p. 56).

The relative freedom of users in relation to a text could be defined by the degree of *control* (Ravelli & McMurtrie, 2016, p. 60). Control can be represented as a continuum from maximal control where users' movements and activities are highly restricted, to minimal control where users are free to choose where to wander (Ravelli & McMurtrie, 2016, p. 60). Ravelli and McMurtrie also describe social distance as the degree to which users can interact with a space: what a user of a text may access or what may be restricted (2016, p. 56). Control or social distance is also relevant in the students' 2D graphic narratives where the user may be more or less able to 'decode' an image. For example, adding a legend in a landscape drawing may assist a viewer in interpreting symbols in a drawing. In 3D spaces, control

can also be achieved through visible security means, such as barriers and signage, but it can also be achieved through invisible means such as inconspicuously located security personnel or CCTV cameras. Control may be established by a delegated authority, but control could also be established by a particular community in a space (S. Low, 2017). For example, different social communities may have particular conventions about whether shoes can be worn indoors or if shoes should be removed before entering a house. In these contexts, cues can often be taken from how others are behaving in that space (Scollon & Scollon, 2003, p. 59).

Spatial engagement is closely related to power as it is about the relationship between various users and the text: the degree of autonomy or freedom of movement a user may be permitted in a text. In terms of movement, Ravelli and McMurtrie (2016, p. 76) describe spaces as 'heteroglossic' if users can move around and gain multiple perspectives: dialogically expansive if they can access all areas and perspectives; dialogically contractive when there are multiple perspectives but not all can

necessarily be accessed. 'Monoglossic' spaces include those where there is only one perspective, one direction of movement or one way of doing something (Ravelli & McMurtrie, 2016, p. 76). Subversive user behaviour can transform a monoglossic space into a heteroglossic one; and the converse can take place if the user does not take up the opportunity to explore the multiple perspectives of the space (Ravelli & McMurtrie, 2016, p. 76). Ravelli and McMurtrie (2016, p. 87) have extended Stenglin's Binding framework to include 'self-Binding' which is the user's ability to adapt a space to their own needs (for example moving furniture), their location in the space, and their posture or position (Ravelli & McMurtrie, 2016, p. 88). Students' 3D spatial models can be analysed in terms of the degree of spatial engagement they have designed for the imagined users of their design.

Social distance

Social distance is the degree of interaction between users and a text or between other users in a text. This can be achieved through *proxemics* in spatial texts and through

contact and *size of frame* in 2D images. Edward Hall's (1966) concept of proxemics includes arrangements of fixed-feature space (buildings), semifixed-feature space (such as furniture) and informal space (p. 101). Informal space is defined by interpersonal distances between people and includes intimate distance, personal distance, social distance and public distance (Hall, 1966). These distances are dependent on the types of social relations between people (Kress & van Leeuwen, 2006, p. 125) and determine types of "learned situational personalities" (Hall, 1966, p. 115). For example, two people that know each other well could come within personal distance, but strangers generally cannot come this close without being rebuffed. There may be instances when it is unavoidable that strangers come within personal distances, such as commuting during peak times on public transport. In these situations commuters employ 'defense' strategies such as avoiding eye contact or limiting movements. Analysing the potential for interpersonal distances within a space could contribute to an understanding of the potential range of social interactions. A spatial design can be

analysed in terms of the extent to which users can come into contact with each other: direct contact, eye contact, one-way and auditory contact (Ravelli & McMurtrie, 2016, p. 58).

In 2D texts, potential relations may be established relative to the position of the viewer. Kress and van Leeuwen (2006) connected Edward Hall's concept of proxemics to the apparent distance between the viewer of a 2D text and the objects or represented participants in that text (p. 124). Contact between represented participants in the 2D text and viewer may be based on the extent to which their eyelines connect. For example, if the represented participant appears to gaze directly at the viewer the sense of contact is stronger (Kress & van Leeuwen, 2006, p. 117). Additionally, the size of the frame and choice between close, medium, or far personal distance, contributes to meaning potentials that determine apparent social or personal distances between the represented participant and viewer (Kress & van Leeuwen, 2006, pp. 124–5).

3.5.2.3 Identity

Interpersonal meanings include the *identity* that users or makers of texts project in relation to a text. When discussing a text in a crit, the viewers or users could take on identities such as 'student' or 'lecturer'. The makers of texts also project identities through the objects within the text itself, such as indexical meanings, or possible identities for the users of a spatial text. Identity in a text could be analysed by asking 'who can I be in this text?' (Ravelli & McMurtrie, 2016, p. 51). In the models-as-projections, meaning-makers design spaces for particular roles, performances and interaction units.

Indexicality can suggest what people or objects (consciously or unconsciously) 'signal' to others (Scollon & Scollon, 2003, p. 107). For example, Image 3.4 depicts two benches of a similar size and scale that are 500m apart yet what they 'index' or convey is quite different. The ornate armrests and legs of the bench (a) signals a heritage, rural or park setting, while the rectilinear forms of the bench (b) index a contemporary and urban



Image 3.4 Two examples of benches

setting. Indexicality of users to a space may be linked to the function and possible activities of the space, for example, a person in a public park could take on the role of ‘pedestrian’ or ‘cyclist’ (Dee, 2013, p. 83). In particular spaces there are appropriate roles in which a person would be seen as ‘fitting in’ (Scollon & Scollon, 2003, p. 59).

The embodied actions of any social actor are produced not only out of internal and personal motivations and meanings, but also in reference to and in conjunction with the actions of others within that same space. (Scollon & Scollon, 2003, p. 59)

Appropriate roles in a public park such as Green Point

Type of space	Examples of possible roles
University	Lecturer, student, parent, administrator, visitor
Public park	Cyclist, jogger, dog-walker, tourist, picnicker, skateboarder, pedestrian, garden maintenance employee, security personnel, local resident

Table 3.3 Examples of possible roles in types of spaces

Urban Park could include cyclists, joggers, dog-walkers, tourists, picnickers, photographers, skateboarders, pedestrians, garden maintenance teams and security personnel. A person selling electrical appliances may be out of kilter in a park, but not a person selling ice cream. Connected to the idea of roles is Goffman’s series of interaction units (Scollon & Scollon, 2003, p. 61): possible arrangements of people and their subsequent interactions. Analysing the types of interaction units possible in a space may provide insight into the types of roles, examples are provided in Table 3.3.

While affect, interaction and identity can describe interpersonal meanings between the user, texts and other users, the following two subsections: *precedent* and *modality*, describe the interpersonal meanings between the maker of the text and other texts or other makers of texts.

3.5.2.4 Precedent

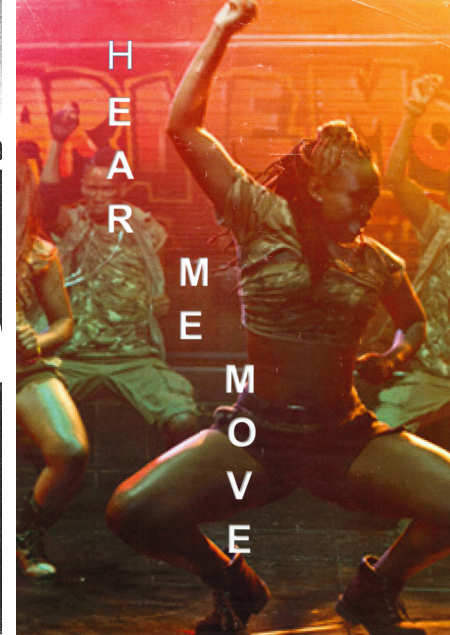
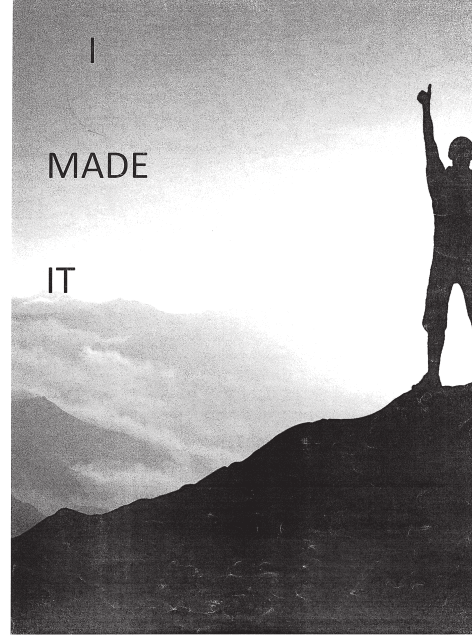
Precedent is the range of existing designs that meaning-makers consciously and unconsciously draw from during the design process. Previous exposure to different precedent forms part of a meaning-maker's precedent resources. Precedent is an interpersonal resource, as the use or choice of precedent positions and orients both the meaning-maker and the viewer or user. A meaning-maker may draw from precedent in terms of functional or social characteristics as well as compositional or formal features (Ravelli & McMurtrie, 2016, p. 15). In terms of analysing the students' 2D graphic narratives, students may have drawn from or been inspired by other 2D visual texts such as movie posters, collages, cartoon strips or scenes or stills (see examples in Image 3.5).

While this research study acknowledges that the students, as novice landscape designers, may not be exposed to an extensive range of landscape architectural precedent, students may draw from their

own experiences and precedent in their model building project.

3.5.2.5 Modality

Modality is a linguistic term that applies to how credible or real a text is constructed to be (Kress & van Leeuwen, 2006, p. 155). In linguistics, modality markers include words such as 'may', 'will' and 'must' (for example, 'it *may* rain' or 'it *will* rain') and indicate, along a continuum, how 'credible' a statement may be. In a similar manner, modality can indicate how 'credible' a visual text may be: some visual texts may be represented realistically, others may be more abstracted (Kress & van Leeuwen, 2006, p. 155). As with all social semiotic systems, what is 'credible' is determined by the particular practice and use of a meaning-making community (Kress & van Leeuwen, 2006, p. 163). For example, in art movements such as impressionism or cubism, photo-realistic images were less valued. The principles which govern modality within a particular social group or modality can be referred to as the 'coding orientation' (Kress & van Leeuwen,

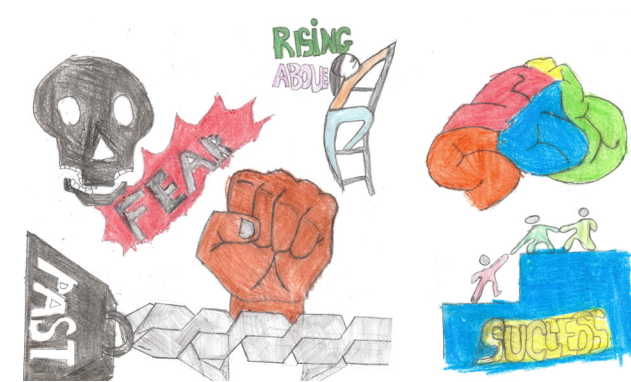


the "movie poster"

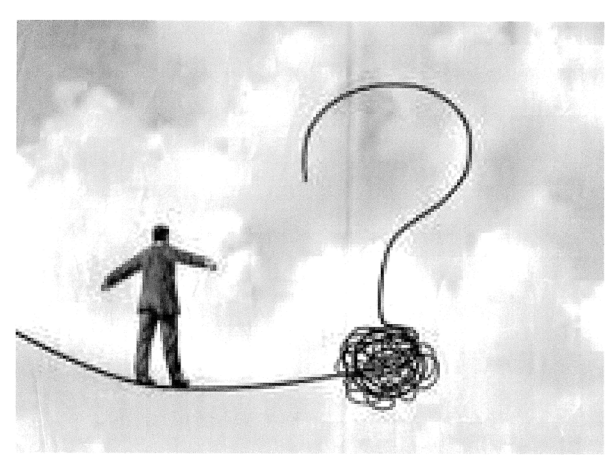


the "filmstrip"

WAR ROOM PRAYER IS A POWERFUL WEAPON.



the collage



the single "scene"

Image 3.5 Examples of students' graphic narratives (reduced from A3) grouped into genres

2006, p. 163). Coding orientation and modality markers may be different for different modes and domains. This methodological framework will focus on the use of modality as an analytical tool specifically for the 2D graphic narratives and 3D spatial models produced by the students. Modality has been considered as realising the interpersonal metafunction because it addresses the relationship between the viewer or user and the text by asking 'how credible is this text?'

Kress and van Leeuwen (2006) outlined eight potential modality markers for images that could apply to the analysis of the students' graphic narratives: colour saturation, colour differentiation, colour modulation, contextualisation, representation, depth, illumination and brightness. The role of these modality markers differs according to the coding orientation of the drawing: the students produced graphic narratives in a range of coding orientations including the abstract, naturalistic and hyper-real (such as cartoons and movie posters).

There are many reasons to design with models (Dunn, 2010). Models can be used to explore design concepts, to investigate spaces, prototype construction methods or present realistic representations to stakeholders. Model types may align to different coding orientations, for example spatial models tend towards the abstract, compared to construction models which tend towards the scientific or technological. The particular type of models students developed in this study, were spatial models: a means to focus on the types of spaces created by configurations of ground, wall and overhead planes as well as the dimensions and textures of these planes. While texture and materiality of planes in spatial models play a role, construction materials and methods are not a priority. For example, it is sufficient to show that a space is defined by a solid, smooth wall plane of a certain thickness but it is not necessary for the model to indicate the imagined materiality of the wall such as concrete, timber, brick and plaster. The modality of spatial models could be determined by modality markers such as: scale, functional aesthetics, user engagement / participation, type of sign and construction.

Models that are credible, and of high modality, allow the viewer to more easily imagine themselves interacting in the space. Providing a sense of scale is one way that a model could indicate to the viewer how they might relate to the full-scale space. Credibility is also achieved when meanings of the model are enhanced by the user moving through and experiencing the spaces or where the user participates in the meaning-making of the space. Models that are set up in such a way where the user passively views, as opposed to participates in the narrative, have a lower modality.

In the landscape and architectural domain, functional aesthetics and abstraction are highly valued in comparison to the use of superfluous decoration or conventionalised symbols. Forms that complement the function may be considered higher modality than decoration or pattern-making that has little identifiable function or social value. Because of the tendency towards the abstract and spatial, use of graphic symbols or icons lowers the modality of the model, compared to the use of signs as indexes or meanings

that are conveyed spatially. For example, in an abstract landscape coding orientation, a model conveying the meaning of 'love' by using a symbol of a heart has lower modality than a model that has attempted to express 'love' abstractly, for example, through a bounded but safe and embracing space.

The construction of the model also contributes towards its degree of modality. Sturdy models that are meticulously constructed, are better defined and could be considered as having high modality. Flimsy models that have been put together carelessly, do not appear well-defined and may be of lower modality. Health and safety considerations in a model could also therefore increase its modality. Examples of modality markers for 3D abstract spatial models are listed in Table 3.4.

This methodological framework has so far investigated ideational meanings that describe the 'what' of the text, '*what* is this text for?', '*what* is this text about?'; and interpersonal meanings that include the 'who' relations between users, makers and the text, '*who* can I be in

this text?', 'with *whom* can I interact in this text?'. The following section outlines textual meaning potentials that show 'how' the text has been put together, 'how have ideational and interpersonal meanings been realised' and 'how have the materials of this text been arranged?'

3.5.3 Textual meaning potentials

Textual resources are often thought of as physical, material resources, but can also include non-material and conceptual resources that are socially and culturally shaped (Bezemer & Kress, 2016, p. 7). While design professions tend to place significant value on the textual or compositional information when designing a text, multimodal social semiotics foregrounds the ideational and interpersonal meanings that are enabled (Halliday & Matthiessen, 2004 p.30) by these textual and compositional resources. Therefore, it is acknowledged that although the three metafunctions are discussed separately, ideational and interpersonal meanings cannot be analysed without also investigating

Low value	Modality marker	High value
No scale reference	<i>Scale</i>	Clear scale reference
Static, uninvolved	<i>User engagement / participation</i>	Dynamic, involved
Excessive decoration	<i>Functional aesthetics</i>	Clear, minimalist, functional
Graphic symbols or icons	<i>Type of sign</i>	Index through space
Flimsy, carelessly made	<i>Construction</i>	Sturdy, carefully crafted

Table 3.4 Modality markers for 3D abstract spatial models

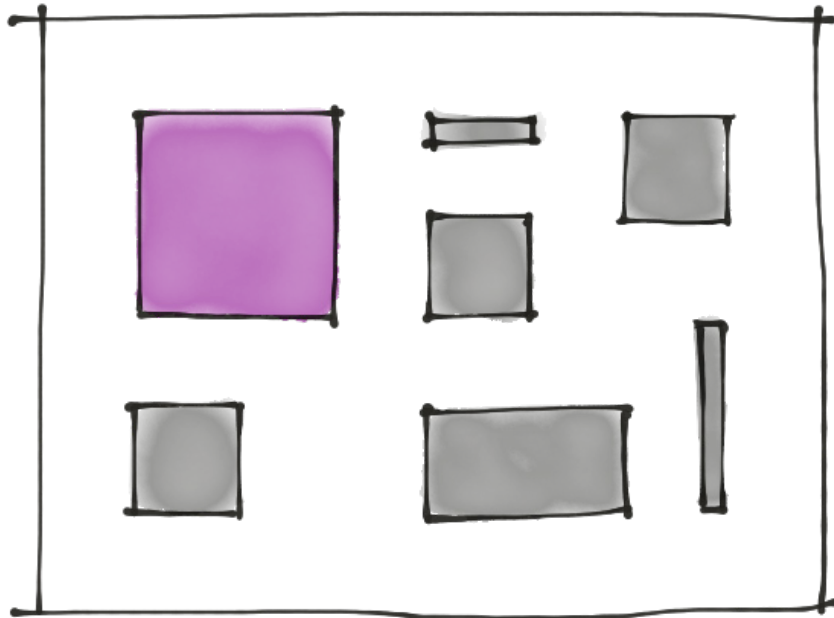


Image 3.6 Compositional layout

the textual meanings, and vice versa: the textual meanings should not be analysed in isolation but also require understanding the ideational and interpersonal meanings that they express.

In this section, textual meaning potentials have been grouped into non-material, *compositional resources* which are used to arrange elements within the overall composition; and *physical resources* such as the materials, forms and techniques that make up the 'stuff' of the text. These two groups of textual resources operate concurrently: for example, in Image 3.6, through the compositional resource *salience*, the viewer or user may interpret that the purple square is being emphasised or valued over the other grey rectangular shapes. *Salience* is realised through the physical resources of (contrasting) *size* and (contrasting) *colour*. Furthermore, if we imagined this image to be a map of the location of a concert in a particular town, we can illustrate how these categories of textual resources also realise ideational and interpersonal meanings. Although the framework distinguishes different categories of ideational,

interpersonal and textual resources, it is important to remember that these resources are interdependent.

3.5.3.1 Compositional resources

Compositional resources are socially-shaped, semiotic resources that are non-material, but are conveyed through the arrangement of elements within a text (Bezemer & Kress, 2016, p. 7). In discussing conceptual resources, Bezemer and Kress look at 'intensity' and show how it is realised in different modes: "In colour, this [intensity] can appear as *saturation*; in *lighting* as *brightness*; in *speech* as *loudness*; in *gesture* as *pace*" (2016, p. 7). In this framework, there are four types of compositional resources: *coherence*, *salience* and *cohesion* are realised in the students' 2D graphic narratives and 3D landscape spatial models; and *degree of enclosure*, is realised in 3D landscape texts. These four types of compositional resources operate at a macro level and are present (to some degree) in every text. The compositional resources exist on a continuum: when maximally expressed in a text they contribute to the

viewer or users' clear understanding or interpretation of the text, when minimally expressed (intentionally or unintentionally) they may result in disconnected and fragmented understandings of a text. Compositional resources such as cohesion and coherence form part of the assessment criteria of the students' spatial model projects.

These four macro compositional resources are realised through various micro-compositional resources such as *emphasis*, *contrast* and *proximity*. While macro-compositional resources relate to the composition as a whole, micro-compositional resources are not necessarily present in every text or only present in a part of a text. Relationships between individual objects are described by the Gestalt psychologists (Wagemans et al., 2012, p. 1180) and have been used as 'design principles' in many design professions. These principles describe the potential characteristics of objects that cause them to be perceived in particular ways. *Proximity* is a resource that is based on the distance between objects and the assumption that objects that are closer

together may appear to be connected or related in some way. *Similarity* and *repetition* are compositional resources that allow objects with similar or repeated characteristics, such as shape or form, colour, texture, luminance or rhythm, to be grouped or connected. Similarity and repetition can be used to achieve *contrast* or *juxtaposition* if one or more objects are dissimilar or if for example, a pattern or rhythm is disrupted. Use of *foci*, *hierarchy* and *foregrounding* are micro-compositional resources that can be used to emphasise or de-emphasise different elements of a text. *Balance* can be considered as the relative distribution of elements within a frame or text. If most of the composition is clustered in one corner of the frame, the composition may appear to be unbalanced. *Information value* is a term used by Kress and van Leeuwen (2006, p. 196), particularly in 2D images, to describe how a user may evaluate the relative positions of elements in a composition in terms of left-right, top-bottom, centre-margin, foreground-background where the object on the left, at the top, in the centre or foreground may appear to be more significant.

Coherence

Coherence in this framework refers to the degree to which a text can be understood by its users. In landscape and architectural design terms this can be referred to as 'legibility'. Legibility is the clarity of a space, how it is 'read' by users or how easily its patterns and elements can be recognised, understood or navigated (Lynch, 1960, p. 3). In the way that written text may have a 'reading path', spatial texts can be read in terms of navigational paths, which could be achieved through the use of vectors, markers or landmarks (Lynch, 1960; Ravelli & McMurtrie, 2016, p. 109).

Saliency

Saliency is the broad term used in this framework to describe textual compositional resources that indicate relative significance, emphasis, value or foregrounding. Saliency or emphasis is the result of textual choices that draw the viewer or user’s attention to particular components in the composition that are intended to be significant or important. Analysing use of saliency can be asked through the questions ‘how does the user know what is important in this text?’ or ‘what attracts the users’ attention in this text?’. Interpretation of saliency is not universal: what may be significant for some users may not be the same for others (Bezemer & Kress, 2016, p. 78). Saliency can be achieved through the realisation of a range of micro-compositional resources such as *contrast, pattern, foci* and *foregrounding*; and through physical resources such as *size, texture, shape* and *colour* (Kress & van Leeuwen, 2006, p. 177; Ravelli & McMurtrie, 2016, p. 108). Table 3.5 provides some examples of textual resources that can be used to convey saliency.

Minimal saliency	Micro-compositional or physical resources	Maximal saliency
Small objects	<i>Contrast, size</i>	Large objects
Objects further from the viewer	<i>Foregrounding</i>	Objects closer to the viewer
Blurred objects	<i>Foci</i>	Sharp, defined objects
Dark, cool colours	<i>Contrast, colour</i>	Bright, warm colours
Uniform textures or rhythms	<i>Contrast, pattern, texture</i>	Discordant textures or rhythms

Table 3.5 Textual resources that realise saliency

Minimal cohesion	Micro-compositional or physical resources	Maximal cohesion
Objects are further apart	<i>Proximity</i>	Objects are close together
Objects are unevenly distributed	<i>Balance</i>	Objects are evenly distributed
Objects are not grouped, are disconnected or are not enclosed	<i>Framing</i>	Objects are grouped together, connected or enclosed
Objects are dissimilar e.g. shape or form	<i>Similarity, repetition</i>	Objects share similar characteristics
There is no / limited visual connection	<i>Views</i>	Objects maintain a visual connection

Table 3.6 Textual resources that realise cohesion

Cohesion

Cohesion is the degree to which elements of a composition fit or appear to fit together. In landscape design terms, cohesion is often referred to as unity. Kress and van Leeuwen (2006, p. 203) term this 'framing': how the compositional elements of a text may be connected, related or distinct. Minimal or absent use of framing devices may contribute to creating a disconnection (Kress & van Leeuwen, 2006, p. 177). In landscape architectural projects, different sites may be designed with a particular palette of materials, colours and forms, contributing to a collective identity of the particular landscape design. When analysing cohesion in texts one could ask 'how are elements connected or disconnected in this text?' In the students' 2D graphic narratives and 3D spatial models, cohesion can be achieved through micro-compositional resources such as *balance, proximity* or *similarity* and physical resources such as *shape, form, materials, colour, texture* and *views*. Table 3.6 shows how these micro-compositional resources may realise minimal or maximal cohesion.

Degree of enclosure

Perception of space enclosure is determined primarily by various configurations of ground, wall and sky planes (Ching, 2015, p. 19; Dee, 2013, p. 33). Stenglin's Binding continuum (2004, 2008) is based on the degree of enclosure of a space. A spatial text can be analysed in terms of textual arrangements, which have a direct impact on the interpersonal Binding meanings of the space. The *degree of enclosure* is the result of permutations of textual choices, variations in properties of planes: groundedness, height of wall planes, distance between wall planes, height of sky planes, permeability of planes, surface texture, colour and pattern.

Groundedness, is what O'Toole refers to as 'chthonicity' (1994, p. 102), a term for the degree to which a space is bound to the earth. In terms of textual choices, this can be achieved by lowering or raising the ground plane. Lowering a ground plane slightly may have the effect of creating a comforting, nest-like space (Image 3.7, a); however a deeply lowered ground plane may have the

reverse effect of feeling buried or trapped (Image 3.7, b). Raising a ground plane slightly, may provide better visibility and a feeling of liberation (Image 3.7, c); yet a ground plane that is significantly higher may create feelings of exposure and vulnerability (Image 3.7, d).

If the *height of wall planes* is adjusted, it may affect the degree of openness of a space. Even though there may be a physical barrier, if a person can see out into other spaces, it may make their space feel more spacious (Image 3.8, a). In landscape architecture the concept 'borrowed landscapes' makes use of this idea. The *distance between wall planes* can be adjusted to different effects. As wall planes move further apart the space may feel more open but is also dependent on use, crowdedness and types of social activity (see Image 3.8, b & c). An individual looking for a quiet place to study may feel more comfortable in a smaller space than a very large one.

Another textual choice that affects the space is the *elevation of sky planes* above the ground: lower sky

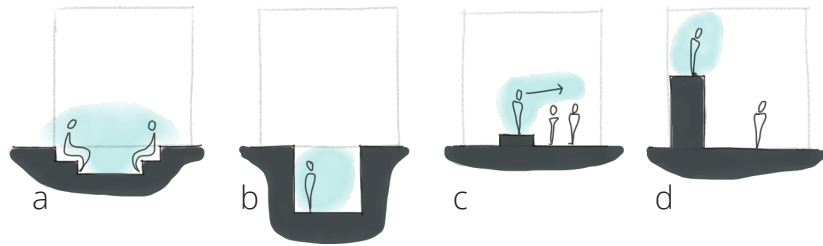


Image 3.7 Section drawing showing variations of groundedness (Ching, 2015)

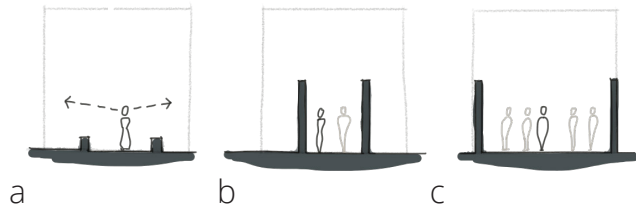


Image 3.8 Section drawing showing variations in height and distance between wall planes and crowdedness

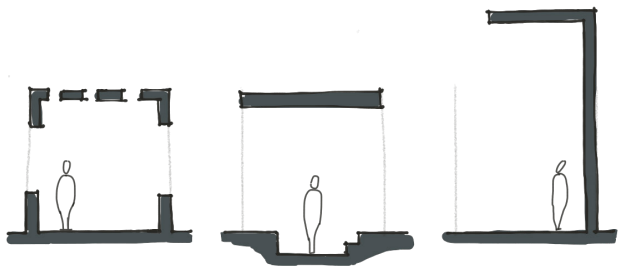


Image 3.9 Section drawing showing variations in sky planes

planes tend to make spaces feel smaller and higher sky planes tend to give spaces a sense of openness (see Image 3.9).

Permeability, texture and colour of surfaces are textual choices that influence the nature of a space. Permeable planes allow views out, reducing the sense of enclosure. The degree of enclosure can be related to the amount of light: very light spaces feel larger and more open, dark spaces feel smaller and contained. Texture and colour are two other textural choices that affect the light quality within spaces and can contribute to how a space may be experienced.

When analysing spatial texts, it is the combination of textual choices that determines the extent of enclosure. For example, although a low sky plane may cause a space to feel contained, low wall heights contribute to opening up the space resulting in a moderately Bound as opposed to strongly Bound space. In the framework, textual resources include compositional resources and physical resources. Table 3.7 summarises a range

of compositional textual choices that can be used to achieve varying degrees of enclosure. Types of physical resources are described in the following discussion.

3.5.3.2 Physical resources

Physical resources are textual resources that have material or physical presence, or can be experienced through the senses. Physical resources include: *elements of design*, the building blocks of texts; *materiality*; and particularly in 3D spaces, *actions*.

Elements of design

Elements of design is a term popularised by Ching (2015) to describe the hierarchy of building blocks of texts from the single point through to the organisation of spaces.

Point, line, plane and volume

A text can be thought of in terms of its basic elements: the *point, line, plane* and *volume* (Ching, 2015, p. 3).

Tends towards Bound	Textual resources	Tends towards Unbound
Sunken ground plane	<i>Groundedness</i>	Raised ground plane
High wall plane	<i>Wall plane height</i>	Low wall planes
Small distances	<i>Horizontal distance between wall planes</i>	Large distances
Low sky planes	<i>Height of sky plane above ground level</i>	High sky planes
Solid	<i>Permeability</i>	Permeable
Dark, heavy colours or textures	<i>Colour and texture</i>	Light colours or textures

Table 3.7 Textual resources that realise Bound or Unbound spaces

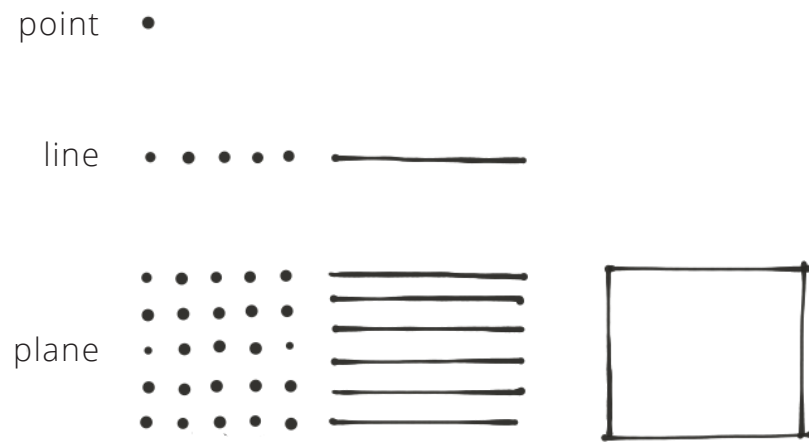


Image 3.10 The development of the elements of design: point, line and plane

Each element contributes to a dimension: a point can only indicate a position in space but it has no depth, width or length. Lines describe length in one dimension while planes exist in two dimensions. Combinations of ground, wall and sky planes define spaces or volumes and could be represented in two or three dimensions. These basic elements are not discrete: a series of points in a row begin to form a line (albeit a broken one); and a series of parallel lines begin to form the fabric of a plane (Ching, 2015, p. 14). Even a solid plane can be thought of as a grid of numerous points that are so close together they appear as a solid plane. This relationship between these three elements is illustrated in Image 3.10. Connected to these ideas is Kress and van Leeuwen's (2006) concept of a *vector*. Vectors are explicit or implicit textual processes or 'tensions' that connect two or more participants or objects in a text (Kress & van Leeuwen, 2006, p. 49).

Shape or form

Textual choices include (but are not limited to): two dimensional primary *shapes* such as circles, squares,

triangles, rectangles and ovals; three dimensional primary forms such as spheres, cylinders, cones, pyramids and cubes; subtractive or additive forms; and irregular or organic forms. Shapes are linked to ideational and interpersonal meanings. As an example, rectangles and squares are rarely found in nature and may be associated with human-made objects. Circles may evoke meanings of continuity or perfection. Depending on their use, triangles can be used to create a sense of imbalance (Ching, 2015). Organic and irregular *forms* can often be found in nature and as such may carry these associations in terms of ideational meanings (Ching, 2015). The form of spaces can take cues from existing forms on site or may be based on geometry, metaphor, symbolism, abstraction, archetypes, vernacular and historic paradigms (Dee, 2013, p. 37).

These elements of design described so far are applicable to both 2D and 3D visual texts. The following elements of design relate to 3D spaces.

Types of spaces

Dee categorises the 'fabric' of landscape into spaces and specialised spaces such as *paths, nodes, edges, foci* and *thresholds* (2013). Paths are often linear spaces for movement (Dee, 2013, p. 81). Paths may be formalised by surfaces but also include informal, worn tracks such as 'desire lines' (Dee, 2013, p. 84). Paths may include a symbolic arrival point or destination. Paths often occur as networks of systems with hierarchies of paths depending on frequency of use and volume of traffic (Dee, 2013, p. 86). A node is a point at which two paths intersect. The form of a path may suggest something about its use: a straight path has connotations of directness and speed; meandering paths provide a slower, more indirect approach (Dee, 2013, p. 90). Edges and thresholds are transitional spaces or interlocking spaces (Dee, 2013, p. 115). Edges and thresholds are in between spaces that link larger spaces or mark an entrance or gateway (Dee, 2013, p. 169). Edges and thresholds provide opportunities for users to rest, wait, meet and also to ease users through changes in spaces (Dee, 2013, p. 170). Edges can also be places of security

and refuge (Dee, 2013, p. 18). Foci are spaces that have social significance, or are destinations or places for gathering (Dee, 2013, p. 144). Focal spaces can be created through contrast, vertical forms, centrality or isolation of forms (Dee, 2013, p. 152).

Organisation of spaces

Spaces can be defined by the degree to which they relate to other spaces: a space within a space, interlocking spaces, adjacent spaces, spaces linked by a common space (Ching, 2015). Connections and interdependence between spaces or units is described by Ravelli and McMurties as 'spatiotaxis' (2016, p. 134). If two spaces are dependent on each other and there is only one path with no other choices, for example, the path terminates in a dead end, or the point of arrival and departure are the same, or there is a circular route, the space can be described as in 'hypotaxis' (Ravelli & McMurtrie, 2016, p. 135). If pathways are independent and there are multiple arrival points and users don't have to backtrack this is considered to be an example of 'parataxis' (Ravelli & McMurtrie, 2016, p. 135).

Figure-ground

The *figure-ground* is a particular way of thinking about the subsequent spaces that are defined by configurations of planes in terms of flat planes and relief or solids and voids. The figure-ground drawing is a plan view of a space where the elements defining the space are shown as black and the volumes of space are shown in white (for example, see Image 3.11). This enables the space to be 'read', for the form of the space itself to be considered, as opposed to the planes themselves to be thought of as the positive form (Ching, 2015, p. 103). Because the figure-ground is a plan view it prioritises the ground plane: white spaces are accessible and black figures are inaccessible. Figure-ground is the relationship of an object or figure and its surrounding space or ground (A. W. White, 2011, p. 85).

Materiality

Materiality is used in this framework to include the material or physical and sensory aspects of texts (Flewitt et al., 2014, p. 48; Salaam, 2017, p. 20). In order for a text

to exist, it must be made from material substances and crafted using various techniques and methods. Users will experience these texts through sensory information such as the haptic, tactile, auditory, visual, olfactory and thermoreception (Dee, 2013; Scollon & Scollon, 2003).

This framework identifies the use of materiality in the 2D graphic narratives as well as the 3D spatial models. The latter may also be analysed in terms of the imagined or projected materiality of the models-as-projections.

In landscape architecture, materiality includes a range of materials such as plants, brick, stone, concrete, steel, timber, glass and water. Use of different types of plants and different construction techniques may change the texture and experience of the same material in different contexts. While landscape architecture is accessed primarily through visual and tactile means, scent and sound may also play a role in the materiality or experience of a landscape text. For example, the use of water can also have an impact on the materiality of a space, imagine a roaring waterfall or a gentle bubbling

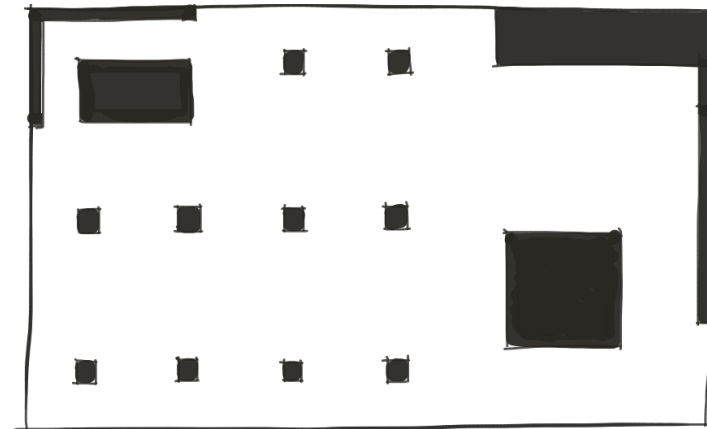


Image 3.11 Figure-ground: the relationship between figure or mass or form (shown in black) and ground or space (shown in white)



Image 3.12 An example of a ‘borrowed landscape’: the view of Signal Hill from within Green Point Urban Park

stream or still reflective ponds. Views could form part of the experience or materiality of a text, for example, Signal Hill is a ‘borrowed view’ or dominant feature that can be seen from Green Point Urban Park but is not within the boundaries of the text itself (see Image 3.12). The physical resources described so far relate only to a static text. Landscape texts in particular, are not static but include what Bruns et al. (2017) term ‘actions’: dynamic resources such as time, users and movement and natural systems or processes.

Actions

The potential textual meanings discussed so far relate to the text as though it was a snapshot, frozen in time. Bruns et al. (2017, p. 15) define ‘landscape’ in terms of three elements or aspects: image, the perception or symbolism of a landscape; structure, the fabric and material of a landscape; and action, the processes, activities and external forces occurring in the landscape. Although the authors separate the actions from the structure of the landscape, in this framework

I incorporate their category of 'action' within the textual metafunction. "Space considered in isolation is an empty abstraction" (Lefebvre, 1991, p. 12) therefore this framework also needs to consider how *users and movement, time* and *natural systems* affect the text.

Users and movement

Ravelli and McMurtrie argue that spatial texts are not fully realised without users: "an analysis of what people can do in a spatial text brings to light the fact that *users* are a part of the representational content of the spatial text" (2016, p. 44). Additionally, users of spatial texts are not inert observers: they contribute to the materiality of the text itself (Lynch, 1960, p. 2). The degree of crowdedness of a text also affects textual meanings of a space. *Movement* of users may also include kinesthetics or embodiment: "Gesture and movement are heavily implicated in the production of space, just as they are clearly shaped by the material and social organisation of space" (Jaworski & Thurlow, 2014, p. 366).

Unlike two dimensional texts, three dimensional texts may be experienced by movement through the text. Because people move from one space to another, one could consider the sequence of spaces (Dee, 2013, p. 50) including potential points of interest, entry and departure (Dee, 2013, p. 84). Ravelli and McMurtrie have also expanded on the notion of semantic connection, using Halliday and Matthiessen's complementary systems of 'projection' and 'expansion' (2016, p. 137). When moving from one space to another, the first space projects to the second and this can either be seen as 'difference' (as in nothing in common) or 'extension' (as in the same) (Ravelli & McMurtrie, 2016, p. 137). Ravelli and McMurtrie suggest that navigation paths can be realised by vectors, pointing users to the way in which they should be moving (2016, p. 108). The textual choices may also contribute to the speed or pace possible in the space, as influenced by the directness or indirectness of a movement route (Dee, 2013, p. 90), as well as the ease of movement which could be affected by texture or slope (Dee, 2013, p. 97). Movement or motion is not only related to human users, it could also be analysed in

terms of non-human movement, for example the flight of birds, or inorganic elements such as the movement of wind, water and even fire.

Time

Michael Laurie described *time* as the fourth dimension in landscape architecture (Raxworthy, 2013, p. 18). One of the biggest distinctions between landscape architecture and architecture, is that landscape architecture tends to be materially dynamic and changes over time: plants mature and change seasonally in terms of colour and form. Although time may be perceived by some as linear, there are also cyclical patterns of time such as day, night and seasons. When analysing a landscape spatial text, one could pose the question 'how is this text realised in other moments in time?'

Natural systems or processes

Landscape architecture is grounded in an understanding of the role of a site within larger *natural systems or processes* such as geological change, hydrology, climate, ecology and biodiversity. Scollon and Scollon (2003)

summarise several examples of processes in space: motion, traces, sense of gravity, rising heat and growth of plants (p. 88). In landscape architecture it is also possible to analyse a text in terms of larger natural systems or processes such as seasonal change, hydrological cycles, climate and energy or nutrient cycles. Landscape design also has to consider the changing microclimate: the patterns of sun and shade are different in the morning, midday and afternoon; the sun is stronger in summer and weaker in winter; and prevailing winds may change throughout the year. Natural processes also have to be considered, for example, drainage and runoff of water during a storm, or for the movement of biodiversity.

3.6 Chapter summary

This chapter discussed the methodological approach to this research data. Following the nature of the research questions and literature review, the research design takes a situated multimodal social semiotic and ethnographic approach to a case study. The use of a multimodal social semiotic approach provides

important opportunities to forge different orders of visibility of diverse students' resources in the landscape architectural classroom. Where the dominant landscape architectural discourse may place emphasis on textual meanings, a multimodal social semiotic approach also foregrounds ideational and interpersonal meanings.

A significant portion of this chapter was dedicated to describing the framework for analysis of students' 2D graphic narratives and 3D spatial models. This framework draws from multimodal social semiotics, including Halliday's (1978) Systemic Functional Linguistics, Kress and van Leeuwen's (2006) grammar of visual design, Ravelli and McMurtrie's (2016) spatial discourse analysis and Stenglin's (2004) grammar of three dimensional space and her (2008) Binding continuum. The framework also blends architectural (Ching, 2015) and landscape architectural (Dee, 2013) theories of space into this multimodal social semiotic approach.

The analytical framework developed here includes categories of *meaning potentials* of visual and spatial

modes in landscape architecture. The phrase meaning potentials signals how and what visual and spatial landscape texts *could* mean. In the following three chapters I apply the framework to the analysis of students' 2D and 3D texts, 'fixings' in the flow of semiosis. The framework helps recognise and identify the types of resources available and the meanings students have chosen to express in their texts, thus addressing the first research question 'what resources do diverse students bring to their learning experiences in the context of landscape architectural education?' In subsequent chapters, key terms from the framework are italicised, bringing together landscape architectural practices with the activities of the students. By using the framework to analyse subsequent texts within a student's meaning-making trajectory, this research examines the second research question 'how do students mobilise these resources to move between spatial, visual and verbal modes in a (landscape architectural) design trajectory?' The 'fixings' of texts also enable processes of resemiotisation of resources and meanings to be traced from one strip of a design trajectory to another. While

this analytical framework aims to identify the students' semiotic resources in 2D and 3D texts in landscape architectural education, it is used as a springboard into identifying other resources that students may have drawn from at the time of meaning-making. Apart from the semiotic resources outlined in this framework, students may also draw on precedent, experiential, social, interactive, pedagogic and linguistic resources in order to realise their texts. While the latter resources are not always realised or expressed in a text, the students' presentations of their texts can be analysed to identify some of these resources that have helped to shape their meaning-making processes. The following chapter introduces the spatial model project and conducts an in-depth analysis of one student, Malibongwe's, 2D and 3D texts, in order to identify the types of resources that he draws on in his design trajectory.

CHAPTER 4

Constructing different orders of visibility of resources in the classroom

4.0 Chapter overview

This chapter addresses the first research question: ‘what resources do diverse students bring to their learning experiences in the context of landscape architectural education?’ This is primarily a question of ‘recognition’ (Archer & Newfield, 2014; Bezemer & Kress, 2016). In light of this notion of recognition, this chapter finds resonance with Kerfoot and Hyltenstam’s (2017) phrasing of recognition as “construct[ing] different orders of visibility” (p. 8). The first section of this chapter is concerned with designing a classroom environment and project brief that is conducive to changing the orders of visibility of diverse students’ resources. In Sections 2 and 3, the analytical framework developed in Chapter 3 is used to engage in an in-depth analysis of spatial model project of one student, Malibongwe, as a case study for exploring interest, resources, contexts and experiences, and how these shape his 2D and 3D texts. The multimodal social semiotic approach to this analysis chapter contributes to foregrounding and making visible the knowledge and resources Malibongwe brings

to his design trajectory. This realisation of resources is recognised as transformations of new meanings, which can contribute to the production of knowledge. The chapter shows how Malibongwe's transformation of resources exceeds expectations and results in a 'Kressian moment' (Newfield, 2013). This moment reflects the potential of multimodal pedagogies to recognise diverse resources and provide students with an opportunity to make a connection between their everyday experiences and the landscape architectural classroom.

4.1 A 'generosity of view': designing the project brief

In order to enable different orders of visibility of the resources students bring into their learning environment, the project brief (see Appendices A and C) and class activities were designed with the intention to widen the possible range of resources that students could draw on. The brief comprises two parts: the first part prompts students to choose a narrative and to illustrate it visually;

the second part requires students to represent their narrative abstractly in a three dimensional model. The project brief, tacitly and explicitly, conveys dominant landscape architectural practices. For example, the model brief previously included restrictions with regard to size, colour and materials suggesting those that may be typical in model-building. For Kress, recognition "demands both intense attention and generosity of view" (2014a, p. 151). This idea of 'generosity', is not one of benevolence, or being an indispensable saviour to 'right wrongs' (de Souza, 2017; Spivak, 2004). In the context of landscape and architecture a 'generosity' of space implies an abundance or freedom of use (Carta, 2017). The 'generosity of view' of this studio in adapting the project brief, draws from this architectural definition in terms of removing restrictions and encouraging access to, and use of, a wider variety of resources. The description of the project brief begins with an understanding of the role of narrative in the landscape design process.

4.1.1 Narrative as prompt in the landscape design trajectory

Landscape architecture has a long-established relationship with the use of narrative in the design process. Potteiger and Purinton (1998, p. ix) show that “narrative is a very fundamental way people shape and make sense of experience and landscapes”. Narratives also have the potential to link intangible memories and experiences to physical spaces (Potteiger & Purinton, 1998; G. Young, 2012, p. 196). Narrative is a carefully considered starting point for the spatial model project. Firstly, the narrative is the prompt for this project's design; secondly, narrative is used as a guiding theme (see 3.5.1.2 in the framework) to direct choices made during the design process; thirdly, it is assumed that narrative is a familiar genre through which students can explore the possibly unfamiliar form of three dimensional spatial models; and lastly, narrative could play an important role in connecting the landscape classroom with the context of students' everyday lives.

Beginning with a respect for ordinary lived experience, the focus of narrative inquiry is not only a valorizing of individual's experience but also an exploration of the social, cultural and institutional narratives within which individual's experiences were constituted, shaped, expressed, and enacted - but in a way that begins and ends that inquiry in the storied lives of the people involved. (Clandinin, 2007, p. 42)

These four aspects of narrative are discussed in more detail below.

Students are required to select a narrative that could be the prompt for the types of meanings carried through into their models. According to Ching (2015, p. Introduction, para. 2) “the initial phase of any design process is the recognition of a problematic condition and the decision to find a solution to it.” The intention of the spatial model project is an exploration of how space can be manipulated to convey meaning (to a user) through a spatial experience. The students' narrative is the ‘problematic condition’ and their work is assessed

according to how the projected spatial experience of their model is related to their initial narrative: “the nature of a solution is inexorably related to how a problem is perceived, defined and articulated” (Ching, 2015, p. Introduction, para. 2). The assessment criteria are discussed in more detail at the end of this section.

Throughout the project, the narrative takes the role of a *guiding theme* that assists students in making decisions about what resources to select. Landscape architectural designers often make use of a guiding theme during the design process. As discussed in the analytical framework in Chapter 3, a guiding theme is described as an ‘inspiring direction’ (van Dooren et al., 2013, p. 58) to the design process. Guiding themes provide coherence in terms of an organising principle or pattern that gives the design identity. During the process of design, there are many possibilities or directions from which to choose: the guiding theme assists the designer to make selections from a range of design possibilities (van Dooren et al., 2013, p. 62). A guiding theme may also vary during the design process. It may initially manifest as an abstract

idea and later be realised materially, but it could also begin in material form and resolve into abstract or conceptual aspects of the design (van Dooren et al., 2013, p. 63). Because a guiding theme may take a range of different forms and modes, it can be a catalyst in the process of resemiotisation. Design students should have opportunities for exposure to, and experience in using guiding themes in the design process (van Dooren et al., 2013, p. 63). Alon-Mozes (2006, p. 36) found that use of narrative in design studios assists students to engage with the design process, as opposed to only engaging with the design product.

Narrative provides students with an opportunity to access the domain of model-building through a more familiar form. Students are not required to design a three-dimensional model straight away. The first brief (see Appendix A) requires students to choose a narrative that is meaningful to them and to illustrate this in two dimensions as a graphic narrative on an A3 poster using any medium or material.

The instruction to students is first to choose a narrative that is meaningful to them. Although students are aware that they would later have to build a spatial model, they can choose a story based on their own interests without needing to 'fit' it to a model or prompt. The second step, of illustrating their story in two dimensions, encourages students to represent the story in familiar semiotic and material means, and then serves as a prompt to consider other modes of representation.

Students present their graphic narrative to small groups. This provides them with an opportunity to express their interest and choice of resources through more familiar modes such as verbal presentations as well as a visual mode of their choice, for example, pencil drawing or collage. As shown by Newfield (2013, 2014) and Stein (2008), the process of modal changes in meaning-making trajectories can improve student access and agency in educational contexts. The diversity of narratives also offers many ways in which these could be resemiotised spatially: "stories can plot into lines, create hierarchies, unite beginnings and ends to form

circles, or tie knots and design labyrinths" (Potteiger & Purinton, 1998, p. 7). A landscape space is more than a backdrop to a narrative but "is itself a changing, eventful figure and process that engenders stories" (Potteiger & Purinton, 1998, p. 6) and continues to be mediated and sometimes transformed by the users of the space.

Finally, the use of narrative increases the range of diverse semiotic, experiential and social resources students could bring into their learning environment. Other design projects may involve a top-down brief that may privilege some students and marginalise others. By selecting their own meaningful narrative, students explore model-building through familiar perspectives. This places the focus on the student's agency and diverse resources within their own learning trajectories. This is particularly important for first year students who are negotiating their own position in relation to landscape architecture.

A multimodal approach foregrounds the principle of design in the making and production of meaning rather

than the acquisition of received knowledge. The notion of 'design' recognises the large number and proliferation of resources for meaning-making, and that meaning-making is about choosing and assembling resources according to individual desire and ideological position as well as perceptions of audience and context. (Archer & Newfield, 2014, p. 4)

In summary, the use of narrative is particularly beneficial to the project: it connects people and meanings to space; it can be used as a guiding theme for landscape design; and it can provide a familiar context for students learning to design landscape spaces.

Overview of students' narratives

The students' narratives for this project were inspired or prompted by their own personal experiences, movies, stories, music and news or real-life events. The students' narratives also originated from a range of diverse contexts. For instance, Elethu and Nontobeko's narratives take place in a domestic setting; Zimkhitha

and Asanda's narratives make direct connections to rural homesteads in the Eastern Cape; Nelisiwe's narrative is based on the movie "Hear me move" which is located in Sbujwa dance culture. The underlying themes of students' narratives can broadly be grouped into three categories relating to inward self-discovery, faith or perseverance, and outward-looking relations.

Narratives that center around self-discovery are characterised by personal insights or inner change. Darryl, for example, makes a connection to the "Toy Story" movies, particularly the third film in the series that addresses coming to terms with growing up. Cebisa's narrative emerged from her own awareness of how fear may have restricted what she is capable of achieving. Kim found that she could relate to the movie "Paper Towns" where the main character leaves her home to start a new life and relishes in her freedom and new possibilities. "I always wanted to escape from my world, from my life and just start somewhere else, somewhere new as a new person" (Graphic narrative presentation, Kim, 24 July 2017). Another example of inner reflection is

Teboho's personal narrative that abstractly documents his own changing perceptions of, and transition into, landscape architecture. Both Fezeka and Trent base their narratives on personal experiences: Fezeka chronicles her decision to move from the hospitality industry to landscape architecture, while Trent reflects on how he comes to terms with a failed relationship.

Four students' narratives were anchored to a sense of faith or spirituality. Nonthobeko's narrative, based on the movie "War Room", and Thobeka's personal narrative, both centre on practices of faith and prayer to withstand challenging moments. Vusi's and Wandile's narratives allude to a broader sense of faith that seeks or gives meaning to life (Fowler, 1981). Vusi's narrative draws from Jah Sun and Peetah Morgan's "Heart like a Lion" which relates to Bob Marley and the values by which he lived his life. Wandile's narrative takes inspiration from the song "Glory" by Common and John Legend. Wandile's graphic narrative includes images such as a mountain and the sun that, for him, symbolise overcoming intolerance and embracing equality.

Connected to the themes of faith and perseverance, three students presented a 'rags to riches' narrative. Mbali chose the song "Mama I Made It" by South African recording artist, Cassper Nyovest. In the song he recounts "the challenges that [he] has to go through and then at the end, he made it, like, when he has to move from his home to go to Johannesburg and chase his dream" (Graphic narrative presentation, Mbali, 24 July 2017). Mbali identifies similar themes in her own life where circumstances resulted in her deregistering from her studies and moving to Cape Town. Esihle's narrative took inspiration from the life of actor and producer Tyler Perry and how, after escaping an abusive father and sleeping on the streets, he became wealthy and successful. Mbulelo's narrative recounts his own personal story of his experience of life in an informal settlement. A number of students, including Khwezi, Nelisiwe, Cebisa, Olwethu and Esihle, also extract themes from their narratives that relate to overcoming challenges or obstacles.

The third thematic grouping of student narratives centers around interconnections and relationships. In contrast to the narratives themed under self-discovery that focused on inner-reflection or inward change, this third group of narratives are defined by an outward engagement with other people or the environment. Nadine, Calvin and Rayyan's narratives explore how people relate to the environment. Through his narrative, Calvin questions wasteful practices and their destructive effects on natural environments. Rayyan's narrative was similarly prompted by an iceberg that had broken off from Antarctica, as reported in the news at the time. Xola and Elethu's narratives include a primary character who is betrayed by a person who is close to them, and how these relationships are restored through trust and forgiveness. Malibongwe, Khanyiswa and Nathi's narratives share common themes around equality and prejudices. Themba's narrative, inspired by Michael Jackson's "Man in the Mirror", similarly also draws out themes around concern and care for others. These student-selected narratives were taken forward into the model-building portion of the spatial model project.

4.1.2 Widening the range of resources: adaptations to the project brief

The model-building project has been a part of the first year curriculum for a number of years, but some modifications have been introduced in an attempt to create a multimodal pedagogy for diversity. Landscape architects design in three-dimensions but often represent these through two-dimensional drawings. Model-building is a scaffolding tool that can assist students in this process of learning to design in three-dimensions. Only towards the end of the project do the students represent their models in two-dimensional plans and sections. In previous years, the brief was more restrictive, for example the scale for the model was specified and models could only be constructed from brown, grey or white cardboard, colour to be avoided. It is common-practice in architecture and landscape architecture to build spatial models using grey, white or timber-coloured materials such as cardboard, foam board and balsa. Part of the justification for this neutral colour palette is that light and shadow may be more

easily discerned on neutral materials and may not distract the viewer from the forms and spaces that are being shown through the model. Bright colours also tend to be viewed as markers of salience, signaling that the coloured object is important.

When designing the project for this research study, the brief was adapted in several ways to provide more opportunities for students to draw on diverse resources. Firstly, as previously discussed, the project brief is based on narratives that have been selected by each student. The use of narrative widens the range of personal, local and diverse resources that can be brought into the learning environment. Narratives allow for engagement of issues through a context that may be specific to each student.

Secondly, the project brief has been adapted to expand the range of *material resources* with which students can use to make their models. Although size restrictions remain, students are encouraged to make use of any material, colour or texture they choose to build their

model. Students are also able to select the scale at which they construct their model. These changes were aimed at ensuring students could bring familiar semiotic practices into the project and also be able to make choices from a wider range of materials and techniques. While cardboard remains a popular choice, it has been used in a variety of colours and textures. Other materials that may not have previously been accepted as appropriate model-building materials in the first year subject, but have been used in this research study, include tinfoil, string, cotton wool, pasta, dessicated coconut, sand, paint, plasticine, newspaper, scourer, packaging foam, tinsel, glitter, fabric and wire. Some of these materials were provided by the department and some of the materials were brought by students. This increase in range of materials reflects the spectrum of materiality in space as a result of the dimensions, relationships, surface texture, colour and permeability of ground, wall and sky planes (Stenglin, 2004, 2008). Colour and texture are also significant textual resources in landscape architectural designs. It is therefore beneficial that students have the opportunity to interrogate the impact

of colour, texture and light in three dimensional spaces. Julie Dufour Wiese and Malene Abildgaard are Danish architects who specialise in teaching spatial design to children and young people through the use of models. In their workshops, students are encouraged to make use of a wide range of materials including common materials such as masking tape (Abildgaard & Dufour, 2017). The project brief has therefore been updated to reflect a wider range of semiotic resources for meaning-making in three-dimensional models.

Thirdly, a number of activities have been introduced to enable alternative means of mediating the project's dominant mode of model-building. The activities include a 1:1 chalk drawing, video, mind map, comment sheets and peer review discussions (see Appendices A - H). Fourthly, the studio has been supplemented by design theory classes where students are exposed to local and international precedent, and design theory such as Stenglin's (2008) notion of *Binding*, a multimodal resource for analysing spaces. The concept of binding provides students with a metalanguage for analysing

and describing space. These changes to the project brief promote the inclusion of a wider range of resources that students can choose to bring or use in their spatial model project.

4.1.3 Assessment criteria

The assessment criteria for the spatial model were given to students on a handout (see Appendix D) and discussed at the same time as the initial model brief. This research project has attempted to avoid traditional views of meaning-making in terms of (il) literacy or (in)competence in favour of a multimodal social semiotic approach that recognises the agency and 'resourcefulness' (Bezemer & Kress, 2016; Mavers, 2007) of meaning-makers. The assessment criteria are given upfront to guide students in terms of the practices and values in landscape architectural education without being too prescriptive in terms of use of dominant conventions or "well-acknowledged resources" (Mavers, 2007, p. 157). The following outline and discussion of the assessment criteria for the spatial model project

is particularly relevant in understanding Malibongwe's 'resourcefulness' in his meaning-making trajectory. The criteria are not listed in any particular order of relevance or importance.

Criterion 1: The progress models display a journey of learning, interest, investigation, questioning and exploring alternatives

This criterion encourages students to engage in iterative design processes. In the design theory classes, students read and discuss van Dooren et al's (2013) article that outlines five generic elements of the design process. One of these elements is experimentation. The nature of the spatial model project provides students with low-stakes opportunities to experiment and take risks, but also to engage with how to work with alternatives in the design process. This criterion also encourages students to develop a narrative in order to stimulate a project trajectory based on topics or issues that interest them.

Criterion 2: The final model size is between 100 X 100 X 100mm and 300 X 300 X 300mm and includes at least one ground, wall or sky plane.

In terms of physical model-building, there are no restrictions in terms of materials, colours, textures, shapes or forms. The size requirement for the models is one of practicality. The requirement to include at least one ground, wall or sky plane is to ensure that students develop a space defined by planes in three dimensions, as opposed to, for example, making paving patterns on the ground plane only. This criterion is inclusive of students' creative use and interpretation of sky and wall planes. A student could argue, for example, that a tree canopy is a sky plane, or that a row of columns can be considered a permeable wall plane. The use of this particular terminology forges a link between the metalanguage developed in the design theory classes and the practice of model-building. The comment sheets and crit discussions may ask students to identify these planes in their model, encouraging students to make use of this abstraction in describing their designs.

Criterion 3: *The final model is a unified and multifunctional composition that demonstrates a relationship between the forms and subsequent spaces that have been designed, and the nature of the [narrative].*

There are three significant aspects to this criterion. Firstly, a model that is unified should tend towards maximal *cohesion* (see 3.5.3.1): the elements within the model should appear to be part of the same installation. High levels of cohesion do not preclude degrees of *coherence*. For example, if a student's narrative is about confusion, their model could make use of minimal coherence to realise fragmentation or disorientation, but the spaces and forms within the model should form one cohesive composition. Secondly, the forms and spaces within the model should display a degree of multifunctionality. This quality of space is highly valued within landscape architecture, in terms of creating complexity through layers of meanings, but also a promotion of efficiency of material use. Thirdly, the composition must denote meanings of the narrative through the forms and spaces of the composition. This criterion connects to

the following criterion in its preference for abstracted forms and spaces.

Criterion 4: *The model represents an (interactive) spatial experience and avoids overuse of literal representations and 2D symbols. The spatial experience is more than just a single sculptural element.*

This criterion focuses around learning to make meaning in three dimensional space, with a focus on the spatial experience of an imagined user. This criterion shepherds students towards abstractions. A typical example is that a student may intend to convey 'love' in their model and constructs this using 2D symbols such as the heart shape or the colour red. This assessment criterion necessitates that students have to engage abstractly with their concept and express it in terms of the way a user moves through or interacts with the spaces and forms of the model. Using the example of 'love', this could be conveyed through a space that feels secure or warm or generous. The last sentence of the criterion re-emphasises the need to design an installation that users

can experience in three dimensions, or walk *through*, as opposed to a sculpture or statue that users can only view or walk *around*.

Criterion 5: *The models show understanding, exploration and application of concepts of elements and principles of design.*

During the spatial model project, students attend design theory classes where they are exposed to design concepts and principles such as Stenglin's (2008) Binding continuum but also compositional strategies such as symmetry and balance. This criterion requires students to show that they are making a connection between the design theory and their design processes. Assessing this criterion is often based on the way in which students present their work, particularly in terms of the terminology and metalanguage that they draw on.

Criterion 6: *The model is sturdy and has been constructed carefully and neatly with attention to detail.*

This criterion requires students to engage in the affordances of different materials and model-building techniques to achieve particular forms. This criterion also emphasises values in landscape architecture regarding attention to detail, precision, neatness and how to show care in their work.

Having described the development of the spatial model project brief, and particular decisions made to widen the range of resources, this chapter moves into an investigation of the design trajectory of one particular student, Malibongwe.

4.2 Bringing diverse resources into the landscape classroom: an interpretation of Malibongwe's 2D graphic narrative

This section engages in a detailed analysis of Malibongwe's graphic narrative and verbal (and gestural) presentation in response to the first research question 'what resources do diverse students bring to

their learning experiences in the context of landscape architectural education?’ This section comprises two parts: the first, unpacks the verbal presentation and graphic narrative; and the second, provides an in-depth analysis of the graphic narrative.

4.2.1 Interest, resources and difference in Malibongwe’s graphic narrative and presentation

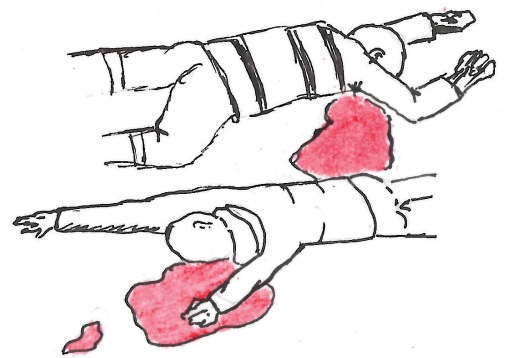
This subsection is an interpretive description of Malibongwe’s graphic narrative and verbal presentation of his chosen narrative, namely the Marikana⁹ massacre. This interpretation draws attention to three aspects of Malibongwe’s multimodal ensemble: his *interest* in meaning-making; making visible the *resources* he draws on; and recognising the point of *difference* he brings to the landscape architectural classroom. Each of these aspects is discussed throughout the interpretive description of Malibongwe’s graphic narrative, and summarised again at the end of this section.

Image 4.1 shows a scan of Malibongwe’s graphic narrative. As he presents, Malibongwe holds up his poster and introduces his narrative as shown in Image 4.2. As Malibongwe begins explaining his narrative, he gestures to the top left-hand part of the poster. Malibongwe is unhurried and speaks thoughtfully and sincerely.

Uh my poster is about the Marikana massacre. I think about the 7th or 8th of August 2012, there were Lonmin miners [...] decided to march due to their wages. [...] If you compare their wages with the job they are doing, it’s not [*he pauses*] something is not right. (Graphic narrative presentation, Malibongwe, 24 July 2017)

Malibongwe identifies that the protagonists in his narrative are the Lonmin mine workers. He positions himself in support of the miners’ wage request, that the miners deserve to be paid more in compensation for their working conditions. This statement “something is not right” is an underlying theme of injustice and reflects his interest in this narrative. Malibongwe then gestures

⁹ Marikana is a platinum mine that is owned by Lonmin and is located 120km north-west of Johannesburg. On the 10th August 2012, 3000 mine workers began a strike for improved wages. The strike included several days of tension and violent clashes between miners, security guards and South African police, and ended on 16 August when police opened fire on a group of miners gathered at a rocky outcrop, killing 34 men and wounding 78.



WHY KILL OUR BROTHERS?



Image 4.2 Redrawn screenshot of Malibongwe holding up his graphic narrative while he presents. He holds the poster in his left hand and uses his right hand to gesture or point to the different parts of his graphic narrative.

to the bottom left-hand box of his poster and continues with his narrative.

They striked and they were led [*he points to the person in the green blanket in the top left-hand box*] by the guy called Mambush, Mcineni Noki he was the strike leader. But during the march the authorities did not want to meet with them so they sent the police instead. So the police were the shield [*gestures shield with his hand*] now between the employer and the employee. So they can't negotiate with their employer. [*He gestures to the middle box.*] On the 12th of August 2012, [...] the miners were willing to put down their weapons and negotiate with their employers or the [...] unions, [...] So [NUM] decided not to participate in this strike saying that they were doing operating so they don't want to engage with them. The police sent [...] General Pembe to negotiate with them to put down their weapons and lead them to talk to their employers so that they can solve whatever issue they have with their employer, maybe they would get the 12.5 that they are looking for. (Graphic narrative presentation, Malibongwe, 24 July 2017)

Malibongwe demonstrates the resources he brings into the classroom in terms of knowledge and experience: he provides dates, names of role players and explains the sequence of events in the lead up to the tragedy. In his narrative, Malibongwe mentions that the miners were “willing to put down their weapons and negotiate” and explains three moments in his narrative when the mine workers were not given the opportunity to negotiate with the mine owners: “the authorities did not want to meet with them”, “NUM decided to not to participate”, and “they don’t want to engage with them”. This repetition is an example of salience, signalling to the viewer that this is a significant aspect of his interest and narrative. Malibongwe conveys his particular understanding of the role of the police, how they separated the mine workers from engaging with the mine owners, and employs a metaphor of the police as a “shield” between the miners and mine owners. This particular interest in, and spatial understanding of the role of the police, is evident throughout Malibongwe’s design trajectory. Malibongwe reaches the turning point and the beginning of the conflict in his narrative.

But suddenly he gets a call, no-one knows from who [...] then his state changed all of a sudden. Then he was to implement a stage where he wants to disarm and disperse the workers and then stun grenades were fired. Then police shot at the employees [*gestures to right-hand box*], which they did nothing to them. They shot and killed them. (Graphic narrative presentation, Malibongwe, 24 July 2017)

For a moment, the severity and trauma of this event is brought into the landscape classroom. In the aftermath of the tragedy, Malibongwe’s narrative describes confusion and again the lack of justice shown toward the miners.

Even today many of the miners were charged with [...] murder. Some were charged for disturbing the peace, but the police, none of them were charged for anything. So everything was pinned on the miners not the police. Even their supervisors, the minister, the generals, no-one wants to answer and no-one wants to answer what happened that day, who gave the go ahead. Like who

gave the go ahead and who must shoot. Usually, when there are strikes police usually use rubber bullets, but that day they used live ammunition to take out the miners. (Graphic narrative presentation, Malibongwe, 24 July 2017)

Malibongwe's narrative draws the viewer's attention to the senselessness of the event and lack of accountability of the police and mine owners in the face of the tragedy.

Here it is clear that meaning-making is motivated by the interest of the meaning-maker. This interest is shaped by the meaning-maker's history, experiences, social context and reflects what they feel most apt to represent in the moment (Kress, 2010). Malibongwe explains that "what happened in Marikana really troubles me a lot. So, like I think coming up with the way to show how I feel, like that's what motivated me to come to this stage" (Final presentation, Malibongwe, 30 August 2017). Malibongwe's use of the words 'troubles' and 'motivated' shows the extent to which his interest impacts his meaning-making process. During Malibongwe's Model

3 crit there is a discussion (see Appendix J) about his personal connection to his narrative. Although he does not know anyone involved in the Marikana massacre, he says he does know people who work in the mines and is concerned that "maybe someday it can happen to them" (Model 3 crit, Malibongwe, 23 August 2017). He also reflects his concern about inequality.

What motivated the story is that, you see from my own perspective is that the people who are oppressed are not getting enough [...] they are doing all the work, but they are not getting paid enough for the work that they do. (Model 2 crit, Malibongwe, 16 August 2017)

Although it does not appear Malibongwe or those around him were directly involved in the Marikana massacre, it made such an impact that he is able to empathise "from my own perspective". The strength of Malibongwe's interest in his choice of narrative may appear to be directly proportional to the degree of commitment and involvement he shows throughout his model-building trajectory.

Malibongwe's narrative reveals his 'take' on the world, what he finds criterial (Kress, 2010, p. 76). Malibongwe could have chosen any narrative, but he explains the particular interest that has prompted his choice of narrative: "what happened in Marikana really troubles me a lot" (Final presentation, Malibongwe, 30 August 2017). Malibongwe's interest is also shaped by his past experiences and social context. His interest guides his choices in assembling resources to convey an ideological position through the physical making of meaning (Archer & Newfield, 2014, p. 4). Malibongwe's concern and positionality is also evident in the way in which he mediates his presentation: he speaks softly and often pauses to consider his next words. The impression is that he is deeply disquieted by the events that unfolded, and thoughtfully and carefully explains the injustices faced by the miners. In terms of drawing on interpersonal resources such as affect, Malibongwe's delivery is not exuberant, and does not intend to rouse viewers to action. Malibongwe could have used the phrase 'massacre' which invokes imagery of a brutal and violent tragedy. Instead of imbuing his

viewers with unbridled emotion, his calm, matter-of-fact presentation of evidence is not trite, but conveys an uneasiness within viewers as he presents the injustices of the event. There is also a level of care and engagement shown in the way he holds his poster close to himself and how he gestures to images as he speaks. This care and passion about his narrative thus manifest in his physical movements and actions. The same point will be made later of his presentation of his models and how this resounds with the assessment criteria of the spatial model project in terms of care and attention to detail.

A pedagogy for diversity is attentive to whose knowledge is validated and what counts as knowledge (Bezemer & Kress, 2016; Phillion, 2002). "Knowledge is seen as a tool, shaped contingently in the transformation of information to knowledge by someone who has the relevant information and the capacity of transforming that information" (Kress, 2010, p. 25). As he recounts his narrative, Malibongwe draws from his own knowledge, experiential and social resources. In doing so, his role in

the landscape classroom shifts from a possible marginal position to one of an expert. As Malibongwe presents, he provides detailed and often nuanced information such as dates, the sequence of events, the role of players and their motivated actions, but he also guides the viewers through the narrative in terms of his own 'take' on events and what he finds criterial (Kress, 2010, p. 36).

Malibongwe's narrative is one of the most significant in the class in terms of the difference between the traditional landscape architectural classroom and his experiences outside of the classroom. Pippa Stein (2008, p. 4) wrote about the possible stark contrast between students' experiences outside and inside of the classroom saying, "I wondered where children were being given the opportunity to connect learning in classrooms with their everyday lives" (Stein, 2008, p. 4). Despite the project brief encouraging student-selected narratives, there are many reasons why students may choose not to bring their own experiences into the landscape architectural classroom. Malibongwe is brave

in his choice of narrative: to center his spatial model learning experience around such conflict, pain and loss. Malibongwe's choices thus represent an element of 'risk' (Thesen & Cooper, 2014), bringing in knowledge and experiential resources that have been previously dismissed or ignored because of a single or dominant perspective in the classroom.

An analysis of Malibongwe's graphic narrative provides insight into the study's first research question: to identify the resources he has drawn on at the time of meaning-making. In producing this graphic narrative, Malibongwe has drawn from a range of resources including material, semiotic and conceptual resources. The premise of social semiotics is that sign-making is shaped by the sign-maker's needs and interests but also by social contexts (Jewitt, 2014a; Kress & van Leeuwen, 2006). By examining the signs that Malibongwe has chosen to represent, we can glimpse some of his interests, experiences, social values and agency in what he chooses to present.

4.2.2 Recognition of resources in Malibongwe's graphic narrative

This subsection specifically draws attention to, and recognises, resources in the visual mode that may have otherwise been invisible. Through the visual mode, Malibongwe brings a nuanced and multi-layered perception of the role-players in the narrative. In analysing Karel Nel's work in *Life of Bone*, Brenner and Archer made the following comment (2014, p. 65):

Nel's work for this exhibition exemplifies Kress's notion of argument as producing difference. Thickening perspective on an event or issue, a belief or certainty, through visual and textual juxtapositions, deepens insight through producing ambiguity. Ambiguity points to the dialogism of all texts, multiple interpretations, diverse viewpoints, and gaps in knowledge.

A similar observation could be made of Malibongwe's graphic narrative: Malibongwe is not only bringing resources into the landscape classroom that may

previously have been made invisible by a single point-of-view pedagogy, but is 'thickening perspective', bringing resources and meanings with multiple and, at times, contrasting points of view. Malibongwe's narrative is presented in a multimodal ensemble through not only verbal but gestural and visual modes. Multimodal social semiotics is an approach that recognises that different modes contribute to the meanings of a multimodal ensemble in different ways (Jewitt, 2014a; Newfield, 2014, p. 102). Multimodality recognises all modes (Archer & Newfield, 2014, p. 1) and allows for different modes to be foregrounded at different times. This approach changes the orders of visibility of resources that Malibongwe has drawn on in producing the multimodal ensemble. Additionally, the framework for analysis ensures that not only textual, but also ideational and interpersonal meanings are recognised.

The following analysis makes use of the analytical framework developed in Chapter 3 to examine the overall visual composition of Malibongwe's graphic narrative and each of the scenes or components in

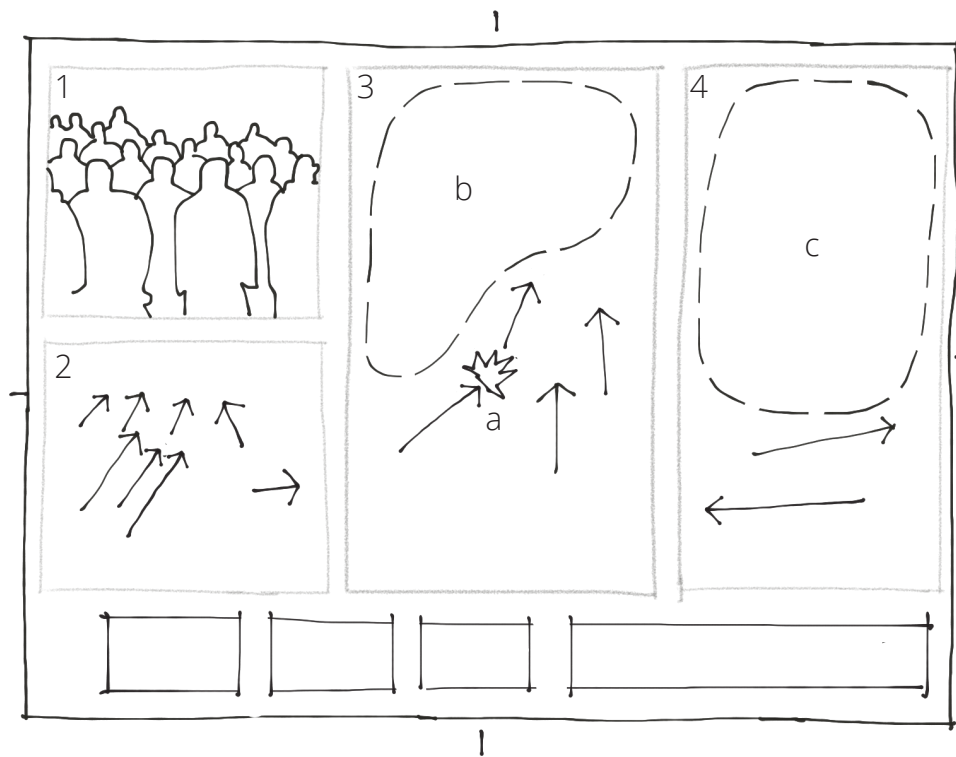


Image 4.3 Analytical diagram of Malibongwe's graphic narrative showing panels (labelled 1 - 4), vectors (shown by arrows) and voids (shown by dashed lines)

turn. The visual text reveals some of the resources he draws on as well as meanings that support, contrast or are absent in the verbal narrative.

Multimodal social semiotic analysis of the overall graphic narrative

The overall graphic narrative is displayed in landscape format and comprises four rectangles or scenes that are arranged into three vertical panels (see 1 - 4 in Image 4.3). The frames of the scenes are drawn lightly in pencil (these frames have been exaggerated by me in Image 4.3). Each scene captures a key moment in the narrative, and is reminiscent of the types of images one might have seen in newspapers, websites or documentary films about the Marikana massacre. Perhaps Malibongwe is drawing from this visual precedent, framing key 'moments' and arranging them to tell a story. He also realises affect or familiarity through these images, as viewers may already be aware of the types of scenes as reported by the media.

Signifiers and signs carry, in their make-up, the traces of long histories of practices. The meanings of these practices are present in the signifiers as a potential for meaning and are carried 'forward' in constantly transformed fashion into new signs, remade in the light of the resources that (re)-makers of signs bring with them. (Kress, 2010, p. 69)

Malibongwe could have printed out images but he has chosen to draw these scenes, by hand, using a pen. While the line-drawing images and minimal use of colour may draw on the composition and colour saturation of a newspaper article, Malibongwe is transforming and remaking this narrative through the resources he has brought with him. In drawing his own images, he is also able to make specific semiotic choices, for example, the use of *social distance* and *contact* between the viewers and the represented participants in the graphic narrative.

Coherence (see 3.5.3.1) is the degree of legibility of a text, how it unfolds or is intended to be 'read' by the

viewer. Through Malibongwe's choices in how the graphic narrative is represented, he draws on *coherence* through a strong left-to-right reading path: the scenes are to be read in order from 1 - 4 (see Image 4.3). Kress and van Leeuwen (2006, p. 46) describe 'vectors' as the visual equivalent of 'action verbs' in language. The left-to-right reading path is reiterated through the use of vectors (indicated by arrows in Image 4.3) in scenes 2 and 3. In scene 2, the miners and Noki are drawn in profile, facing left to right. The miners' fists are raised in the air, also angled slightly to the right, reinforcing the left-to-right direction of movement. In scene 3 the vector formed by the assault rifle is left-to-right and the miners appear to be running left-to-right, into the page.

Malibongwe's use of *salience* in the graphic narrative coincides with the climax or primary conflict within the narrative. Salience (see 3.5.3.1) is a textual resource that can be used to signal to the viewer what is significant or important. The four scenes can be linked to the four phases of a narrative described in the project brief handout: the character, setting, conflict and resolution.

Scene 1 represents the setting and the protagonists of the narrative, the miners. Scene 2 captures the setting of the narrative: the miners' strike. The conflict in the narrative is represented in scene 3. The representation of moment of the firing of the policeman's gun has been placed at the centre of scene 3 and the centre of the composition as a whole (see Image 4.3, a). Saliency is realised through the use of *information value*, centring elements and indicating to the viewer the key moment that resulted in the tragedy of the massacre. The resolution or aftermath of this conflict is represented in scene 4. Analysing the direction of the miner's bodies shows that they are lying in opposite directions, but there is no movement. This stillness in scene 4 contrasts with the movement and vectors in scenes 2 and 3.

The use of *figure-ground*, the way in which the frames are filled by solid or void, also impacts the meaning of the graphic narrative. In scenes 1 and 2, the miners fill most of the frame and in both scenes, the frame on the left cuts off one of the miners, suggesting that this group of miners comprises a large number of people.

This crowdedness of scenes 1 and 2, both in terms of number of represented participants as well as filling out of the frame, starkly contrasts with the low number of represented participants and the large voids or empty spaces (see Image 4.3, b and c) in scenes 3 and 4. Compared to the energy and life and fullness of scenes 1 and 2, scenes 3 and 4 express ideational meanings of emptiness, hopelessness and loss.

In considering how Malibongwe makes use of voids to convey meaning, the use of absences may also be considered. The mine owners and mineworkers' unions played a significant role in the presentation of the narrative, yet both groups are absent from his graphic presentation. In light of these absences, it may prompt the viewer to consider from whose viewpoint these scenes are shown, particularly the way the miners are presented as faceless in scene 2. Malibongwe does not give a reason for why he chose to draw the miners this way. The effect may implicate the viewer in making generalisations about miners or protestors, or may be a way of protecting the miners' identities, or perhaps

the graphic narrative may be a commentary on the perception that the mine owners see the protesting miners as faceless or dehumanised, thus allowing this tragedy to occur.

Malibongwe is not only bringing his own resources to his landscape architectural trajectory, but he shifts the boundaries of conventions within the discipline. The interpretive analysis reveals a contrast to the traditional landscape architectural concept, 'sense of place' (see 3.5.2.1). Landscape architectural discourse tends to focus on the textual or semiotic realisations of space. The advantage of merging multimodal social semiotic perspectives with landscape architectural theory reinforces not only the ideational and textual meanings, but also the interpersonal meanings within texts. An analysis of the background or settings of the scenes in Malibongwe's graphic narrative, shows an absence of physical context: there are no distant landscapes or outlines of topography or sense of physical place. The sense of place within the scenes is generated by the represented participants themselves: the place

and setting are defined by the people who are there, inhabiting it and bringing it to life.

In scene 1, the traditional attire of the miners and the spear held by Noki, give a sense of a rural or traditional homestead landscape or setting. In the second scene, the miners' attire has changed to miners' uniforms and some miners are carrying a banner, suggesting an industrial or work-place setting near a mine. The Marikana massacre took place in a landscape characterised by hills, rocky outcrops and boulders. Much of the shooting was not caught on camera because the events were obscured by the topography. Some reports claim miners were trapped in between the boulders at the time of the shooting. Despite the significance of the boulders in the massacre, they have not been shown in scene 3. Malibongwe chooses instead to convey the atmosphere through *action* and uses the page itself to show how the miners are cornered and shot by police. In the fourth scene, there is no sky or ground or vegetation or landform shown: the loss of place could realise the ideational meanings within the narrative in terms of the tragedy

and loss of lives. The resources Malibongwe brings to his graphic narrative challenge and expand conventions in landscape architectural meaning-making potentials, where the dominant discourse focuses on the semiotics of space. Corner (1999) describes the contemporary, changing attitude to traditional landscape architectural notions of 'place': "the experience of spatial life today is as much immaterial as it is physical, as much bound into time as relational connections as it is to traditional notions of enclosure and 'place'" (p. 249). Making Malibongwe's resources visible, places emphasis on the shift in thinking about how *people* and *actions*, not objects, may make a *place*.

The use of colour in the graphic narrative is multifunctional. Colour has been used sparingly, yet expresses salience through a contrast in emphasis and modality when compared to the black and white graphics. The use of colour is also a marker of coherence, of identifying elements or participants within the narrative. Green is used to identify Mcineni Noki; purple identifies the police uniform; yellow for the badge on the uniform

and the firing of the assault rifle; and red for the blood of the mine workers who were killed. In his narrative presentation, Malibongwe explains his use of colour:

[*Holds up poster*] Yeah as I said before these strikers [*gestures to top left-hand panel*] were peaceful strikers. They were not looking for trouble. They just wanted to get what they wanted, but then [*gestures to police officer*] the man in the blue uniform intervened. What happened in the end and there was blood being spilled, because that's what I wanted to represent with the colours. (Graphic narrative and presentation, Malibongwe, 24 July 2017)

Thickening perspective: in-depth scene-by-scene analysis

Malibongwe's graphic narrative and multimodal presentation provide a glimpse into how he sees the world (at the time of making).

In signs, sign-makers mediate their own social history, their present social situation, their sense of the social environment in the process of communication; and this becomes tangible in the reshaping of the cultural resources used in representation and communication. The makers of signs 'stamp' present social conditions into the signs they make and make these signs into the bearers of social histories. (Kress, 2010, p. 69)

The way in which Malibongwe chooses to represent the miners in the first two scenes is through difference. Highlighting the differences between these two scenes, shows how these signs are 'stamped' with the social and experiential resources Malibongwe brings with him. In terms of 'thickening perspective' (Brenner & Archer, 2014, p. 65), the difference between the two scenes also provides multiple viewpoints and constructs different orders of visibility of resources and meanings.

In his presentation, Malibongwe does not explicitly refer to the way in which he represents the miners in this first scene. A multimodal analysis has the

potential to recognise meanings that are not present in other modes. Scene 1 (Image 4.4) shows the faces of seventeen miners standing in three rows. Mcineni Noki, identified by his distinctive green blanket, holds a short spear, but it is pointing down. The miners are all wearing blankets and the miner in the front row on the right appears to have marks or holes in his blanket. This may connect to the setting of the narrative, the miners' request for improved wages, as well as Malibongwe's concern that there are disparities between the wealth of the mine owners and the physical risk of the miners' work compared to their relatively low compensation.

The miners in scene 1 are directly facing the viewer, in a type of 'demand' (Kress & van Leeuwen, 2006, p. 118). This direct 'demand' from the represented participants acknowledges and invites the viewer to engage with the miners. Through the medium-close shot, a 'close social distance' (Kress & van Leeuwen, 2006, p. 124) may be realised. At this distance, the facial features of the five miners in the foreground can be identified: eyes, nose, mouth, hair and ears. Through this 'demand' and 'close



Image 4.4 Scene 1 from Malibongwe's graphic narrative, original size (27 July 2017)

social distance', the viewer is compelled to acknowledge the miners in their humanity, as ordinary people. The analysis later discusses how this humanity is juxtaposed by representations of faceless miners in scene 2 (see Image 4.5).

The representation of blankets is deeply symbolic in many parts of Southern Africa: different blankets are worn at different phases and ceremonial occasions throughout a person's lifetime. The wearing of blankets could show a sense of pride or identity associated with belonging to a community with particular traditions, customs and values. It is possible however, that the miners in this group come from different regions in Southern Africa and speak a range of languages. The repetition and similarity of arrangement of blankets worn by the miners could indicate that, despite differences, there are shared values and common goals. This sense of community across a range of ethnicities may be reinforced by the words "our brothers" at the bottom of the graphic narrative.

During apartheid, South Africans were physically segregated according to ideas of 'race'. As a result, 'homelands' were set aside for various ethnic groups. These areas were economically underdeveloped and the vast majority of men living in these areas were forced to become migrant labourers, working in mines or farms or cities, far away from their homes and families. These patterns of segregation and migrant workers still persist despite the end of apartheid. Malibongwe does not explicitly explain the meanings of his representation of the miners in this first scene but perhaps the viewer may be reminded that these men are not only miners but are foremost brothers, fathers and husbands belonging to families and communities with rich customs and values. Compelled through economic circumstance, these men are forced to work in dangerous jobs for little compensation. Of all the ways in which Malibongwe could choose to represent the miners, he has chosen to represent them in this way: humbly, but also valued. This representation of the miners contrasts with how they are represented in the second scene. The graphic representation therefore includes nuanced meanings

that are not explicitly mentioned in his verbal narrative.

The miners in the second scene are depicted very differently from the first. Scene 2 (Image 4.5) depicts the miners in an ongoing protest. Mcineni Noki can again be identified by his green blanket, but all the miners appear to be wearing their work overalls or uniforms and hard hats. The hard hats may signal that the work the miners undertake is dangerous. The mining uniforms may index global identities and actions related to commercial or industrial activities. This contrasts with the sense of local and community identities of the represented participants in scene 1. One miner is holding a banner in the air and five of the miners have raised their right fists in the air, the 'amandla' gesture of the liberation movement during apartheid. Mcineni Noki is standing in front of the protesting miners, but it is unclear if he is leading them forward or holding them back as he himself does not have his arm up in protest with the other miners. In contrast to the passive or inactive miners of scene 1, the miners in scene 2 are assertive and active as realised by the vectors of their arms.



Image 4.5 Scene 2 from Malibongwe's graphic narrative, original size (27 July 2017)

Unlike scene 1, very few facial features of the miners are shown in scene 2: faces are either hidden by their raised arms, or in the case of the miner holding the banner, his facial features have not been drawn. This lack of individuality could be ensuring the anonymity of the striking miners, but could also reinforce the unity or solidarity of the miners as a collective, working towards a common goal. Given the absence of mine owners from the graphic narrative, and the implication that they could be part of the intended audience, the facelessness of the mine workers may represent how the mine owners perceive the miners. This latter interpretation reveals the significance of the way in which scene 1 depicts the miners as humble, as belonging to communities and families who will mourn their loss: it is possibly a foil to the faceless miners as may be perceived by the mine owners.

The third and central scene of the graphic narrative (see Image 4.6) takes a sudden and violent turn. This scene shows a uniformed police officer, firing an assault rifle at three miners who have their backs turned and

are running away. One miner is on his knees, another miner is shown with a red dot on the back of his shirt, he has been shot. In detailing the complex lives of the miners, Malibongwe sets up an unexpected juxtaposition: the tone of the first two scenes moves abruptly to one of violence and death. The scene is also one of intense action: Malibongwe has highlighted the explosion from firing the gun with the colour yellow. The placement of the police officer in the front left of the scene, foregrounds the power and role of the police in this sudden moment of violence. The three miners are in the background and the vector formed by the direction of the assault rifle means that the miners are running 'into the page'. It appears as though the miners are trapped and have nowhere to hide or escape from this barrage. The scene is positioned so that the viewer is behind the police officer. Painter, Martin and Unsworth (2012, p. 21) describe this positioning of the viewer as mediated or vicarious focalisation. Mediated focalisation places the viewer as looking 'over the shoulder' (Painter et al, 2012, p. 27) or being in the position of a character in the narrative, not just a passive

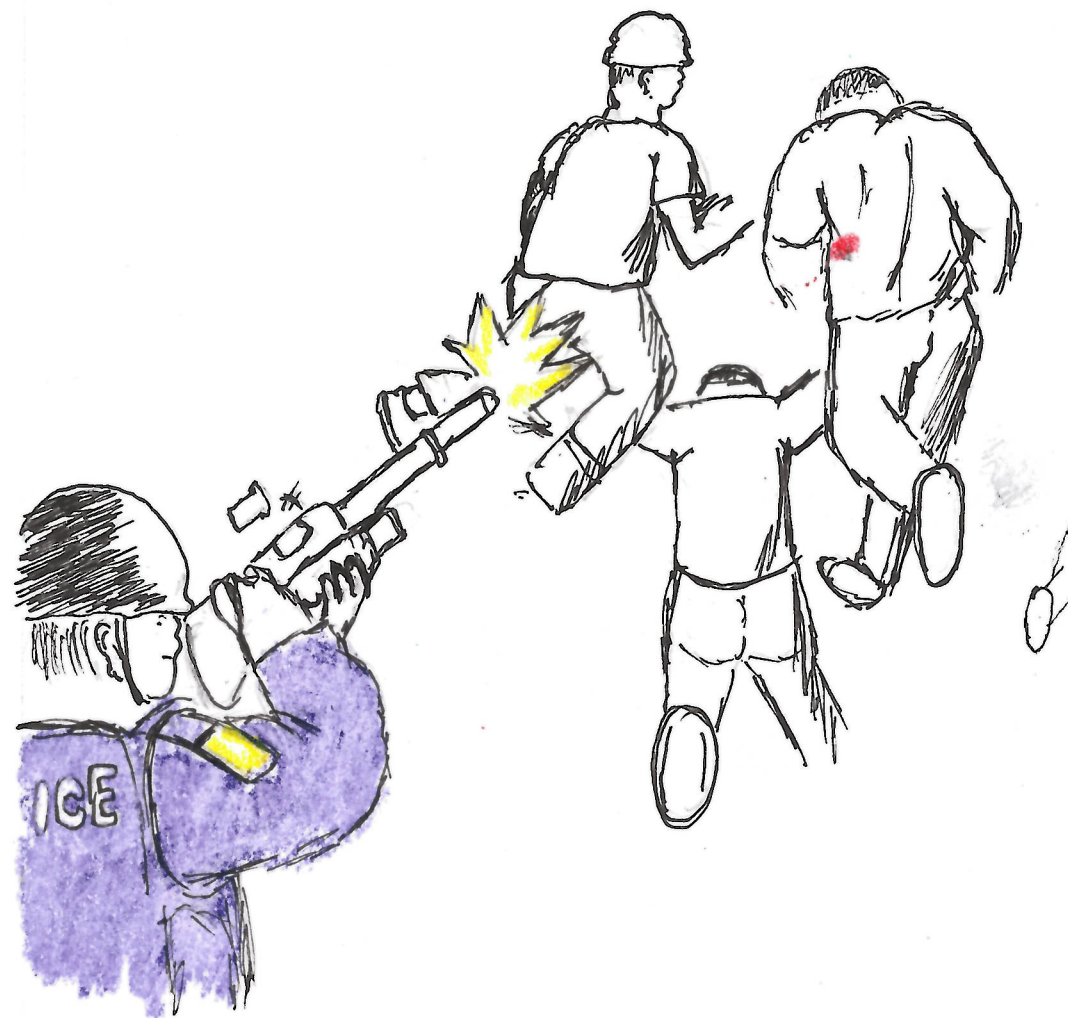


Image 4.6 Scene 3 from Malibongwe's graphic narrative, original size (27 July 2017)

observer. This choice of mediated focalization of the viewer, reinforces Malibongwe's analogy of the police as a 'shield' between the mine owners and mine workers. Through this particular positioning, Malibongwe could be suggesting that the viewer is in the position of the miner owners. Painter et al (2012, p. 20) further suggest that this focalisation may "heighten identification or empathy in key moments of the story". In representing the miners and police in this way, Malibongwe highlights his interest in the injustice of the miners' deaths and his concern with the role of the police in the tragedy. Malibongwe may be drawing on precedent resources of photographs of the event or similar events: for some viewers, scene 3 may recall memories of images of the Sharpeville massacre in 1960, of a sudden police shooting of a crowd of protestors. Of the 69 people who died at Sharpeville, many were shot from behind as they were running away. This scene in the graphic narrative, as well as Malibongwe's subsequent models, depict the misuse of power of the police and a sense of mistrust of the police. Malibongwe is not only bringing diverse resources to his meaning-making processes, he

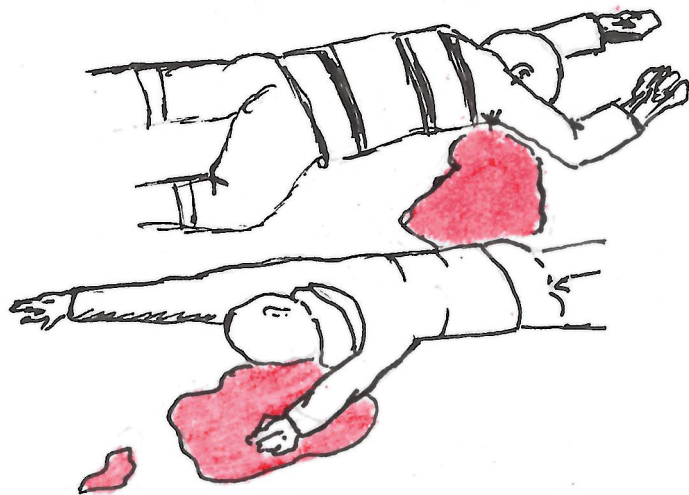


Image 4.7 Scene 4 from Malibongwe's graphic narrative, original size (27 July 2017)

is transforming them to convey a personal commentary on the devastation exacerbated by unequal power relations at Marikana.

The final scene (see Image 4.7) of the graphic narrative shows the aftermath of the shooting: the mine workers lying face-down in pools of blood that have been coloured red. The two mine workers are also lying in opposite directions, suggesting the chaos and confusion of people running in different directions to avoid the gunfire. Malibongwe has also chosen different ways of representing the miners' hands, which reinforce the ideational meanings within each scene as related to the overall narrative. In the central panel, the mine workers' hands are not visible. In the final panel, the victims' arms are outstretched with their hands visible and palms down. The juxtaposition in representation of hands can be traced from the proactive fists of the protesting miners, to the invisible hands of the miners under gun fire, to the unmoving, lifeless hands of the victims. The use of framing, particularly in the central and right-hand panels, highlights the expanse of white

space in each panel, which may remind the viewer of loss or emptiness. In terms of noise and activity, there is a juxtaposition between the second panel depicting active, vocal protestors; the chaos and sound of firing guns in the central panel; and the lack of movement and silence of the final panel.

The repetition of the colour red contributes to the coherence and cohesion of the graphic narrative, making a connection between the shooting, the victims and the unanswered question "why kill our brothers?" The colour red is used to show blood dripping from the lettering that spans the length of the bottom of the poster. Malibongwe has symbolically extracted the loss of blood from the scene of the victims of the shooting. Written in uppercase letters are the words "WHY KILL OUR BROTHERS?" Phrasing this sentence as a question and not a statement foregrounds the tragedy and hopelessness of the situation. The sentence is also not a headline, positioned at the top of the page. An event such as this must provoke many questions that cannot be answered. Perhaps this question represents

the types of questions Malibongwe is concerned about: Why are mine workers paid so little when their jobs are so dangerous? Why are these men so far from home? Why would no one negotiate or listen to the mine workers? Why were the mine workers abandoned by their union? Why did the police fire live ammunition and not rubber bullets? Why did the day's events change after the phonecall? Who gave the order to shoot at the mine workers? Why was no one held accountable? Why did the mine workers have to die?

In this analysis I have shown the different types of resources that Malibongwe may have drawn on to make his graphic narrative. Archer and Newfield (2014, p. 6) explain the value of a multimodal social semiotic approach to understanding the role of resources in design:

Our assumption is that people choose how to represent meaning from a range of possible options shaped within a particular context. Therefore, we see both teachers and students as designers of meaning. Once they

recognise the available resources, they are able to utilise them in design. This may mean drawing on resources that were previously unnoticed or devalued since they seemed inappropriate in an educational setting.

This extract reminds us that students, as much as teachers, need to recognise and change orders of visibility of resources in the classroom. Malibongwe's graphic narrative was particularly exceptional because of his ability to draw on his own social, semiotic, precedent, knowledge and experiential resources, thus bringing diversity and difference into the landscape architectural classroom. Through a detailed multimodal social semiotic analytic lens, this section has shown how; through his choice of resources, interest and realisation of ideational, interpersonal and textual meanings; diverse resources that may previously have been invisible are recognised and valued.

4.3 Transformation of resources and recognition of signs of learning: an analysis of the 3D model

Through the analysis of Malibongwe's 3D spatial model, this section focuses on the transformation of diverse resources as signs of learning and how these are validated through the project's assessment criteria. This section argues that the process of designing a spatial model involves the transformation of resources, which results in new representations that encompass new meanings (knowledge) and in that way evidences learning. Malibongwe's model shows how "makers of representations are shapers of knowledge" (Kress, 2010, p. 26). This section draws on the interrelated concepts of: *transformation* (Kress, 2010), *designs for learning* (Selander, 2008, 2013), *signs of learning* (Bezemer & Kress, 2016) and *transmodal moments* (Newfield, 2014).

A multimodal social semiotic approach moves beyond understanding meaning-making as the acquisition of, or competence in, fixed meaning-making systems,

and shifts the focus to the situated meaning-maker as designer. Central to this shift is the concept of transformation: while reflecting their interest, social positioning and available use of resources, meaning-makers actively engage in a process of 'remaking' (Kress, 2010, p. 26), the production of 'the new' (Kress, 2010, p. 42). Transformation "highlights the creative, agentic action of sign-making, which is based on the selection of apt, available resources to represent and communicate the sign-maker's interest" (Newfield, 2014, p. 101). Kress also makes use of the term 'transformation' to describe changes of meanings within the same mode, as opposed to 'transduction' where changes in meaning are a result of a change from one mode to another (Kress, 2010, p. 43). As argued in the Chapter 2, this thesis chooses to use the term *resemiotisation* when referring to changes in meaning through different or similar modes as well as changes between modes. Transformation can also be understood in a broader sense as social change. The use of the term transformation in this context, however, refers to the process of (re)design or 'semiotic change' (Bezemer & Kress, 2016, p. 52).

This process of transformation of resources has been linked to the process of learning. Selander (2008), researching 'designs for learning', explains that learning "is defined as an increased capacity to use signs and engage meaningfully in different situations" (p. 12). Bezemer and Kress (2016) also argue that learning is the result of interpretation through transformative engagement. "Interpretation is seen as the 'inner' *re-making* of the sign by the person who has engaged with some part of the world" (Bezemer & Kress, 2016, p. 24).

4.3.1 'Remaking' the narrative: the realisation of the 3D spatial model

After the poster presentations and crits, the students were given instructions for the model-building phase of the project. Potential model-building materials and techniques were discussed and demonstrated to the class, although students were encouraged to make use of any type of model-building material or techniques. A box of different types of materials was left in the studio for students to use, as well as craft knives, stainless steel

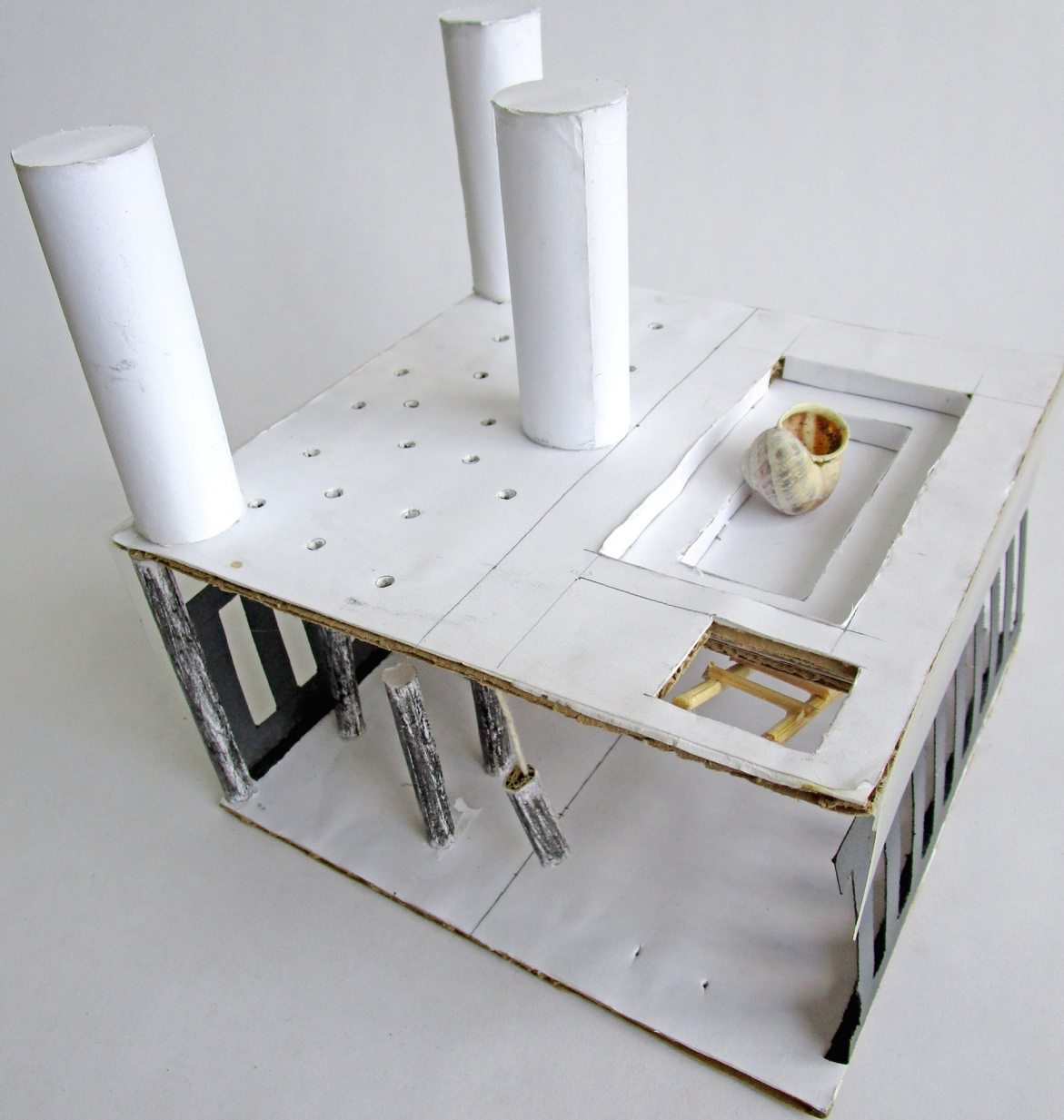
rulers, glue and cutting mats. Students were also asked to select the scale they would build their model. The only physical requirements for the model were that it should be between 100 X 100 X 100mm and 300 X 300 X 300mm in size, and should be sturdy with no loose items. Students were given a class hand out with a description of the brief (see Appendix C) and an assessment rubric (Appendix D) which was also discussed. The primary criterion was that the models should represent the students' narrative as a spatial experience. The spatial model that the students design is a scaled version of an imagined full-scale installation that could hypothetically be constructed in a public open space such as Green Point Urban Park. This aspect of the brief means that some ideational meanings in terms of setting, purpose and ownership may be predetermined.

Malibongwe's narrative is not only realised in the 3D model, it is also remade: the transformation of resources into three-dimensional spatial form results in new understandings and the production of new meanings. The experiential, social and knowledge resources

Malibongwe draws on to make his graphic narrative are *transformed* in his spatial model. Instead of representing the sequence of events, Malibongwe *redesigns* the event providing insight into the relationships and power dynamics between role players, as well as foregrounding the inequalities and injustices experienced by the miners. The following subsection discusses how ideational and interpersonal meanings are realised through choices in textual resources including: spatial relationships, scale, proportion, contrast, proximity, groundedness, permeability and time.

Through the use of textual resources, namely *contrast*, *colour* and *scale*, Malibongwe expresses interpersonal meanings: the power relations between the mine workers and the mine owners. Malibongwe's spatial model comprises two levels: a square base with a second square platform directly above it (see Images 4.8 and 4.9). The lower level is open on two opposite sides; the alternate two sides are partially-enclosed by thin black walls with regularly-spaced vertical slots. The upper level is supported below by thin black columns

which "represents [...] the miners" (Model 2 crit, Malibongwe, 16 August 2017). There are three large, wide, white columns on the upper level which represent the mine owners: "these are the superior guys and the management" (Model 2 crit, Malibongwe, 16 August 2017). The difference in scale or proportion between the thin black columns and the wide white columns represents the difference in power or equality between the mine owners and the miners: "I've used these columns, to show that these people were not equal, like in terms of power and everything. The [...] one is smaller, the other one [is] bigger in scale. So that shows they are not equal in scale" (Model 3 peer review, Malibongwe, 21 August 2017). Wealth and power relations can also be understood in terms of Kress and van Leeuwen's (2006, p. 186) Ideal and Real. The lower level represents the Real, the current situation where the miners have limited access to wealth and power. In contrast, the upper level may represent the Ideal, the miners' aspirations for 'what might be' (Kress & van Leeuwen, 2006, p. 186). Malibongwe demonstrates through the spatial and verbal mode his dexterity in producing new



signs or meanings. He uses differences in proportion or scale of the columns to expose differences in power and wealth between the miners and mine owners. The way Malibongwe deploys resources is threefold: firstly, he draws on his own experiential and social resources to convey ideational and interpersonal meanings; secondly, he abstracts and transforms these resources as spatial forms; and thirdly, his explicit use of the term 'scale' demonstrates that through this transformation of resources he is also drawing on resources such as the terms and concepts of proportion and scale.

One of the ways of mediating students' movement from the visual to the spatial mode, is for the group to discuss the potential or affordances of the themes or concepts from the narrative to be 'translated' into the spatial mode. After Malibongwe's graphic narrative presentation, the group discusses some of the themes that have emerged such as inequality and subjugation.

Image 4.8 Top view of Malibongwe's Model 3
(23 August 2017)

Christine: So [...] I think this might be very interesting to do in the model but it's like pushing something down and keeping it down. It's like someone that's trying to grow and get better and somebody is like pushing them down all the time. I think that's what subjugation is like. You know, where you won't allow something to flourish and to grow and to develop [...]

Malibongwe: Like oppression. [...]

Christine: Yes, oppression. I think [...] that is really a very strong theme [...] you can really explore [...] in a model. (Graphic narrative and presentation, Malibongwe, 24 July 2017)

Malibongwe may have drawn on interactive resources from group discussions such as these in the process of making his models.

Malibongwe also draws on textual resources that show differences in *mass* and *spatial relationships* to define the interpersonal and ideational meanings of the relationships between the miners and the mine owners leading up to the Marikana massacre. In his model, he



Image 4.9 View of lower level of Malibongwe's Model 3 (23 August 2017)

has drawn a pencil line running through the middle of both the upper and lower levels, dividing each level into two halves. Both the white and black columns have been grouped together onto half of each level. The three white columns are also arranged in a triangular pattern: Malibongwe is drawing on *shape* as a resource to depict power. The three large, white columns are placed above the thin black columns. This spatial separation of elements conveys “that the oppressed [are] underneath the oppressors” (Final presentation, Malibongwe, 30 August 2017). The wider white columns appear ‘heavier’ in mass and are ‘weighing down’ the thinner black columns below. “You can see these guys, like the top management [*touches top level*] they are oppressing the black guys [*points to lower level*], like not paying them enough wages for them to survive. They are doing all the hard work but they are not getting paid enough” (Model 3 crit, Malibongwe, 23 August 2017). Malibongwe explains his use of oppression in his model in a peer review crit: “And then oppression. I’ve tried to represent that by putting another layer on top of the smaller columns. It’s more than what they can withstand.

So they are being oppressed by this top plane. It consists of other people on top so the mass is more than they can handle” (Model 3 peer review, Malibongwe, 21 August 2017). He draws on mass as a resource to represent the weight of oppression. It is important to note again Malibongwe’s use of vocabulary such as ‘plane’ and ‘mass’ which shows how he draws on textual, interactive and pedagogic resources. Malibongwe is not only transforming the resources he brings with him, he deftly combines these with resources he has taken up from the landscape architectural discourse, forging a connection between his everyday life and that of the landscape architectural classroom.

The model includes layers of ideational and interpersonal meanings that are realised through textual resources such as *proximity*. The proximity or grouping of thin black columns into one half of the lower level firstly symbolises the solidarity of the miners: “all these black columns are on one side, which shows that these guys are united during all this” (Model 2 crit, Malibongwe, 16 August 2017). Secondly, the tightly-grouped columns

are intended to create a sense of fear and confinement: "I want the people who, I want them to feel what the people who were shot in Marikana felt that day [...] I mean the way the columns are clustered, close to each other, you can feel scared like you are being dictated to" (Model 3 peer review, Malibongwe, 21 August 2017). This spatial grouping of columns realises ideational meanings through resources such as narrative and *qualities of place*, as well as interpersonal meanings by drawing on *affect* and *interaction* as resources. Young (2012, p. 196) suggests that narratives can help link intangible memories and experiences to a tangible space. The imagined spatial experience may prompt users to link their own memories of the event to their experience of place. Malibongwe has not made literal use of boulders to replicate the way in which the miners were trapped during the shooting but has abstractly represented a space clustered with obstacles. In doing so, Malibongwe also draws on multifunctionality as a tool to layer multiple meanings of forms and spaces in his model. This is an indication of signs of learning: fulfilling assessment criteria, such as abstraction and

multifunctionality, through the transformation of resources he brings to his design processes.

Malibongwe also draws on *proximity* and *contrast* in groundedness, textual resources that symbolise meanings of the role of the mine workers' unions and their relationship to the mine workers. Two of the black columns on the lower level do not touch the ground plane of the lower level and are suspended in the air by string. One of such columns is placed near the larger group of thin, black columns, the other suspended column is separate from the larger group. Malibongwe has used contrast to differentiate between the larger group of black columns and the suspended columns, but has also spatially separated one of these columns through remoteness, rather than proximity. These suspended columns represent the mine workers' unions who should have been seen to support the miners but did not:

And I've used these guys [*pulls up one of the columns hanging from string*], like these small columns to represent the guys [...] who [...] pretended [...] they were representing the miners. But at the same time, it was for their own interest [...] not the interest of the miners. For example like the NUM. (Model 3 crit, Malibongwe, 23 August 2017)

These suspended columns show how Malibongwe innovatively interrogates the affordances of the spatial mode in order to transform his narrative into a three-dimensional model. This creative and experimental use of materials is also valued through the assessment criteria.

The sense of mistrust of the police that is evident in the graphic narrative is resemiotised in the model, drawing on different textual resources to show this mistrust. The thin, black wall planes that partially enclose two sides of the lower level comprise regularly-spaced vertical slots or cut-outs. These black wall planes represent the police and their role in the Marikana massacre. The wall

planes are a charcoal *colour* that may be suggestive of the blue-grey colour of South African police uniforms. The regular *pattern* of vertical cut-outs may refer to the regiment of the police force or patterns of police standing to attention. Malibongwe has used the *spatial relationship* of these two wall planes between the two levels of the model to represent:

the police because they intervened in the matter that did not concern them. For example, every employee has a right to speak to its employer, not to take part in a third party. So the police were the third party. They interfere in the matter which did not concern them. So this [*touches the wall planes*] represents them. (Final presentation, Malibongwe, 30 August 2017)

In one of his crit discussions, Malibongwe explicitly mentions this spatial relationship that has been designed in the model: "The wall planes represent [...] that they were [...] the middle guys, the police, who interfered in the matter of employer and employee" (Model 2 crit, Malibongwe, 16 August 2017). If the

lower level represents the miners and the upper level represents the mine owners, then the representation of the police as a wall plane between the two levels may depict that the police 'interfered' in the relationship between the miners and mine owners. Malibongwe draws on resources such as colour, pattern and spatial relationships, to express abstract representations of the police.

Malibongwe makes use of *translucency* or permeability to convey his concern that the mine workers' protests were not acknowledged. The black wall planes are connected to the lower level floor but do not touch the surface below the upper level. Between the top of the black wall planes and the upper level is a strip of plastic. The plastic is opaque or translucent, allowing light but not detailed shapes to pass through, and represents how the miners' concerns were not being heard:

I've kind of added this one [*gestures along opaque plastic*], to show that the miners were in a situation [in] which they had no voice and no-one was listening to

them [*he claps once for emphasis*] at that time. Even the management didn't want to speak to them about their concerns whatsoever. (Model 3 crit, Malibongwe, 23 August 2017)

In his final presentation he again explains the meaning of the transparent plastic:

So what this is, like if you can see now like it, this sort of encloses this place now and I'm trying to show that the people felt like they can't [*holds his hands together*] they are saying everything but no one listens to them. Their voice is not heard by the top management and their union is turning their backs on them so their voice is not heard at this moment. So that's why I've used these transparent [sheets] to represent that everything is the same. (Final presentation, Malibongwe, 30 August 2017)

Malibongwe is drawing on translucent material as a resource to convey his concern that the miners were not heard. Translucent material is a filter, allowing some information to pass through it, but preventing detailed

information from being seen. Perhaps the notion of filtered light, highlights the way in which the miners' protests were not fully acknowledged or were partially invisible. Although it may be an enigmatic realisation of meaning, it shows how Malibongwe is innovating and actively pushing the boundaries of the affordances of materiality and space to design a spatial experience for the user. This innovation is again validated by the assessment criterion that encourages students to engage with experimentation.

The way in which Malibongwe has deployed resources to move from the 2D to spatial modes has liberated new meanings, insights and perspectives. The imagined realisation of a spatial experience provides the viewer with an unexpected interpretation of the Marikana massacre. Instead of portraying the mine workers as deviant strikers, the nature of their socio-economic role and position has been foregrounded. The transformation of resources into the spatial mode has thus opened up new meanings.

4.3.2 'Remaking' the narrative: (re)designing imagined futures

Through spatial forms, Malibongwe's model includes an imagined future or 're-design' of the narrative. Elements of the model described so far are representations of Malibongwe's understanding of the situation and events leading up to the Marikana massacre. Malibongwe, however, has also explicitly included a future vision for the situation, represented by the ladder, the holes (or punctures) in the upper level and the shell.

The ladder and punctures in the upper level are spatial devices that link the 'oppressed' spatial position of the miners with the 'privileged' position of the mine owners or managers. Malibongwe explains his meaning of the ladder: "And I've made [a] ladder which shows that there's hope that one day these guys can actually get what they wanted even though, like it meant blood spilling" (Final presentation, Malibongwe, 30 August 2017). The holes or punctures in the upper level symbolically allow light to shine down into the darker

level below: "These holes show that someday [*turns sideways to look underneath model*], even though they are underprivileged now, some day like the sun will shine on them and they can be able to get what they want" (Final presentation, Malibongwe, 30 August 2017). The phrase 'the sun will shine' means to have good luck or good fortune. Malibongwe plays a multimodal 'pun' with this metaphorical meaning of the phrase and the physical experience of light shining through the holes in the sky plane. Malibongwe's model initially appears to replicate the power relations between the mine workers and mine owners, however, the addition of the ladder serves to challenge these power dynamics. This idea is reinforced by an analysis of the ladder and punctures in the upper level through Kress and van Leeuwen's (2006, p. 176) framing. The ladder and punctures spatially connect the lower and upper levels, representing that in the future the miners may be able to move from the lower level to the upper level of management.

Malibongwe also makes use of time as a resource. The graphic narrative conveys a sense of time through

an unfolding sequence of events. These events (the circumstances and inequalities leading up to the Marikana massacre, the protests and the shooting of the miners, as well as Malibongwe's vision for a positive future) are all combined into one spatial model. Chronological passage of time has not been resemiotised into the models, where past, present and future exist simultaneously.

The development of meaning of the shell in Malibongwe's model illustrates important pedagogical implications for this research. Firstly, the shell is an unusual and unconventional choice of material, but it also demonstrates the extent to which Malibongwe recognises the range of resources from which he can draw on in his meaning-making trajectory. It shows the importance of multimodal pedagogies to construct different orders of visibility of resources that students can choose to draw from.

Secondly, the use of the shell highlights the nature of the landscape architectural discipline and the connections

between meaning and physical forms. Initially, Malibongwe explains “the shell represents the prize like they actually wanted R12 500 and they negotiated and they actually got R12 500 so like they achieved what they [...] wanted” (Model 3 crit, Malibongwe, 23 August 2017). Malibongwe has made a deliberate choice to make use of the shell as a resource and his interest ensures that it is apt for his communicational needs. To the viewer, this ideational meaning of a ‘prize’ and its textual representation as a shell, may appear to be arbitrary. The assessment criteria of the spatial model project, and landscape design processes in general, require a strong connection between forms or spaces and meanings. The primary means for assessing the strength of this connection in design education is the students’ mediation or presentation of it. This may mean that the assessment of meaning-making in the spatial mode relies on students’ verbal or linguistic articulation of that process. The design theory classes and crit discussions both implicitly and explicitly provide students with design tools, such as a metalanguage through which to express their designs.

The crit discussions (see Appendix K) attempt to draw Malibongwe’s attention to the seemingly arbitrary connection between meaning and form, and at the same time, makes use of the interactive resources of the crit discussion group to redesign these connections between the meaning and form of the shell.

Thirdly, Malibongwe himself recognises and draws on interactive resources to reconceptualise what is ‘meant’ by the shell. In his final model presentation, he explains that the manner in which he found the shell connects to the realisation of meaning within his narrative: it is something that can only be gained through difficulty.

It took me a lot of effort to get the shell so that’s why I did include it in my models. Like [...] these people, it took them a lot of time, bloodshed and people getting injured. Some losing their lives so that they can get their reward at the end of the day because they ended up getting the R12 500.00 they were looking for. So that’s why I used the shell in my model. (Final presentation, Malibongwe, 30 August 2017)

In summary, Malibongwe's model makes use of a number of textual resources, spatial forms and devices including: mass, proportion, shape, contrast, groundedness, colour, difference, spatial experience and time. These spatial forms provide new insights and meanings to the events and role players within the Marikana massacre narrative. Malibongwe's spatial model is inspiring: he brings passion, interest and difference into his learning environment and draws on his own social and experiential resources. He combines these with pedagogic and interactional resources he takes up and transforms these in innovative and insightful ways to engage with semiotic resources including the ideational, interpersonal and textual. In doing so, he exhibits values and criteria of the discipline such as abstraction, experimentation, care and, furthermore, redesigns a future for his narrative. He is an example of what the New London Group (1996) had imagined in "designing social futures": situating practice within a range of 'lifeworlds', drawing on overt instruction through metalanguages, critically framing designs of meaning and transforming designs across familiar and

new contexts. Newfield (2013, p. 147) describes these moments where new meanings are reconstructed through multiple modes as 'transmodal moments' or 'Kressian moments'.

4.3.3 Multimodal pedagogies: A 'Kressian moment'

Kress's concept of learners as *designers* of meaning found traction particularly amongst researchers in education who were developing transformative pedagogies in post-apartheid South Africa. Newfield (2013, p. 141) describes how:

Multimodality offered a profound form of semiotic liberation which resonated with our desire to liberate meaning-making and education from the strictures and policing under which they have been subjected during the former political regime.

This community of researchers began to apply a multimodal social semiotic approach to their classrooms. These multimodal pedagogies resulted in what Newfield terms 'Kressian moments': "when students have produced the unexpected, when they have gone beyond their teachers' expectations and brought "magic" to their classrooms (Reed, 2008)" (2013, p. 145). In foregrounding design, multimodal social semiotics moves away from educational models that view learning as acquisition of knowledge towards making and production of meaning (Archer & Newfield, 2014, p. 4). Malibongwe's model design is more than a representation of resources in the spatial mode, it is a multimodal text that is more than the sum of its parts (Ravelli & McMurtrie, 2016, p. 14). It is a poetic spatial expression of a deeply nuanced social situation. The model captures something of Newfield's 'Kressian moment'.

These moments are potent. They have thrust themselves into the drudgery of routine, into the gap between rich and poor and between different disciplinary paradigms.

They have been a stay against exclusion, lethargy, and mental straitjacketing. They are at the heart of knowledge production necessary in contexts of political change (Newfield, 2013, p. 149).

Malibongwe's spatial model is a 'Kressian moment': the model, in its abstraction, allows for diversity in interpretation and unlocks broader issues of socio-economic disparities. Malibongwe, seemingly effortlessly, holds together his own resources as well as those he has taken up from landscape architecture.

Malibongwe's model can be compared to abstract art. This abstraction may aid viewers in bringing their own experiences and feelings to their interpretation of the space. Understanding the context in which it was designed may help guide the interpretation of its meaning (A. White, 2004, p. 54). The abstract nature of the model enables it to move beyond the specifics of the Marikana massacre and address the circumstances in which mine workers in South Africa may find themselves in general. Malibongwe's model depicts the

mine workers below being oppressed by the weight of the mine owners, but also how they support the higher level above, in terms of generating the wealth or profits. There are some parallels between Malibongwe's work and the 1927 silent film *Metropolis* that highlights the gap between the wealthy urban industrialists who benefit from the efforts of the industrial workers. The movie also represents this gap spatially in terms of levels: "As deep as lay the workers' city below the earth, so high above it towered the complex known as the 'Club of Sons', with its lecture halls and libraries, its theatres and stadiums" (Lang, 1927). During the final presentation, Walter, one of the examiners, observes that the forms of the white columns remind him of factories and industrialisation (Final presentation, Malibongwe, 30 August 2017).

Malibongwe demonstrates profound 'resourcefulness' (Mavers, 2007) in designing a spatial model that brings together his own resources as well as those that are valued in landscape architecture (made explicit through the project's assessment criteria, see 4.1.3). His passion and concern for the miners, as well as his innovative use



Image 4.10 Redrawn screenshot of Malibongwe engaging with his first model in his final presentation assessment

of materials, shows how he brings his own resources into his learning environment while at the same time engaging in criterion 1: questioning, exploring and innovating. Aligning with criterion 2, his model displays high levels of cohesion and meanings and forms are multilayered. For example, the use of thin black columns carries layered meanings: the inequalities experienced by the miners, the solidarity of the miners, and a spatial experience designed for users to feel some of the chaos and fear of the shooting. Malibongwe's model draws on abstraction and spatial experience to realise meanings (criterion 4). He shows his resourcefulness in recognising, taking up and expressing concepts related to landscape architectural design and education (criterion 5). Lastly, the 'magic' of Malibongwe's spatial model extends to his embodied interaction and engagement with the model. "One way people display their knowledge about space is by pointing, using a gesture to indicate a place or a thing in a place, or perhaps a thing moving from one place to another" (Haviland, 2000, p. 13). In every crit Malibongwe interacts with his model: he picks it up, moves it around, peers inside and really engages with

it as he presents it. Image 4.10 depicts a moment in his final model presentation when he bends down to peer inside his model as he is explaining it. The magic of this 'Kressian moment' was recognised by students, as well as the assessment panel, who awarded him the highest mark in the class.

4.4 Conclusion: changing orders of visibility to connect Malibongwe's experiences to the landscape architectural classroom

The rationale behind this research study was born out of a concern that current and historical inequalities result in unequal access to education, specifically landscape architectural education and subsequent practice. These inequalities contribute to marginalising diverse students, as well as creating a disconnect between students' everyday contexts and the landscape architectural classroom. The first research question 'what resources do diverse students bring to their learning

experiences in the context of landscape architectural education?’ was developed in order to engage with identifying, recognising and changing orders of visibility of the resources diverse students bring with them. A multimodal social semiotic approach to this question has a double benefit: valuing equally all modes and their different contributions to the meaning-making process and; foregrounding at different times not only the textual but also ideational and interpersonal meanings within a text or multimodal ensemble.

The analytical framework developed in Chapter 3 was carefully applied in the process of analysing Malibongwe’s texts and multimodal ensembles. Through the recognition of resources this analysis has revealed the interest, knowledge and difference in terms of the resources Malibongwe brings to his learning environment.

Since narratives help to establish systems of belief and authority, they reproduce relationships of power in a society. Often dominant groups tell their story in

the landscape, controlling interpretations as well as preventing others from making history. (Potteiger & Purinton, 1998, p. 60)

Through his narrative, Malibongwe establishes a position of authority and expertise as well as a reshaping of meaning through his own interest and position.

Malibongwe’s project is an example of how a student could forge a path connecting their everyday experiences with those of the landscape architectural classroom. Image 1.1 shows a conceptual representation of a pedagogy that encourages diverse students to draw from their own experiences and resources in order to engage in the discourse of landscape architecture. The New London Group (1996) suggests that teachers need to facilitate a learning environment where students redesign “new practices embedded in their own goals and values” (p. 87). Stein cautions that this learning environment should not prevent students from accessing dominant discourses or practices but to hold “in creative tension access to dominant discourses,

while building on the rich variety of resources that students bring to learning contexts" (Stein, 2008, p. 3). The discourse of landscape architecture, represented by the medium of a spatial model, becomes secondary to the narrative that Malibongwe chooses to convey to the world. Malibongwe shows how this pedagogy for diversity can be put into practice: he explores the impacts of three dimensional forms and spaces through a story that expresses his concerns, values and interest in the world. As a landscape-architect-in-training, Malibongwe is challenging and expanding what it means 'to mean' in landscape architecture. In Image 1.1, the connection between the student and landscape architecture is bidirectional: as Malibongwe brings his own resources into the field of landscape architecture, so landscape architectural education also engages in changing orders of visibility, validating multiple perspectives and embracing new contexts.

CHAPTER 5

Resemiotisation: tracing the movement and transformation of resources in a design trajectory

5.0 Chapter overview

The focus of Chapter 5 is the second research question, ‘how do students mobilise these resources to move between spatial, visual and verbal modes in a design trajectory?’ Where Chapter 4 analysed texts within multimodal ensembles as static ‘moments’ in the meaning-making trajectory and concentrated on the recognition of *what* diverse resources are brought to the landscape architectural design classroom, Chapter 5 analyses *how* these resources are deployed within the meaning-making trajectory of the spatial model project. Specifically, Chapter 5 traces the resources, that one student, Nadine, draws on, as well as *how these resources are used to move forward* through her meaning-making trajectory. The chapter contributes to an understanding of firstly, how a multimodal pedagogy may afford opportunities for generating emergent and transforming meanings within landscape design trajectories; and secondly, how these opportunities are ‘taken up’ by students.

Landscape architectural design processes are often not limited to one meaning-making moment, but a series of moments spread over a larger design trajectory. A design trajectory may be defined as an iterative set of meaning-making processes that respond to a particular set of prompts. For example, the City of Cape Town may approach a landscape architect to design a public play park. The design resolution takes a particular *direction* prompted primarily by the project brief, but could also be influenced by a guiding theme, for example. The landscape architect is unlikely to resolve all aspects of the design on their first attempt and may spend a few days or weeks or even months iteratively designing and redesigning until they have reached a satisfactory outcome. In design education contexts, this directed and iterative process of design may often be implicit. The spatial model project in the first year studio intends to explicitly simulate the design process in several ways: firstly, by encouraging students to follow a particular direction (by way of students' narratives) in the resolution of their designs; secondly, by deliberately requiring students to engage in iterative design trajectories

through building not one, but three spatial models; and thirdly, by introducing multiple modes through which this iterative design process may be directed. In light of these changes, this chapter investigates how different resources are 'taken up' at different moments, and how these resources are used to move forward in the design trajectory. In reviewing the data collected, Nadine's spatial model trajectory stood out in terms of comprehensive research documentation of her design trajectory. This offered an opportunity to analyse in-depth, how resources are deployed in order to move between modes and iterations of the design, as well as revealing the moments that prompt the unfolding of her spatial model project.

This chapter describes the trajectory of Nadine's spatial model project, from initial brief through to her final model. Throughout the chapter, Nadine's texts, presented in crit sessions as multimodal ensembles, are 'punctuations of semiosis' (Kress, 2010, p. 120) that provide insight into the types of resources she brings to her learning environment (see Image 5.1). Drawing

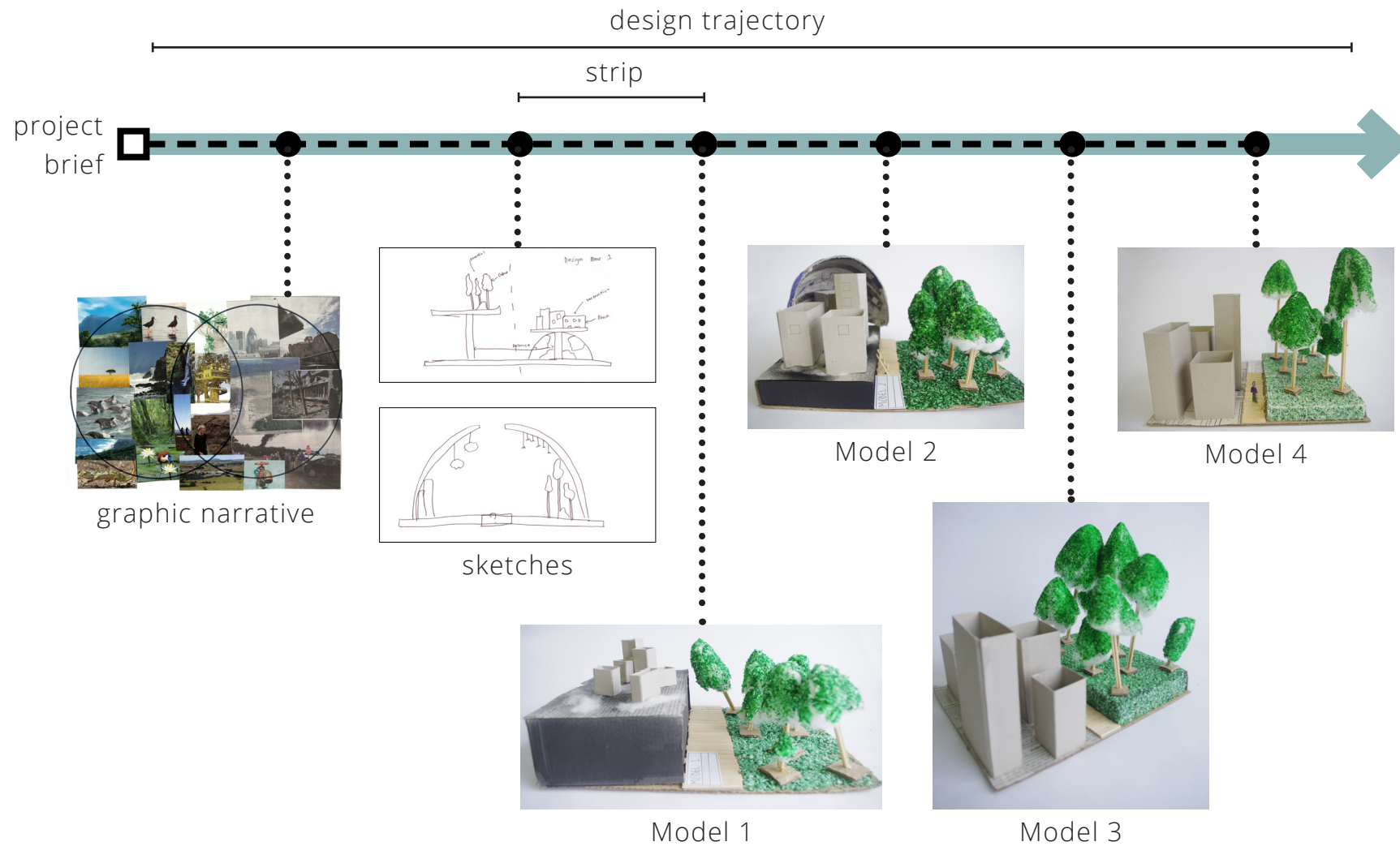


Image 5.1 Diagram of the primary texts or 'fixings' within Nadine's design trajectory

from Kell's (2015) methodology, the chapter traces the movement of these resources as they are mobilised and projected into subsequent strips of the meaning-making trajectory. Highlighting the moments of resemiotisation in Nadine's project shows the potential for a multimodal learning environment to open the possibilities for multiple views, transformation of meaning and the ways in which resources are realised. A multimodal approach to research and pedagogy can promote not only material and epistemological access to education, but also the understanding of the importance of access to diverse semiotic resources and practices within the landscape architectural classroom (Archer & Newfield, 2014, p. 4).

5.1 Drawing on resources to create the graphic narrative

Widening the project brief for students to choose their own narratives is aimed at increasing the range of resources students may bring into their landscape design processes. Nadine's choice in narrative is

prompted by her interest and that which she finds 'criterial' (Kress, 2010). Interest is not value-free, but is socially-shaped. This section analyses Nadine's graphic narrative, presented as a multimodal ensemble, and shows how Nadine's narrative is the realisation of conceptual, material, experiential, social, interactive and semiotic resources. The section firstly concentrates on the semiotic resources, and then the experiential and social resources she draws on to produce her graphic narrative.

5.1.1 Semiotic resources deployed in the graphic narrative

This subsection aims to make visible the semiotic resources that Nadine draws on to produce her graphic narrative (Image 5.2). Semiotic resources include ideational and interpersonal meaning potentials, both of which are realised through textual resources. Textual resources include non-material compositional resources as well as material physical resources (Bezemer & Kress, 2016, p. 16). Non-material compositional resources



such as *coherence*, *cohesion* and *salience* are present to some degree in every text and assist the viewer in understanding and interpreting the text. Because of this, the meaning potentials of Nadine's graphic narrative are analysed and interpreted through the degree to which coherence, cohesion and salience are expressed.

Coherence

Coherence is realised in the graphic narrative primarily through *sequence* and assists the viewer in understanding how Nadine's narrative unfolds. Nadine's graphic narrative (see Image 5.2) is A3 in size, in landscape format and is covered by a collage of rectangular images that have been cut from magazines and newspapers and pasted so that they overlap. Drawn on top of the collage, using a thick black marker, are two large, equally-sized circles that Nadine drew by tracing around a dinner plate (Personal interview, Nadine, 8 February 2018). The two circles resemble a Venn diagram. This abstraction frames and helps the viewer to organise the information in the graphic narrative.

Students were specifically required to choose and develop their own narrative as a prompt to their spatial model project as opposed to a single concept or event. In the brief given to students, there is a description of how narratives or stories include a series of unfolding events.

The general formula to a story is a character + a setting + a conflict + a resolution. Good stories contain something that happens ... that could cause a change. (Subject handout, Project one brief, see Appendix A)

Nadine's narrative includes a setting, a conflict and a resolution. Nadine's verbal description of her narrative draws on chronological sequencing and use of phrases that mark time. This is particularly evident in her description of the 'setting' of the narrative where earth or nature existed before people:

So **in the beginning** there was earth. And **then** we humans were placed on the earth to actually look after it and to live in one with the earth and nature. (Graphic

narrative and presentation, Nadine, 24 July 2017, my emphasis)

Her use of the term “but” moves the narrative into the next phase or ‘conflict’ of the narrative:

But us humans got destructive and greedy and just rude basically **and we started** fighting the earth. (Graphic narrative and presentation, Nadine, 24 July 2017, my emphasis)

In the visual mode, the sequence of the ‘setting’ and ‘conflict’ is realised through left-to-right positioning. Kress and van Leeuwen (2006) term this left-to-right layout *Given-New* (p. 179). The Given, on the left, represents something that is assumed the viewer is aware of and the New, on the right is that which is problematic or the issue at hand (Kress & van Leeuwen, 2006, pp. 180–1). This Given-New layout helps convey the ideational meaning of the narrative: that nature existed in a pristine form before people chose to destroy it.

The final phase of the narrative is the ‘resolution’ or call for change. In Nadine’s verbal presentation she repeats that we should find a way of living in harmony with nature:

So basically, nature and us, we are busy fighting each other, where **instead we should actually find the grey area**, which is compromise, and live with nature and we need to realise that without nature, we wouldn’t be. So instead of fighting nature **we need to compromise and find an in between**. (Graphic narrative and presentation, Nadine, 24 July 2017, my emphasis)

This ‘resolution’ is represented in the visual mode by the middle, overlapping portion of the Venn diagram. Because this middle portion is created in the overlapping of the two circles, the ‘logic’ of the sequence suggests that this portion must be ‘read’ after the two large circles. This unfolding of the narrative is reinforced through proportion: the area of the two circles is larger and signals to be ‘read’ before the ‘reading’ of the smaller, overlapping portion.

Cohesion

The graphic narrative achieves cohesion through textual resources such as *proximity*, *framing*, *similarity* and *materiality*. Cohesion is a conceptual resource that enables the viewer to understand the degree to which elements, within the overall composition, belong together, and which elements do not. The images in the graphic narrative, overlap. This close *proximity* of similar images helps to group them together, providing cohesion. For example, all the 'nature' images are grouped together on the left-hand side of the graphic narrative. Because all the images are connected and flow into one another, the two circles of the Venn diagram have been superimposed to help the viewer understand how to divide the images and reinforce this grouping which Kress and van Leeuwen (2006, p. 203) describe as *framing*.

The content of the images in the two circles make use of *similarity*. The images placed in the left-hand circle include mountains, birds, trees, the ocean, dolphins, a

waterfall, water lilies and a chameleon: the images are similar in terms of their content and location in natural areas. The similarity of images on the right-hand side is the antithesis of pristine nature: human-made objects, some of which suggest the 'destruction' in Nadine's verbal narrative. The combination of similar images within the circles provides the viewer with a strong sense of cohesion and framing in terms of the key features of the narrative: 'nature', 'destruction' and 'compromise'.

In terms of *materiality*, the images are all rectilinear and have been pasted with their edges roughly parallel to the edge of the page which serves to give the composition unity and cohesion. Nadine intentionally cut the images neatly (as opposed to tearing the images) because she did not want to distract the viewer:

I wanted to get that neat feeling behind it. [...] It makes it read better. [...] Because the tearing kind of, I don't know how to explain it, it takes your attention away from what you're actually looking at. (Personal interview, Nadine, 8 February 2018)

The degree of cohesion in the graphic narrative not only enables the viewer to interpret ideational meanings through compositional arrangement of elements, but also through interpersonal meanings such as affect and how viewers position themselves in relation to the images. The images in the collage represent an indirect 'offer' to the viewer, as objects for contemplation (Kress & van Leeuwen, 2006, p. 119). The exception is the image of the woman in the central portion of the collage whose 'demand' may cause the viewer to acknowledge the significance of the combination of natural and built elements. The graphic narrative constructs the viewer as active, providing clues but requiring the viewer to engage with the complexity of the graphic narrative. The pasted images, particularly those in the right-hand circle, may suggest the viewer's involvement or responsibility. In the visual mode, power and destruction are realised through the content of the images: the power of people to construct high-rise buildings and cities, to remove nature and to cause harm and pollution. Nadine verbally mediates the graphic narrative by using words such as "destructive", "greedy", "rude", "fighting", "build over" and

"hurt" to describe the effects of people's dominance over nature. In her verbal presentation, Nadine makes use of first person pronouns such as "we humans", "us humans". By using "we" in the verbal presentation, Nadine portrays herself and the audience as complicit in this power dynamic with nature. The representation of the complicity of viewers within the graphic narrative is more vague, although the use of newspaper clippings that portray common occurrences or everyday scenes could suggest that the viewer cannot claim to be oblivious to these events.

I have shown here how the effect of cohesion in the graphic narrative helps the viewer interpret information through proximity, framing, similarity and materiality. The degree of cohesion may also enable the viewer to align to a particular position in relation to the content of the images. One of the many ways the viewer interprets the argument of the graphic narrative is through textual resources that realise salience.

Salience

Salience signals to the viewer what is important or valued. The graphic narrative makes use of contrast to foreground the ideational meaning of conflict between nature and urbanisation: “nature and us, we are busy fighting each other” (Graphic narrative and presentation, Nadine, 24 July 2017). Contrast between the two circles is realised through textual resources such as *juxtaposition*, *texture* and *modality*. In images, argument can be established through the use of ‘difference’ (Huang & Archer, 2017, p. 64) or contrast (Archer, 2016, p. 101). While comparison looks for similarities and differences between elements, contrast challenges or juxtaposes ideas. Although the two circles in the graphic narrative are the same size and arranged symmetrically, the content of the images in each circle is contrasted: the ‘nature’ images depict diverse, natural environments with no representation of human involvement, while the ‘destruction’ images show constructed environments with limited natural elements.

The graphic narrative achieves contrast between the ‘nature’ and ‘destruction’ images through the use of *texture* as a resource. Djonov and van Leeuwen (2011) suggest that texture has two types of meaning potentials: provenance and experiential qualities, which are both “based on the link between production and meaning” (p. 546). Provenance is ‘where the signifier comes from’ (Kress & van Leeuwen, 2001). When presenting her graphic narrative, Nadine explains the provenance of her choice of material: “I took nature pictures from magazines where the paper is more glossy and colourful and I took pictures of the earth being hurt from newspapers because the newspaper isn’t as happy” (Graphic narrative and presentation, Nadine, 24 July 2017). The ‘experiential meaning potential’ (Kress & van Leeuwen, 2001) of texture is related to sensory and tactile surface texture (Djonov & van Leeuwen, 2011, p. 548). The differences in tactile surface texture between the rough newspaper images and the smooth, glossy magazine images reinforces the contrast between them. The provenance of the newspaper and magazine images conveys experiential and symbolic meanings.

Contrast is also established in the visual mode through the use of *modality*. As explained in Chapter 3, modality is a linguistic term that indicates how credible a text may be (Kress & van Leeuwen, 2006, p. 155). Modality is realised differently in different modes (Scollon & Scollon, 2014, p. 212) and 'what counts as real' depends on the domain (Kress & van Leeuwen, 2006, p. 163). Nadine's use of collage may draw on creative visual precedent, but she also draws on logical or mathematical visual precedent to produce a Venn diagram. Through doing this, she could be trying to position her argument as objective. The magazine images represent an idyllic version of reality and achieve a high modality in a realistic domain through high colour saturation and colour differentiation (Kress & van Leeuwen, 2006, p. 160). Because all images are photographs and mostly include a full and detailed background, the modality of their representation is high (Kress & van Leeuwen, 2006, p. 160). The newspaper images also have high modality, but in a journalistic domain, and aim to show a raw, candid version of reality. The lower colour saturation and colour differentiation of these newspaper images

support the journalistic 'feel' of these images. In an interview, Nadine described the differences between the modality of the images:

The magazines are [...] softer, it's a lighter approach to what is happening, whereas the newspaper is very hard and this is our reality right now. There's no hope, there's no future, this is what it looks like. Whereas the magazines, they say "yes, these things are happening, but if we look close enough we'll find the beauty in the mess". (Personal interview, Nadine, 8 February 2018)

In summary, the *argument* of the graphic narrative shows that human activity is not adequately protecting natural systems, but destroying them. There is a responsibility to establish ways of living that embrace nature. The ideational and interpersonal meanings of the graphic narrative are realised through textual means, through both material resources such as colour and materials, but also through non-material compositional resources such as coherence, cohesion and salience. The semiotic resources also point to other resources that may have

prompted the development of the graphic narrative, such as experiential and social resources.

5.1.2 Experiential and social resources that prompt design

Nadine's choice of narrative is prompted largely by her *interest* which is shaped by experiential and social resources. Her family home is located near a nature reserve and she has been exposed to an abundance of natural diversity. She has also witnessed the removal of a forest and the subsequent degradation of the environment. Significant people in her life such as her parents, uncle, lecturers and church leaders have contributed to shaping her values and attitudes towards nature. She has drawn on these values and attitudes in selecting and designing her graphic narrative. During her presentation, Nadine describes that her narrative was partly inspired by her experiences of loss of nature.

I selected the story based on personal experience. I live in Zeekoevlei, which is just behind Pelican Park [...] there

used to be this forest [...] and it was beautiful and they've cut it down and it's become RDP houses. And it was sad for me because we drove past it every night when it was dark but it was beautiful during the day because it was just trees. (Graphic narrative and presentation, Nadine, 24 July 2017)

In a later interview, Nadine gives more detail about her experiences growing up near a nature reserve. Nadine's family home is on the edge of Zeekoevlei, a wetland and nature reserve. She recollects several encounters of various animals in her garden, including chameleons, snakes, a porcupine and once even a hippo that had escaped the nearby vlei (wetland) and was walking down the road (Personal interview, Nadine, 8 February 2018). She admits that this context may have played a part in the inspiration behind her narrative.

I actually don't know how I came to that specific idea but I think it stemmed from I stayed, where I stay in Zeekoeivlei. (Personal interview, Nadine, 8 February 2018)

Nadine's parents, particularly her step-father, also seem to have played a large role in establishing an attitude that values and cares for nature.

From young we were told that wildlife is very important and you just have to embrace it because we are staying on the earth, the earth is not staying with us. (Personal interview, Nadine, 8 February 2018)

Nadine mentions that she studied civil engineering for two years before landscape architecture. She suggests that the primary reason she left the civil engineering course, was due to a conflict between what she was told by her lecturer, and her own personal beliefs about the value of the environment.

So, in one of my classes [in] my second year, we were chatting about the foundation of your whole building and how you have to go onto site and literally bulldoze all the land that was there, and he said any vegetation has to be taken out. And then I asked him, "Can't we move the

vegetation to somewhere else to be planted somewhere else?" And he said that was "so much money that people don't do that anymore, we just destroy and build up". And I challenged him, "but that's not right because we need oxygen and all of that". He said, "look here sweetie, if that's what you're thinking about, you're in the wrong business because your name is on that card that goes up." (Personal interview, Nadine, 8 February 2018)

According to Nadine, she made the decision to leave civil engineering studies after seeing a large development being constructed over a wetland in Kuilsriver: "and that's when I realised, no, it's not going to work. And my mom then suggested horticulture, because my uncle is a horticulturist" (Personal interview, Nadine, 8 February 2018).

Nadine's narrative may also have connections to the biblical idea of environmental stewardship. Some phrases in Nadine's verbal presentation have similarities to biblical scripture such as "So in the beginning" (Graphic narrative and presentation, Nadine, 24 July 2017). While

this is not an uncommon phrase and is used in secular contexts, in an interview with Nadine she does mention “I did drama at church” (Personal interview, Nadine, 8 February 2018). The possibility that her narrative is influenced by biblical discourse is reinforced through two other phrases she uses: “and the fullness of it” (Graphic narrative and presentation, Nadine, 24 July 2017) perhaps relating to “*The earth is the Lord's and the fulness thereof*” (Psalm 24:1, King James Version); and “placed on the earth to actually look after it” reflects ideas in “*...so that they may rule over the fish in the sea and the birds in the sky, over the livestock and all the wild animals, and over all the creatures that move along the ground*” (Genesis 1:26, New International Version). This biblical discourse could be one of the resources that Nadine draws from in realising her narrative.

In addition to influencing Nadine's values for nature and her studies, her parents also provide input into the design of her graphic narrative and access to material resources. Nadine mentions that her mother suggested that she use the newspaper images to make her collage:

It was very funny actually because I was looking through the magazines for these [*taps destruction images*] pictures and then I told my mom that we don't have bad magazines and it's a problem. I need doom and gloom and then she said the newspapers are doom and gloom and that's sad because that's where we are heading to, just doom and gloom. (Graphic narrative and presentation, Nadine, 24 July 2017)

I have shown that Nadine's graphic narrative is realised through the range of resources and contexts that she drew on in the process of meaning-making. The narrative itself may be shaped by the environment in which she grew up, personal experiences of environmental degradation and environmental values imparted to her by her parents, uncle and through her church community. Apart from access to social resources such as being able to discuss design ideas with her mother and living at home, Nadine also has access to material resources such as newspapers, magazines and dinner plates. The value of this personal connection to her narrative may contribute to the way in which Nadine

takes up resources to move forward in her design trajectory. Providing moments for students to bring their own interests into the landscape classroom may be an important aspect of developing multimodal pedagogies for diversity.

5.2 Resemiotising resources from graphic narrative to sketches to Model 1

This section examines how Nadine mobilises resources to move from the graphic narrative to a three-dimensional model. In tracing these movements, this section focuses firstly on Nadine's development of five themes from her graphic narrative, and secondly, on the two sketches she produces before her first model. The way in which this section frames these movements draws on what Kress (2014a, p. 139) describes as an 'inner conception' that precedes design, as well as Newfield's (2014) 'transmodal moment'.

Kress (2014a) describes how design or meaning-making may be preceded by an 'inner conception' (p. 139). This 'conception' may remain internal or it may be realised and given 'external' material form and shape. Kress (2014a) suggests that "the act of giving the design material form, or producing it, makes the re-design available for potential use in others' re-design" (p. 137). While this connects to the landscape architectural design concept of precedent, what is useful for this chapter is how this inner conception, realised in material form, may prompt a change to the inner conception and re-design in the same designer's unfolding trajectory. Newfield (2014, p. 103) has shown how a 'transmodal moment' modifies meaning from one text to the next in a meaning-making trajectory.

The transmodal moment is the moment of modal shift between texts realised in different modes in a chain of semiosis. It refers to the external manifestation of semiotic consciousness, the realisation of an idea in a new or different mode from that in which an idea was originally encountered, what might be called the

'translation' of that idea into a new or different mode.
(Newfield, 2014, p. 103)

It is possible that these 'transmodal moments' prompt an inner reconceptualisation of the meaning-making within a trajectory, which then prompts transformation of resources in future moments or 'strips' (Kell, 2015) within the design trajectory. In moving from her graphic narrative to her first model, Nadine makes two significant moves: firstly, she explicitly 'takes up' interactive resources from the crit discussion around her graphic narrative; and secondly, she also makes use of the affordances of section sketches as a stepping stone to building her first model. These sketches comprise a 'transmodal moment' that prompts new conceptualisations and redesign of her models.

5.2.1 Taking up interactive resources from the group discussion

Nadine's narrative was initially an inner conception, which she realised graphically and represented as a

multimodal ensemble. The previous section highlighted how the affordances of the visual and verbal modes contributed to the construction of the argument of the graphic narrative. This subsection shows how the group discussion re-represents the graphic narrative as five words or themes. Summarising and abstracting Nadine's graphic narrative into five words or themes may have prompted inner reconceptualisation of her narrative and subsequent mobilisation of resources within her meaning-making trajectory. Some of these words can be traced to different moments and 'fixings' (Kress, 2010) within Nadine's design trajectory.

The selection of five themes from the students' graphic narrative was a deliberate activity which we included in the instructions for the group discussion of the graphic narrative. The initial rationale behind selecting five themes is to assist students in identifying and abstracting key elements from the narrative. Selecting five themes, compared to selecting one or two themes, is intended to enable a degree of complexity within the students' narrative. Alon-Mozes (2006, p. 32) made a

similar observation on the use of narrative in a second year landscape architectural design studio: students could choose one of three poems to study in depth and then were required to develop five central themes that they could use to develop their landscape architectural designs.

After the graphic narrative presentation, the crit group assists Nadine in selecting five words describing key themes in her graphic narrative. She writes these words down on her presentation comment sheet. While Nadine herself identifies the themes 'peaceful' and 'destructive', three other themes emerge from other participants in the group discussion: 'diversity', 'contrast' and 'balance'. Because the viewers of Nadine's graphic narrative each engage in a different interpretation, the 'inner conception' they develop sometimes results in a different realisation of themes. This group discussion of the five themes is therefore a useful resource in providing Nadine with an opportunity to reconceptualise her graphic narrative as she moves forward in her meaning-making trajectory.

The different affordances of the verbal and visual modes of the multimodal ensemble contribute differently to the types of themes that can be taken forward into the meaning-making trajectory. The verbal narrative on its own may have generated themes such as 'peaceful', 'destructive' and 'balance'; but the visual resources of the graphic narrative prompted the selection of themes such as 'diversity' and 'contrast'. For example, the theme 'destruction' is evident in Nadine's verbal presentation:

But us humans got destructive [*gestures to right side of graphic narrative*] and greedy and just rude basically and we started fighting the earth. (Graphic narrative and presentation, Nadine, 24 July 2017)

This theme may have been part of Nadine's inner conception of her graphic narrative as she has used images showing 'destruction' and has explicitly mentioned this in her presentation. This can be compared to the themes of 'contrast' and 'diversity' that were suggested by participants in the discussion group. While evident in Nadine's graphic narrative, these two themes were

not explicitly referred to in her verbal presentation. It is possible that the viewing of Nadine's graphic narrative has prompted an interpretation or 'inner conception' within members of the discussion group, who express this through their verbal suggestion of the themes 'contrast' and 'diversity'. This 're-conception' is now available for Nadine to take forward into her meaning-making trajectory. During a crit discussion on her sketches, Nadine says

Okay, so I was throwing some ideas around together and these themes actually really helped me to decide what I'm actually going to do with my model. (Sketches crit, Nadine, 31 July 2017)

It is thus clear that the affordances of the visual mode elicited meanings, such as 'contrast', that may not have been apparent in the verbal mode. In writing the five themes on her comment sheet, Nadine 'fixes' these linguistic resources and shows that she takes up resources from the crit discussion to move forward in her design trajectory.

5.2.2 Mobilising resources through the affordances of sketches

Between the graphic narrative presentation and first model, Nadine develops two sketches of ideas that she brings to an informal crit or discussion. This was not an explicit requirement in the students' project trajectory. The affordances of sketching provide several opportunities that enable Nadine to move forward in her trajectory. Firstly, the sketches represent a 'transmodal moment' (Newfield, 2014) where meanings from the graphic narrative and discussion are re-conceptualised and re-presented as sketches in the visual mode. Secondly, sketches are quick to produce (compared to models) and allow for experimentation. Thirdly, Nadine has drawn her sketches in two dimensions, as sections, providing a stepping stone between the abstraction of the graphic narrative and the three-dimensional spatial model.

The project brief did not formally require students to engage in sketching activities beyond the graphic

narrative, but Nadine took the initiative to do so. Both sketches were drawn in pencil, in landscape format, on lined paper. The original sketches were drawn in pencil and consequently are faint and difficult to read when digitally scanned. The images included here are tracings of the sketches, drawn in black pen. The sketches provide an opportunity to study the movement and resemiotisation of resources as Nadine moves from two-dimensional to three-dimensional representation.

The first sketch is labelled on the top right of the page "Design idea 1" (see Image 5.3). The sketch is a 'side view' or section. Although it is a two-dimensional drawing, it represents an idea that could exist in three-dimensions. The sketch shows a base platform with two separate, raised platforms that appear to each be supported by a single, central column. The platform on the left is raised higher than the one on the right and supports three trees on a mound or berm. The lower platform supports a representation of a city or urban space. Below this platform is a representation of half a sphere of the Earth. Two arrows with the words 'colour'

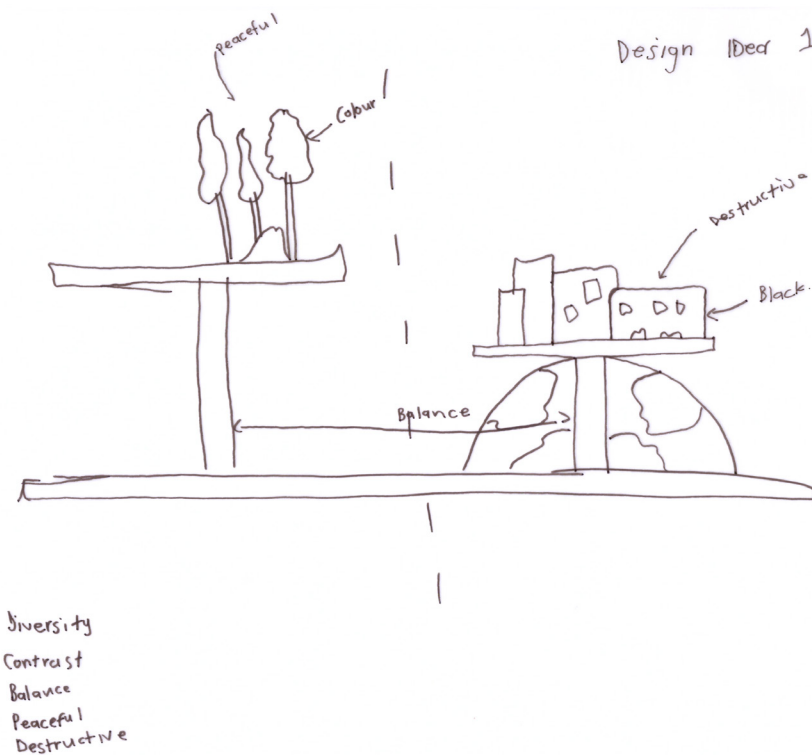


Image 5.3 Nadine's Sketch 1 (31 July 2017)

and 'peaceful' point to the platform on the left, while two arrows and the words 'destructive' and 'black' point to the lower, right-hand platform. A double-headed arrow with the word 'balance' connects both columns of the two platforms. The five themes that were identified at the end of Nadine's graphic narrative presentation have been written at the bottom left-hand corner of the image: diversity, contrast, balance, peaceful and destructive. This shows that Nadine is deliberately choosing to draw on the resources generated through interaction in the graphic narrative discussion.

Nadine's explanation of Sketch 1 provides insight into how she reconceptualises resources from her graphic narrative. In her graphic narrative presentation she speaks about 'compromise' or 'balance' which she represents visually as the overlapping portion of a Venn diagram. In Sketch 1 this notion of 'balance' is reconceptualised and realised in terms of 'scales of justice'.

So the first idea that I had was kind of like the scales of justice type of thing for balance – to represent balance whereas, like obviously if something is lowered, it means it has more worth. So, in the human mind-set, buildings and destruction have more worth and what it's actually doing is diminishing the earth. That's why I've got the earth underneath it and all the while, the value of the nature is diminishing, whereas that is increasing when it actually shouldn't be higher. (Sketches crit, Nadine, 31 July)

This discussion demonstrates how *material* resources can be resemiotised to *non-material* resources and vice versa: the Venn diagram, as a *material* representation, is resemiotised into the *non-material*, abstract concept of 'balance' which is then resemiotised into a different *material* representation as 'scales of justice'.

The second sketch (see Image 5.4) drawn on the same day is labelled "Design 2" in the top-right hand corner. It is also drawn in section and depicts a dome that has a central opening. Inside the left side of the dome,

rectangles (representing buildings) have been drawn; and representations of clouds 'hang' from the 'sky' or dome. On the right-hand side, Nadine has drawn trees with representations of birds 'hanging' from the dome. In the middle of the floor of the dome is a sunken area with a question mark. Nadine explains her sketch:

So, I'm thinking, maybe like have a dome shape [...] with a cut through the middle. So the one side will be the destruction and the other part would be like the nature and in the middle will be nothing because we haven't found the middle ground just yet. (Sketches crit, Nadine, 31 July)

Moving from Sketch 1 to Sketch 2, Nadine repeats the use of representations of 'nature' as trees and 'urbanisation' as buildings (in fact as we shall see later, these representations are carried through to her models). The representation of 'balance' changes from the scales of justice in Sketch 1 to the 'missing middle ground' in Sketch 2. Both these ideas are later realised in Nadine's models.

Design: 2

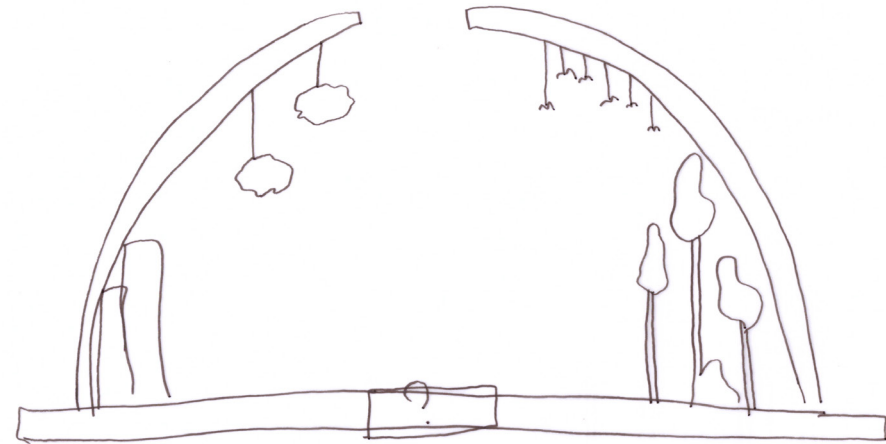


Image 5.4 Nadine's Sketch 2 (31 July 2017)

Nadine's sketches demonstrate resemiotisation in her design trajectory and represent the materialisation of re-design as a result of a reworking of an 'inner conception' of the narrative. Sketches are often drawn by designers as part of their design process (van Dooren et al., 2013, p. 67). Sketches may prompt a reconceptualisation of a design because they are able to function as an extended memory, externalising the designer's choices so that they can reflect on their implications (Suwa & Tversky, 1997, p. 385; van Dooren et al., 2013, p. 67). Sketches can show spatial relations but can also represent non-visual information such as functional relations (Suwa & Tversky, 1997, p. 388): "Design-drawing exercises 'draw out' and 'draw upon' memories - memories that are visual, spatial and design-related" (Smith, 2017, p. 23). Because Nadine has drawn her sketches in section, she is able to show differences in vertical elevation, representing different spatial and conceptual meanings that could be developed into a three-dimensional model. There is a clear shift from the abstract themes generated from the graphic narrative to the two dimensional sketches. In addition to her own 'inner conception' or

'conversations with the drawing' (Lawson, 2004, p. 90; Schön, 1987), Nadine brings her sketches to an informal crit discussion, generating additional moments for reconceptualisation. While Nadine's sketches are fixed in the flow of semiosis (Kress, 2010), they represent a process of experimentation and are not end-products. Instead of analysing the sketches as end-products, the sketches can be understood as stepping stones, 'testing out' projections of imagined models. These sketches provide insight into the moves Nadine makes from the graphic narrative to the model.

5.2.3 Resources 'taken up' to realise Model 1

Nadine's Model 1 (see Image 5.5), produced three days after the sketches, comprises two sections, 'nature' and 'urbanisation', separated by a path. The 'urbanisation' section is represented by a rectangular cardboard box. The sides of the box are spray-painted black. The top of the box is covered by newspaper that is lightly spray-painted black. Hollow, grey cardboard boxes of varying



Image 5.5 Nadine's Model 1 (2 August 2017)

sizes, representing buildings, are constructed and glued to the top of the black box. Light drifts of cotton wool are also attached to the newspaper on top of the box, which Nadine explains in the final presentation: “it was supposed to seem like fog or like smog” (Final presentation, Nadine, 30 August 2017). The ‘nature’ section is represented by eight trees of slightly different sizes. The tree canopies are made from cotton wool coated with desiccated coconut that has been dyed using green food colouring. The stems of the trees are each made of four skewer sticks glued together and attached to a square corrugated cardboard base. The ground plane below the trees is also coated in green coconut. The central pathway between the ‘urban’ and ‘natural’ areas is made from ice-cream sticks cut to the same width and glued next to each other.

The following discussion traces how four of the five themes generated in the graphic narrative discussion, ‘peaceful’, ‘destruction’, ‘contrast’ and ‘balance’, are resemiotised and realised in Model 1.

Resemiotisation of ‘peaceful’ and ‘destruction’

The spatial model project requires students to design a model that could convey a particular experience. Nadine draws on *affect* as a resource to resemiotise the themes of ‘peaceful’ and ‘destruction’ from her graphic narrative. Nadine’s use of affect may be shaped by the choice to represent themes as the adjectives ‘peaceful’ and ‘destruction’. If nouns such as ‘nature’ and ‘urbanisation’ had been chosen, perhaps the models may have been realised differently. Affect can be analysed by asking ‘how does this text make me feel?’ Affect, in this research, includes both internal responses to the text in terms of impression, sense of place, or belonging; as well as responses to external stimuli such as human scale, Stenglin’s (2008) Binding continuum and microclimate.

An *impression* or sense of ‘peacefulness’ can be traced from the representation of nature in the graphic narrative to the sketches and the model. When discussing the five

themes in her narrative, Nadine chooses to use the word 'peaceful' as the theme describing nature. Nadine is possibly drawing from her own experience of nature as well as perceptions that people feel calm and content in nature. The images in the graphic narrative do suggest 'peacefulness': images such as the ocean, waterfalls and forests can be associated with recreational or leisurely activities. Instead of trying to represent physical aspects of nature, Nadine re-represents the feeling of peacefulness in her sketches and models. This is a notable move in Nadine's trajectory as she is translating aspects of her narrative into potential user experience, aligning with the pedagogical aims of the project brief: to design a spatial experience. Drawing on resources that realise affect, means that from early on in her design trajectory, Nadine focuses on how to design a space where a user may experience or feel a sense of peacefulness. In Sketch 1, a label with an arrow and the word 'peaceful' points to a group of trees and a berm. In choosing to resemiotise 'peaceful' by representing trees, Nadine is possibly drawing on her personal experience of forests and natural areas near her home.

The use of trees in creating a space that feels 'peaceful', may be linked to the noise-dampening effect of forests or the use of trees and berms as noise barriers. There is a clear connection from the graphic narrative to the sketches to Model 1 where a group of eight trees in a lawned area realise a space in which a user may feel peacefulness.

The use of *colour* and *texture* may also realise affect, the way a user may feel towards a text: "texture summons us to identify with the experiential rather than merely symbolic implications of its manifestations" (Aiello & Dickinson, 2014, p. 309). The resemiotisation of 'peaceful' and 'destruction' in terms of colour and texture can be traced from the graphic narrative through the sketches to Model 1. The 'peaceful' or 'nature' images of the graphic narrative comprise glossy textures and bright, highly saturated colours such as blues, greens and yellows. The colour of the newspaper images representing 'destruction' in the graphic narrative, have a rough, grainy texture and include grey and dark colours with low saturation. Although her sketches are

in pencil, Nadine has taken up these colour choices and has labelled the trees 'colour' and the buildings 'black' (Design sketch, Nadine, 31 July 2017). In the first model, the theme of 'peaceful' in model 1 has been represented by a group of trees and a lawned area. The high saturation of colour from the graphic narrative has been carried through to Model 1: Nadine dyed dessicated coconut with bright green food colouring and used this to construct lawn and tree canopies.

In terms of representing 'destruction' in Model 1, Nadine uses rough, grey cardboard to construct representations of buildings in a city. The buildings are sitting on a raised box that Nadine spray-painted black. The top of the box is covered with newspaper that had been lightly spray-painted and drifts of cotton wool that represented smog are also attached. During her final presentation, Walter asks her why she used newspaper in underneath the city and Nadine replies "It goes back to my poster" (Final presentation, Nadine, 30 August 2017), referring to an earlier conversation where she explains: "So for the nature pics I took the pictures out

of a magazine because it's more glossy and colourful and it shouts at you, whereas a newspaper [...] I took a more drab and boring and destroyed kind of thing" (Final presentation, Nadine, 30 August 2017). The lightly spray-painted newspaper and smog reflect the graininess of the newspaper images in the graphic narrative. The rough texture, colour range and lower colour saturation of the graphic narrative is being resemiotised in Model 1 through similar use of materials and textures. Nadine's innovative use of texture highlights the diversity of resources and meanings they expressed, that may have been excluded, if the model brief permitted only monochromatic building materials.

Resemiotisation of 'contrast'

Nadine's graphic narrative includes a conflict between people and nature, that is revealed through the use of *contrast*. Contrast as a conceptual structure is a strong visual feature that is resemiotised from the graphic narrative to Nadine's sketches and her models. Nadine makes use of *symmetry* and *juxtaposition* to show

contrast in the graphic narrative, sketches and model, but in each text, these are conveyed differently. Image 5.6 shows how the overall structure of the graphic narrative, sketches and model make use of symmetry: each layout is divided into two halves with an imaginary, central axis (shown in the figure as a dashed line). The position of the contrasting elements are arranged symmetrically in relation to this central axis: the graphic narrative comprises two equally-sized, overlapping and symmetrically-arranged circles; Sketch 1 shows two platforms rising from positions equidistant from the central axis; in Sketch 2 a dome is divided into two equal parts; and Model 1 when viewed in plan, from above, shows two areas of the same size and symmetrical positions.

Despite the symmetrical arrangement or position of elements relative to the graphic narrative, sketches and model, there are differences between the two halves. This use of asymmetry results in a *juxtaposition* and contributes to the meaning of contrast. In the graphic narrative, the overall composition is symmetrical

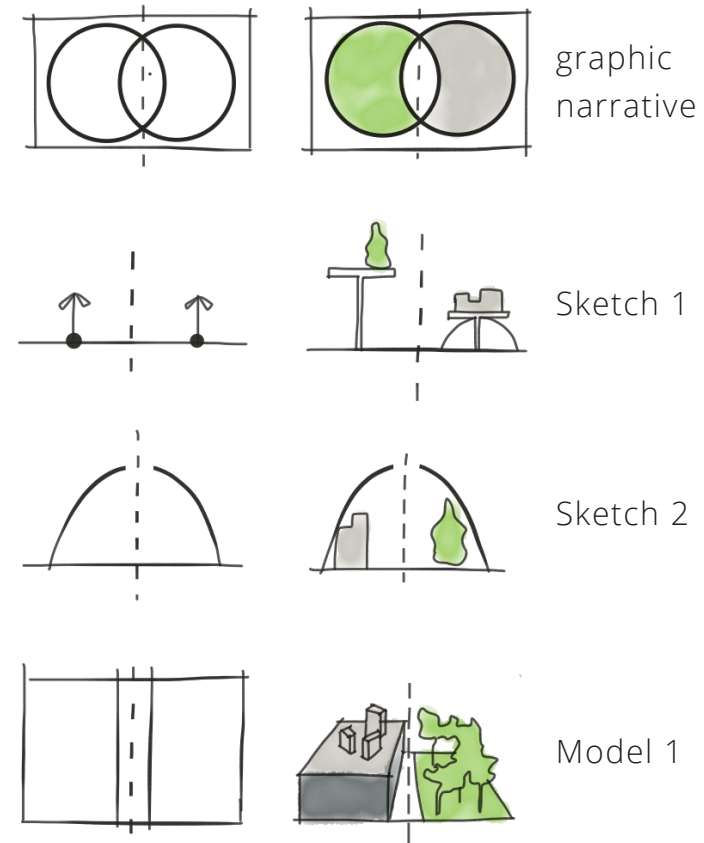


Image 5.6 Tracing the use of symmetry and asymmetry through the graphic narrative, sketches and model. The diagrams on the left show what is similar or symmetrical, the diagrams on the right highlight the differences or use of asymmetry.

but differences in content, modality and texture are asymmetrical. The two sketches and model also include asymmetrical differences in content, colour and materials. Additionally, Sketch 1 and Model 1's asymmetry is emphasised by differences in elevation. The juxtaposition in the graphic narrative, sketches and model represent nature and urbanisation as separated and discrete. This juxtaposition and separation of 'nature' and 'urbanisation' emphasises Nadine's call for 'balance' or the 'missing middle'.

Resemiotisation of 'balance'

In Nadine's graphic narrative presentation she highlights that there is a conflict between nature and urbanisation and that a compromise needs to be found. As mentioned earlier, in a discussion about the themes in her graphic narrative, the word 'balance' is introduced.

Christine: [...] Okay, let's help her think of three more themes. [...] What do you think?

Nadine: 'Compromise'? Could that be a thing?

Christine: Yeah, I think so, or like 'balance'. (Graphic narrative presentation, Nadine, 24 July 2017)

Underlying this discussion is an agenda in landscape architecture to protect the environment, because natural systems sustain human life in terms of oxygen, clean air and water, food, transportation, materials for manufacturing and construction, medicine and psychological well-being. Without these natural systems, human life would cease to exist. On the other hand, dignified human life is also a priority. To use the example in Nadine's narrative, a forest is lost in order to provide housing for people to live dignified lives. Nadine's narrative is asking the question: to consider the balance between urbanisation and nature, particularly when people are "greedy" and "rude" (Graphic narrative presentation, Nadine, 24 July 2017), living excessively, beyond their 'fair earth share'. Compromise suggests losing something, whereas balance suggests that human behaviour could be moderated to be in tune with natural systems.

As discussed in the previous section, Nadine's concept of balance is resemiotised from the graphic narrative as a Venn diagram to 'scales of justice' and 'missing middle' in the two sketches. Both these interpretations of 'balance' have been resemiotised into Model 1. The different levels of the 'scales of justice' in Sketch 1 have been reconceptualised in the model through a raised platform: initially the 'urbanisation' space is raised but this changes as Nadine's design trajectory develops. The concept of the 'missing middle' is resemiotised in Model 1 as a central pathway. The path has been constructed deliberately so that there is nothing above it: "we haven't found the middle ground just yet. That's why there's nothing on top of it [the path] or over it or inside of it" (Model 1 group discussion, Nadine, 2 August 2017).

Through an analysis of the resemiotisation of Nadine's trajectory from graphic narrative to sketches to Model 1, I show how she mobilises interactive and modal resources to move forward in her design trajectory. Nadine actively chooses to use the five themes generated

from the crit discussion: she writes the themes down in her comment sheet but also depicts these themes in her sketches. Nadine demonstrates initiative in her decision to produce sketches and to seek out crit discussions relating to the sketches. Her engagement in experimentation, in producing two different sketches, shows multiple points of reconceptualisation of her narrative and contributes to moving her design trajectory forward.

5.3 Resemiotisation of the narrative as a spatial experience in Model 2

The model brief (see Appendix C) given to students at the beginning of the project suggests that the spatial models are a scaled version of a full-scale installation in a public park such as Green Point Urban Park. One of the assessment criteria for the students' spatial models, therefore, includes the development of a *spatial experience* for a hypothetical user. When Nadine presents her first model, the crit discussion reveals a concern

that her Model 1 had not considered the human scale and spatial experience. The 'urbanisation' space of the model was on a raised platform too high to be accessed by a person and could not therefore be experienced by users who may visit the imagined installation. Prompted by this discussion, Nadine addresses these concerns in her Model 2. Nadine also makes use of Model 2 in the chalk drawing activity (see Image 5.1 for the location of Model 2 in Nadine's trajectory). Her video narrative and Facebook blog reflection of the chalk drawing activity provide an opportunity for her to explore and critique her intended spatial experience. The following section unpacks this spatial experience in terms of the meanings that have been expressed and resemiotised thus far in her design trajectory.

This section investigates the resemiotisation or transformation of Nadine's narrative into an imagined spatial experience as realised through her second model and 1:1 chalk drawing. This section traces how Nadine's concepts or themes within her narrative have been resemiotised not only into 3D spatial form, but

how the meanings of the narrative can be understood by users through the spatial experience of the model. Nadine's model-as-projection conveys its meaning for the imagined users of the installation through the way in which they may experience and interact in the spaces. This is a significant step in the development of Nadine's design trajectory, as spatial experience is one of the assessment criteria for the project.

Nadine's Model 2 (Image 5.7) is a development of Model 1, adjusted to take into account human scale and spatial experience. The central pathway and the separation of the model into two spaces, urban and nature, is carried through from Model 1. The path makes reference to the idea of compromise in the narrative. The urban area is raised on a solid black box, but it is lower than that of Model 1, and includes a ladder for access. The buildings have been made larger and taller. The footprints of the buildings are aligned and rectangular. Squares and rectangles represent order and human construction (Kress and van Leeuwen, 2006, p. 54). Compared to the hard lines and angles of the urban space, the shape of the

tree canopies are softer and more rounded. The trees are not all the same height and are randomly arranged on the lawn. This lack of order, compared to the urban space, highlights the organic aspects of nature. Nadine has made use of the same materials as Model 1: the urban space is made using rough, grey cardboard, black spray paint and cotton wool. The nature space is again made from dyeing coconut a vibrant green colour. Apart from the change in scale of the urban space, another difference between Model 1 and Model 2 is the addition of a papier-mâché dome that has been placed over part of the urban space. The inside surface of the dome reveals it has been made from newspaper. The outside of the dome is painted blue. There is a link between the three dimensional dome in Model 2 and the dome that Nadine drew in her second sketch.

Nadine's Model 2 is a scaled projection of an imagined installation in an urban public park such as Green Point Urban Park and is intended to be used by visitors to the park. The meanings of Nadine's narrative are conveyed to users through their *spatial experience* of



Image 5.7 Nadine's Model 2 (7 August 2017)

the installation. Nadine explains her intentions for the overall experience: “the primary spatial experience is one of - you’re contemplating – like, what are we doing to the earth” (Model 3 peer review, Nadine, 16 August 2017). The following subsection analyses Nadine’s Model 2 in terms of its projected installation and the intended spatial experience of the user in terms of interpersonal meanings, including *interaction* and *affect*.

5.3.1 Resources that realise interaction

Interaction is the extent to which users may interact with each other, as well as with the spaces or forms within the text. The type and degree of interaction in Nadine’s Model 2 is achieved through resources such as *control* and *social distance*.

Control

Control is the degree of access and freedom of movement of users in a space (Ravelli & McMurtrie, 2016, p. 60). Some of the meanings of Nadine’s narrative are

expressed in Model 2 through control, the way in which users may access and move around the installation. Image 5.8 shows that access to the ‘nature’ space has minimal control as users may access this space from any point along its perimeter. Nadine explains that “the nature side is on the ground [level] so it’s easily accessible so it represents being able to get into nature” (Chalk drawing video, Nadine, 7 August 2017). Although it is possible that users may access the project from any point on the ‘nature’ side, in terms of *coherence*, the wide, central path may signal an entry point to users. Because of its elevated ground plane, access to the ‘urbanisation’ space is limited: entry can only be gained via the ladder. The experience of climbing the ladder symbolises effort “I made it a ladder to represent effort because we put effort into making the world the way it is” (Chalk drawing video, Nadine, 7 August 2017). Nadine imagines that the users will enter the site from the central path and then may choose to step on the grass and meander between the trees before climbing the ladder and moving between the buildings. There are no fixed routes: users in either the ‘nature’ or ‘urban’ spaces can

choose how they explore and experience the spaces. As a result of the range of movement of users, both urban and nature spaces could be considered heteroglossic and dialogically expansive (Ravelli & McMurtrie, 2016, p. 75): users are able to access all spaces and can choose how to move through the different spaces. The minimal control imposed may be a reminder that in the same way that users are able to choose the degree of *spatial engagement* with the installation, they can choose to acknowledge their complicity and responsibility for environmental degradation.

Social distance

Social distance is the extent of interaction between users of a text or between users and represented participants of a text (Kress & van Leeuwen, 2006; Ravelli & McMurtrie, 2016). Social distance in Nadine's Model 2 is related to the visual permeability of the different spaces (see Image 5.8). In the 'nature' space, the tree stems are the only source of visual obstruction, ensuring high *visual permeability* for users as well as 'intimate' social

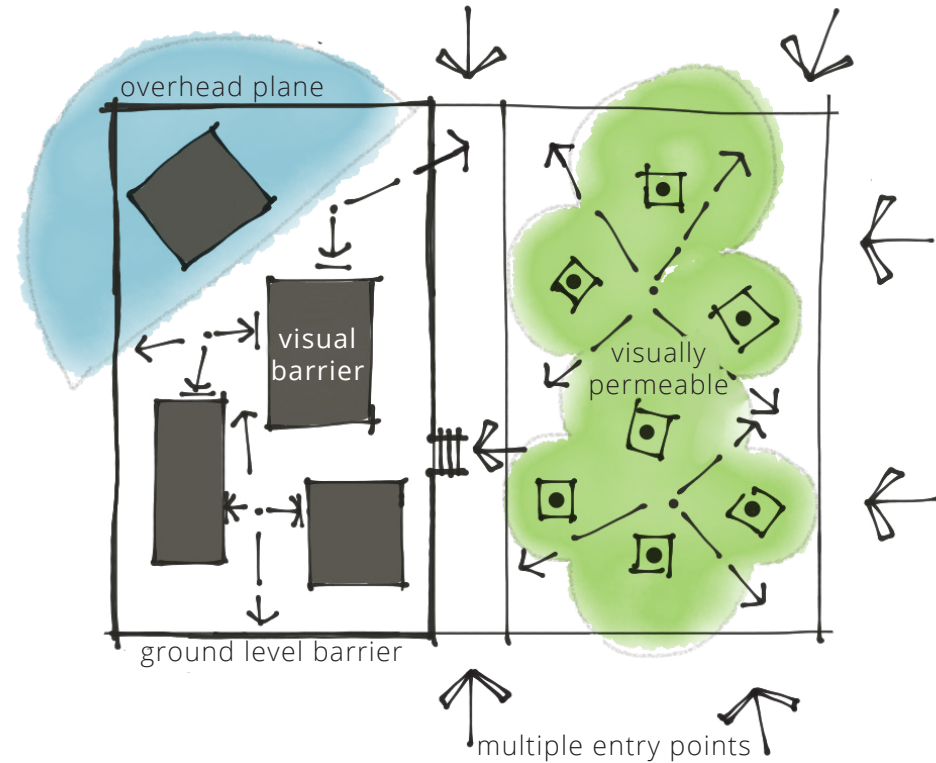


Image 5.8 Diagrammatic analysis of Nadine's Model 2 showing access (large arrows), movement routes (dashed arrows), figure ground, sky planes and visual permeability / barriers

distance. This enables users to engage in a range of social activities that require personal distance, such as a conversation, as well as activities such as picnics or games where social distances are required. In contrast, the urban space comprises narrow spaces between buildings with limited visual contact. The scale of the buildings and lack of access also establishes a 'public' social distance between the users and the text. Users are more likely to feel more isolated in the urban space and are limited in terms of the social distances and range of possible activities, compared to the nature space where there is a high potential for users to interact. While interpersonal resources such as interaction can be realised in spaces other interpersonal resources such as affect can be realised through comfort and Binding.

5.3.2 Resources that realise affect

Affect is an interpersonal resource that considers how a user may feel in a text, in terms of impression or physiological comfort, as well as how connected users may feel towards the text or other users in the space.

The use of affect in Nadine's second model is realised through *comfort* and Stenglin's (2008) *Binding continuum*.

Comfort

In landscape architecture, *comfort* can be related to how content a person may feel in a space. In Model 2, user comfort may be determined by *human-scale*, *texture* and *microclimate*.

Comfort may be realised through how forms and spaces may or may not relate to the human scale. Because Nadine's model was constructed to a scale of 1:50, the size of a person can be interpolated. In the 'nature' space, while the trees are taller than the users, the tree canopies are above head height, mitigating the differences in scale. Conversely, the forms in the urban space do not attempt to relate to the scale of the user: the buildings are tall and the walls are sheer, increasing the sense of scale through the vertical angle. The addition of the dome also contributes to the urban space feeling more imposing. This use of power in Model

2 emphasises the differences in how users may relate to the two spaces: the nature spaces relate more to the human-scale when compared to the urban spaces that may be imposing and uncomfortable.

The nature area in Model 2 has been designed to increase the comfort of a user: on a sunny day, users may feel “warm and cosy” (Chalk drawing video, Nadine, 7 August 2017), but the tree canopies will shade the user from exposure to direct sunlight. The trees and the lawned surface will additionally cool the space through transpiration. Lawn is a soft material on which users may feel comfortable to sit and picnic. The comfort of the user in the nature space contrasts to the urbanisation space, where it has been designed to make the user feel uncomfortable. Even access to the ‘urbanisation’ space is not comfortable: it must be accessed by climbing a ladder. Once the user has reached the urban space, there is nowhere comfortable to sit or rest. On a sunny day there would be no protection from the sun, except for beneath the dome. Compared to the cooling effect of vegetation in the ‘nature’ space, the ‘urban’ space is

made from hard and dark surfaces that absorb and radiate heat, thereby warming the space.

Binding continuum

As discussed previously, *Binding* is a framework developed by Stenglin (2004, 2008) that analyses how a person may feel in a space as a result of arrangement of planes in terms of permeability, texture, colour, light and pattern. Stenglin’s framework operates on a continuum from Too Bound to Too Unbound spaces. Bound spaces tend towards security and protection but Too Bound spaces may feel claustrophobic and restrictive. Unbound spaces allow for freedom and movement, while the extreme Too Unbound spaces may cause users to feel vulnerable and exposed. Use of Binding in Model 2 reinforces the theme of contrast that Nadine carries through her trajectory. The nature space is weakly bound: the tree canopies provide a soft overhead plane and there is high visual permeability between the tree stems. This results in a space that has some protection but is not oppressive or confining.

Nadine intends that users “feel warm and cosy but also free and excited and nature vibes basically. Peaceful - there we go that’s the word - peaceful” (Chalk drawing video, Nadine, 7 August 2017). The dome overhead is intended to “give you that suffocating feeling” (Chalk drawing video, Nadine, 7 August 2017). The urban space includes a series of subspaces between the buildings and between the buildings and the dome, resulting in moderately to strongly Bound spaces. These tall, narrow spaces contribute to feeling constrained and restricted.

One of the assessment criteria for the students’ spatial model project is the development of a spatial experience. The resemiotisation of Nadine’s concepts, particularly ‘destruction’, ‘peaceful’ and ‘contrast’ are carried through to Model 2 in terms of spatial experience. The material expression of these three themes foregrounds the interpersonal meanings of the space. Nadine’s choice of the theme ‘destruction’ is resemiotised as a harsh, impersonal, uncomfortable space for users, deliberately in ‘contrast’ to the realisation of ‘nature’ as a space that is comfortable, accessible and welcoming.

5.4 Mobilising resources to move from Model 2 to Model 4

As part of constructing different orders of visibility of resources in the landscape classroom, a number of different activities were added to the design project. This section shows the types of opportunities these activities may afford for multimodal pedagogies. One of these activities is the 1:1 chalk drawing activity, through which Nadine has taken up opportunities for resemiotisation in terms of generating emergent and transforming meanings to realise her fourth model¹⁰.

The 1:1 chalk draw activity was scheduled during the second week of the model building project. Using large pieces of chalk and tape measures, students drew plan views of their models in the parking area at 1:1 or full scale. Griesel (2018) argues for the exploration of design concepts through sensory and kinesthetic experiences by drawing at large scales such as 1:2 and 1:1. The rationale to include the 1:1 drawing activity in the spatial model trajectory was to provide students

¹⁰ Given the similarity between Model 3 and Model 4, this analysis has focused on the fourth and final model.

with an opportunity to realise and interact with a full-scale representation of their projected installation, albeit only as a two-dimensional plan. Two major insights can be gained from this activity. Firstly, as Suwa and Tversky (1997, p. 388) show, drawings may have emergent properties that allow the designer to see their design from new perspectives and to gain insights from these views. Secondly, the activity generated new 'inner' conceptualisations of Nadine's model and, combined with pedagogic resources she had taken up from a design theory class, prompts the resemiotisation of her final model.

5.4.1 Emergent meanings: material resources prompting resemiotisation

A study performed by Suwa and Tversky (1997, p. 389) shows that sketches stimulate designers to 'read off' functional relations from their perception of visual features of their sketches. They recommend further research into why this would happen but suggest some possible reasons: sketches may trigger the designer's

knowledge about particular issues; sketches may be less specific thus allowing other issues to emerge; or sketches are ambiguous and allow for re-interpretation by the designer (Suwa & Tversky, 1997, p. 401). Although Suwa and Tversky (1997) refer specifically to sketches, models are also referred to by van Dooren et al. (2013, p. 58) as part of the visual language of design exploration.

Nadine's 1:1 chalk drawing is an example of how emergent meanings can be taken up into the design trajectory. Nadine's Models 1 and 2 include squares of brown cardboard at the base of each tree, possibly to stabilise and support the trees in the model. When drawing the 1:1 chalk drawing and landscape drawings of her models, these squares, whose meanings may only have been associated with model building, have been resemiotised in the 1:1 chalk drawings. When discussing her work later, Nadine explains that the squares were one by one meter tree surrounds designed to protect the tree stem and roots (Personal interview, Nadine, 8 February 2018). Through the process of drawing

her model projection at full scale, Nadine 'reads off' or reinterprets new meanings. This shows the potential for resemiotisation to move non-material meanings across different modes and materials, but also how, through moving between different modes and materials, new conceptual meanings may emerge.

5.4.2 Design resolution of the raised platforms

The 1:1 chalk drawing activity and reflective blog writing may prompt Nadine to reconsider the resolution of the raised platforms in her models in relation to the design direction of her narrative. Students were required to film themselves walking through their chalk drawing and to write a blog post reflecting on the activity. The brief for the blog activity (Appendix F) encourages students to consider answering questions such as 'to what extent did drawing the 1:1 plan affect your thinking about your model?', 'how did you and others experience (walking through) your 1:1 model?', 'what changes do you think you may make to your next model?' and 'what were the

opportunities and limitations of this exercise?' (Class handout, Project one full scale plan).

Nadine writes a blog post reflecting on her 1:1 chalk drawing exercise and it provides insight into the types of resources she has drawn from and taken forward into the resemiotisation of her next model. She reflects on how a combination of walking through her chalk drawing and a design theory class about plateaus, caused her to reconsider how she had been using the raised platforms in her model:

While walking through my design I wondered what effect the design would have if I elevated the nature and left the humanity side on the ground. In our design theory class we were taught about plateaus and mounds. "Mounds attract people to climb, view, roll, chase and sit or fly kites. It makes you feel secure and gives you feeling of pleasure. Mounds are used to create distinct and focal places" Whereas "a high plateau enables a journey of anticipation and mystery towards the unseen top." according to Catherine Dee. I decided to put the

nature on top of the plateau to emphasis and protect the trees. (Facebook post, Nadine, 12 August 2017)

Nadine takes up the experiential and pedagogic resources she draws from in order to reconceptualise and resemiotise the theme of 'balance' in her final model. This change is an important step in terms of the resolution or refinement of the direction of her trajectory in terms of her initial narrative. There is a change in representation from showing value as having more weight and being lowered, to showing value through elevation. Nadine indicates that nature is perceived as more valuable than urbanisation and so she has placed it on a raised platform (see Image 5.9 of Nadine's Model 4).

5.5 Conclusion: opportunities of multimodal pedagogies to prompt resemiotisation

The aim of this chapter has been to investigate how students deploy resources to move between modes



Image 5.9 Nadine's Model 4 (21 August 2017)

in landscape design trajectories. This research reveals different orders of visibility in the landscape architectural classroom. This analytical focus falls on the resources and resourcefulness of the meaning-maker. Through tracing Nadine's spatial model trajectory, this chapter has shown how multimodal pedagogies may present moments during the design trajectory that prompt not only the resemiotisation of texts and meanings, but the resolving of design trajectories in a particular direction.

The project brief was adapted to widen the range of resources students could draw from in the landscape architectural classroom. In designing her graphic narrative, Nadine draws from social and interactive resources, making connections between her everyday life and the landscape architectural classroom. Living at home, Nadine may have access to a wide range of resources, but a multimodal pedagogy aiming to change orders of visibility contributed to increasing the range of resources that students were able to bring into their landscape architectural learning environment. I have argued that, through a multimodal pedagogical

approach, a range of activities and opportunities for transmodal moments transform, generate and emerge reconceptualisations of designs that may be mobilised by students to move forward in their design trajectory. These activities can prompt new 'inner-(re) conceptualisations' (Kress, 2014a), directing the process of resemiotisation in the design trajectory. That these reconceptualisations could be realised materially in texts, or conceptually, generating the realisation of different meanings in texts, is particularly important in landscape architectural design trajectories where there are often complex design prompts requiring directed and multiple meaning-making iterations. In design education, where design processes may be tacit, explicitly requiring students to engage in a range of activities may offer opportunities for students to draw on diverse resources and make connections between their interests, what they find criterial, and the landscape classroom.

CHAPTER 6

Students as (re)-makers of landscape architectural design

6.0 Chapter overview

Chapters 4 and 5 explored the first and second research questions respectively: ‘what resources do diverse students bring to their learning experiences in the context of landscape architectural education?’ and ‘how do students mobilise these resources to move between spatial, visual and verbal modes in a (landscape architectural) design trajectory?’ Following the logic of the research questions, while also drawing on the findings of the previous two chapters, this chapter explores the third research question, ‘how can landscape architectural education draw on students’ diverse resources to develop a multimodal pedagogy for diversity?’

‘Re-making’ is a useful concept that brings together the theoretical, semiotic and pedagogical facets of this research. Firstly, Kress’s use of the term ‘(re)-makers’ signals the social semiotic perspective underlying this research. The meaning-maker not only assembles but *transforms* resources: re-making new signs.

The meanings of these practices are present in the signifiers as a potential for meaning and are carried 'forward' in constantly transformed fashion into new signs, remade in the light of the resources that (re)-makers of signs bring with them. (Kress, 2010, p. 69)

This focus on the meaning-(re)maker places emphasis on interest, resourcefulness and agency. Subsection 6.1.1 discusses how several students carry their experiential resources into their narrative and re-make these experiences and narratives into spatial experiences for imagined users of their installation.

Secondly, re-making references the *maker movement*, a global network of small-scale inventors and entrepreneurs who prototype and share designs as a counter to large-scale commercial manufacturing (Anderson, 2012, p. 21). Halverson and Sheridan (2014, p. 501) propose that the maker movement could be integrated into formal learning environments through the promotion of *making* as an activity, the identities of *makers*, and *makerspaces* as communities of practice.

The potential for the maker movement to transform 'what counts' as learning and to broaden the range of identities and practices in the classroom (Halverson & Sheridan, 2014), aligns with a multimodal pedagogical approach. The students' design trajectories have centred around making and re-making: the physical construction and transformation of both material and non-material resources into three dimensional spatial models. Subsection 6.1.2 examines the use of diverse materials in the process of making and how students have engaged in this process.

Thirdly, the process of *re-making* implies iteration as a result of resemiotisation in design trajectories. The focus on design as a process and not an end-product, highlights the role of making as a means to 'test' or work out design ideas (Moore, 2010; Selander, 2013; van Dooren et al., 2013) in terms of both the material process of *making* as well as non-material *conceptualisation*. Ingold (2013, p. 14) describes thinking through the process of making, as the 'art of inquiry'. Exposing students to this iterative design process as well as working out how to mobilise

resources to move the design trajectory forward, is important pedagogically. Texts as ‘fixings’ (Kress, 2010) may prompt re-(inner)conceptualisation and re-making, that is to say, resemiotisation. In the second section of this chapter, a range of opportunities and activities are discussed in terms of their potential within students’ design trajectories, and how they may prompt reconceptualisation and subsequent re-making.

Lastly, and importantly, re-making refers to the aim of the third research question, to develop and redesign landscape architectural pedagogies for diversity. The work of this remaking is addressed pedagogically through changing orders of visibility and validation of students’ resources. It also connects to students’ participation in remaking landscape architectural education by accessing the dominant landscape discourse through their own position and experiences. This echoes both the New London Group’s (1996, p. 87) ‘Transformed Practice’ and Kell’s (2015) ‘making people happen’.

Here we also need to consider the *capability* of the actor to *recognize* the aptness of a model, tool or artifact for expressing and producing meaning, as well as their *capacity* to *realize* or materialize the meaning they wish to express, using the resources that are available. (Kell, 2015, p. 440)

This ‘re-making’ of landscape pedagogy for diversity is framed throughout this chapter’s first section in terms of risk: how students operating in the ‘contact zone’ (Pratt, 1999) negotiate the risk between their own experiences and resources and the landscape architectural canon (see Image 6.1).

In reflecting on the pedagogical approach developed for this study, the first section delves into the spatial model trajectories of six students. These six design trajectories were selected because of particular moments that spoke to the aspects discussed above. The discussion centers on the recognition of students’ resources (that they bring with them), but also the recognition of the risks involved in drawing on these resources.

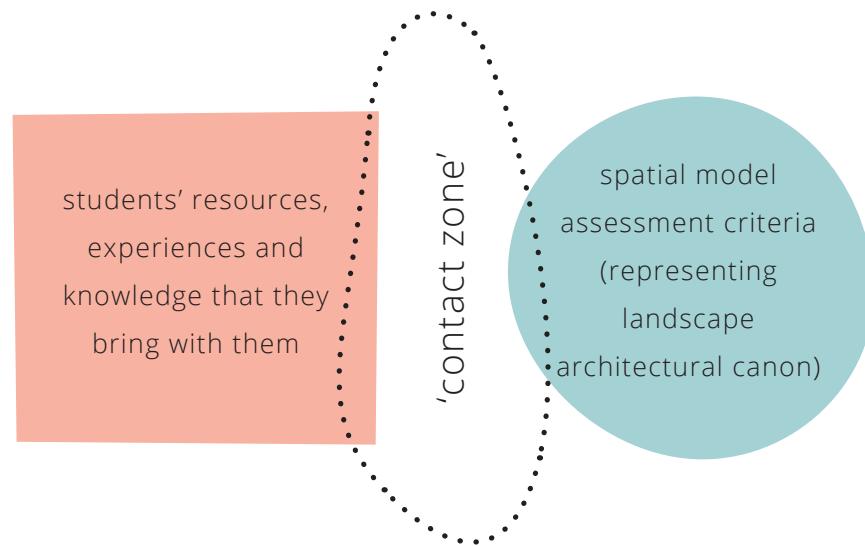


Image 6.1 Diagram showing how students' resources interface with the landscape architectural canon, as a negotiation in Pratt's (1999) 'contact zone'

The recognition of diverse resources is central to the multimodal pedagogical approach used in this case study which attempts to redress pedagogies that may have dismissed diverse resources, as well as to provide access to, and recontextualisation of, the dominant landscape discourse. The second section examines pedagogical resources and moments that students have taken up to move their design trajectories forward. The chapter concludes by summarising the recommendations and principles of multimodal pedagogies for diversity.

6.1 Recognition of risk in employing resources that meaning (re)-makers bring with them

Although Chapters 4 and 5 have shown the significance of recognition of students' resources and experiences in the landscape classroom, this is not unproblematic. Reflecting on Malibongwe's design trajectory, there is something poignant about his courage in highlighting the injustice of the mine workers and bringing their tragedy into the landscape design classroom. Given that

such resources may have been ignored or demeaned in the past, his choice of narrative represents a significant risk. Through their edited book, Thesen and Cooper (2014) and their contributors, explore the idea of *productive risk* in academic writing. The context of risk is framed by acknowledging the necessity of including the diverse experiences, voices and knowledges of those marginal to the dominant, often 'northern', academic discourse and the dilemmas this may present. Instead of portraying risk as a threat or in need of mitigation, the contributors to the book adopt a 'warm' notion of productive risk, "concerned with the experiential domain, the lived world of researchers weighing up what they will or will not say" (Thesen, 2014, p. 12). This warm notion of risk affirms the way in which Malibongwe negotiates landscape architectural form and space through his own experiences, position and values. The transformation of resources he brings and picks up along the way results in new knowledge production that both accesses and challenges the dominant landscape architectural discourse. This section unpacks what it means for students to bring their own resources to their

learning environment in order to access the dominant discourse. The first subsection acknowledges risk in terms of the types of experiences students bring to their design trajectories; the second subsection recognises the risks of unusual or 'messy' model-building materials and techniques; and the third subsection compares two students' design trajectories as they mediate the resources they bring with them, in light of the spatial model assessment criteria.

6.1.1 Students' re-making of experiential resources into imagined spatial experiences

This subsection explores the significance of drawing on students' experiential resources by looking across aspects of all three research questions. In relation to the first research question, this subsection uses the analytical framework developed in Chapter 3 to explore how students' experiential resources shape the design of spatial experiences in their models. The risk students take in bringing their diverse experiences into the

landscape classroom is acknowledged in light of a history of colonised education where diverse resources and experiences were often disregarded or devalued. The high levels of engagement that students demonstrate in their design trajectories reveals the importance of making a connection between diverse contexts and the landscape architectural classroom. The second research question, which investigates how students mobilise resources to move through their design trajectories, is analysed in this subsection through the spatial trajectories of four students, Thozama, Mbulelo, Xola and Cebisa. This subsection explores how these four students successfully negotiated risk through drawing on experiential resources as precedent or prompts that were transformed and redesigned into their spatial models. This mobilisation of resources is pedagogically important in terms of students negotiating their way into the landscape design discipline. Exploring how these four students contextualise landscape architecture in terms of their own experiences; how they use their resources as prompts to engage with landscape design trajectories and space-making; and to design meanings

and spatial experiences for the imagined users of their models speaks to the third research question in developing a multimodal pedagogy for diversity. Studying the trajectories of these students shows how multimodal pedagogies may enable diverse students to access, challenge and transform landscape spatial design practices.

Thozama: designing faith as space

In drawing on social and experiential resources from her faith and church community, that may be atypical in the landscape classroom, Thozama successfully mediates risk by accessing and engaging in landscape spatial design practices. Thozama's narrative is inspired by the song "I'll Run to Him" by the Dominions Gospel Group. Thozama explains how her choice of narrative reflects her experiences growing up in a church community and how her faith plays a significant role in her life.

I grew up in a church. God has been the centre of my life for as long as I can remember [...] I was lonely and he was

the only friend I had and through failures in life [...] he has been there for me. (Graphic narrative presentation, Thozama, 24 July 2017)

Thozama's design decisions and selection of resources are shaped by the social and experiential resources that she brings with her, demonstrating the significance of multimodal pedagogies that celebrate students' diverse resources as an entry into the landscape architectural design discipline.

Thozama's experiences in her church community are resources that she transforms into spatial forms and experiences in her model. She makes use of textual resources, *salience* and *texture*, to convey the *argument* and types of *activities* in her spatial model. Thozama's third model (see Image 6.2) comprises a square base with two separate, hedge-lined paths and a small structure near the middle of the model. Thozama has designed different surface textures for each path. The difference in texture between the two paths helps convey the *argument* of her narrative, that "not



Image 6.2 Views of Thozama's Model 3
(21 August 2017)

everybody experiences the same journeys" (Model 3 crit, Thozama, 21 August 2017). The texture of one of the paths is rough "which means that life was hard from the beginning" (Model 3 crit, Thozama, 21 August 2017). In designing this rough path for her imagined users, Thozama could be drawing from her own challenges and difficulties: "I have had challenges in my life" (Graphic narrative presentation, Thozama, 24 July 2017). The two paths lead to the entrance of the structure that Thozama describes as a "safe place [...] where you can come and meditate, pray, sing [*she lists these on her fingers*], whatever that makes you feel comfortable" (Model 3 crit, Thozama, 21 August 2017). In this space, Thozama imagines her users may engage in particular *activities* such as prayer and meditation, presumably drawing from activities and practices of her faith and church community. Inside the structure is a centrally-placed cross. The *salience* or relative importance of this space can be understood through its central placement within the overall model and is drawn from her own experience and values: "the cross is in the middle which means it's the centre [*gestures a circle in the air above the*

model] of my life or my journey (Model 3 crit, Thozama, 21 August 2017).

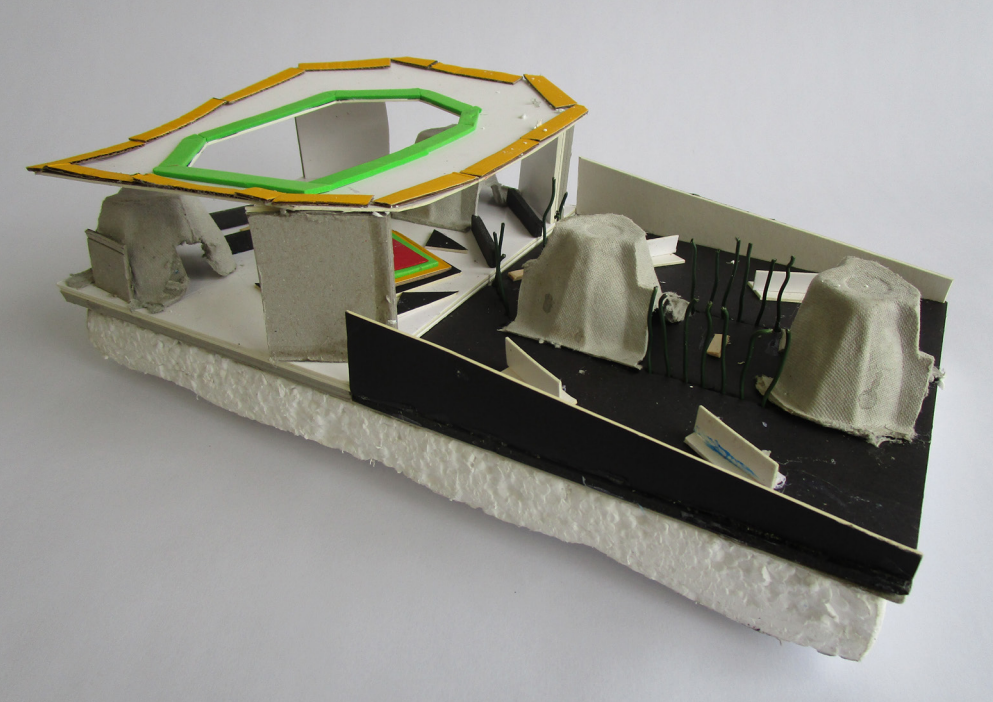
A multimodal pedagogical approach brings interpersonal meanings into the realm of space and enables connections between Thozama's own experiences and her landscape architectural learning environment. Thozama's choice of textual resources such as *degree of enclosure* and *light* help achieve the interpersonal meanings of the space such as *safety* and *comfort*. The central structure is enclosed by wall planes on four sides, however Thozama has chosen to use opaque materials that allow light into the space, ensuring that "people can feel comfortable" (Final model presentation, Thozama, 30 August 2017) and "not feel like they are being suffocated [*makes suffocating gesture*] or claustrophobic" (Model 3 crit, Thozama, 21 August 2017). By designing a permeable sky plane, additional light enters the space, reducing its potential boundedness. These feelings of safety and comfort that Thozama designs for her imagined users may have been inspired by her own experiences within her faith community.

This brief vignette shows a strong correlation between the experiential resources Thozama brings with her, and the forms and spaces of her model. Thozama draws on values, experiences, activities, feelings and her identity within her church community and transforms these into forms and spaces in her model. She draws on non-material and material resources in her development of her narrative and spatial model. In this landscape architectural classroom, Thozama is encouraged to juggle multiple identities from social contexts: she is both landscape architectural student and a member of her church community. She thus has an opportunity to explore the new practices of landscape architectural spatial model design, through her own values, experiences, feelings and identities. Thozama's case shows the importance of multimodal pedagogies in validating students' use of diverse resources in their design trajectories, and how this provides moments for The New London Group's (1996) 'Transformed Practice' where students may demonstrate "new practices embedded in their own goals and values" (p. 87).

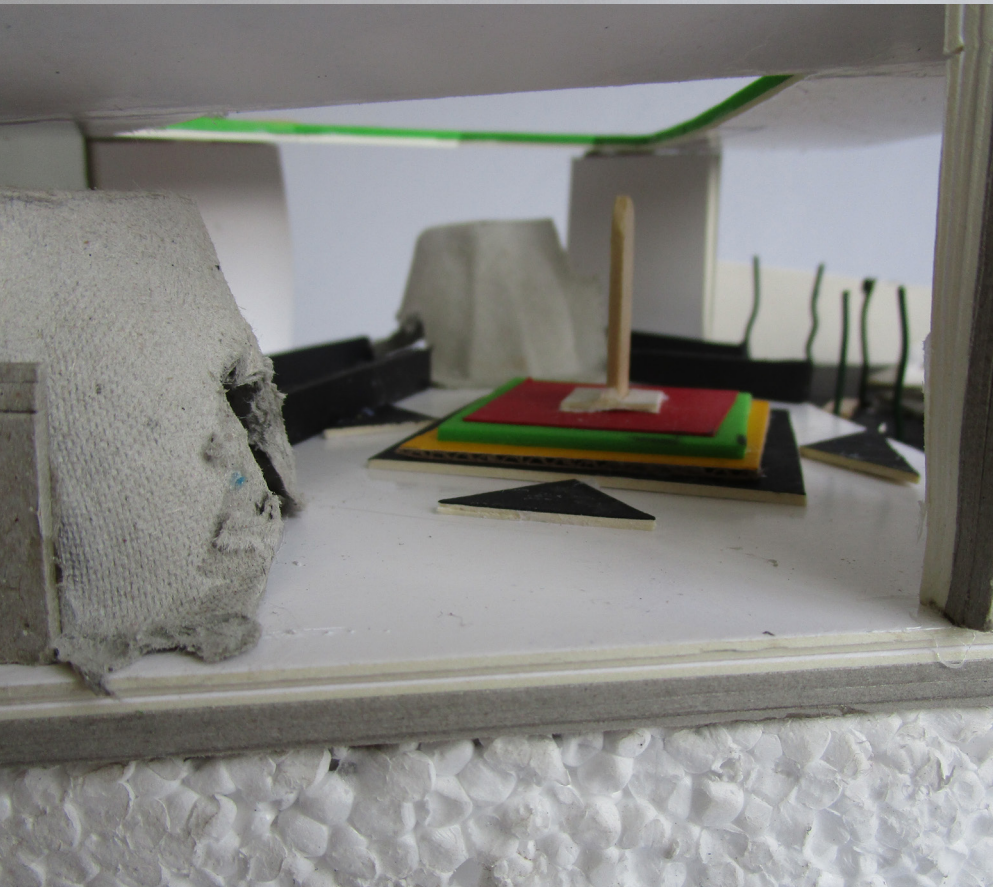
Thozama designs a spatial experience for the users of her model based on her experiences of faith. The next discussion traces how Mbulelo designs a spatial experience that is shaped by his experiences of living in an informal settlement.

Mbulelo: making experiential resources visible

Mbulelo's trajectory is significant because he operates in the 'contact zone' (Pratt, 1999) between landscape design and drawing on his experiential resources of living in an informal settlement in South Africa. In landscape architectural educational design contexts, projects located in informal settlements are rare, and potential design projects require long-term engagement and trust with communities. Mbulelo's design project is particularly significant because he brings this context of the informal settlement into the landscape architectural classroom. Mbulelo's narrative is based on his own life, a story of "rags to riches, an everyday, black South African story that we hear on the news about the young black



men or women, who are struggling financially because of poverty” (Final model presentation, Mbulelo, 30 August 2017). His narrative includes how he intends to come “through the struggles and hardships [...] to pursue his dreams and become successful in life” (Final model presentation, Mbulelo, 30 August 2017). Mbulelo makes use of textual resources such as *coherence*, *salience*, *colour*, *light*, *degree of enclosure* and *shape* to convey the aspirational ideational and interpersonal meanings in his model.



Mbulelo’s fourth and final model has a rectangular base and is divided into two sections: the first is characterised by a black ground plane, the second is defined by a white ground plane below and a sky plane above (see Image 6.3). His use of *contrasting* colour and demarcation of space using a sky plane achieves *coherence*: the way in which a user may understand that the two sections refer to the ‘rags’ and ‘riches’ components of his narrative. Mbulelo has designed a pathway in the shape of a question-mark for his users to explore his installation. This *movement* route conveys the sequence

Image 6.3 Views of Mbulelo’s Model 4
(30 August 2017)

of his *argument* as well as its symbolic meaning: “even if you’re going through the road of success, the road [to] success is not straight, so [...] that’s why the road is like a question mark” (Final model presentation, Mbulelo, 30 August 2017). The shape of the question mark increases the complexity of ‘rags’ and ‘riches’ binaries.

Mbulelo design spaces and forms that make a connection to his experiences in an informal settlement. Mbulelo explains how he hopes the user will first experience his model: “I used this [*points to egg box objects*] to represent the confusion. As one enters through, [the] spatial experience [of] the person is confusion because it’s like a dark room” (Final model presentation, Mbulelo, 30 August 2017). He also explains that “you get confused, you know, which path to go but they say at the end of the tunnel is light” (Final presentation, Mbulelo, 30 August 2017). The use of textual resources such as the colour of the black ground plane and the absence of *light* inside the ‘dome’, may cause the user to feel the *impression* of confusion or disorientation. Mbulelo intends this spatial experience to convey ideational

meanings such as the challenges of poverty and life in an informal settlement. As the user transitions from the first ‘dome’ space to the second, they find themselves in a weakly Bound (Stenglin, 2008) space that is bordered by thin vertical columns or “wires to represent being trapped” (Final model presentation, Mbulelo, 30 August 2017). The degree of *Binding* (Stenglin, 2008), connects to Mbulelo’s narrative where he felt trapped by poverty:

Growing up in the township you feel trapped that people don’t believe you’re going to make it. They don’t believe in your dream. They just say you’re dreaming [...] You just want to see the outside world but you feel trapped because of your background or disadvantage. (Final model presentation, Mbulelo, 30 August 2017)

In widening the project brief to encourage students to bring their own resources into the landscape architectural classroom, Mbulelo has taken up and made visible, experiences and contexts that may have been previously disregarded in educational contexts. Mbulelo not only identifies and abstracts his own experiences,

such as feeling trapped, he redesigns these through 3D spatial-making practices that can be experienced by the imagined users visiting his installation. In doing so, Mbulelo contributes to the diversity of available spatial forms and designs.

In the second section of his model, representing the aspirations of his narrative, Mbulelo designs a space that is distinct from the first half of the movement route. At the moment of transition between the black ground plane and the white ground plane, Mbulelo introduces a change in *level*. This symbolises Mbulelo's ambitions in his narrative to "climb up" and also represents that "there's a change" (Final model presentation, Mbulelo, 30 August 2017). The pathway is covered by a sky plane above, providing shelter to the user. The pathway in this second section, while moderately Bound by a sky plane, is open on both sides, allowing light into the space and ensuring high *visual permeability*. This can be compared to the strongly Bound 'dome' space at the beginning of the pathway. In addition to the level change and sky plane, Mbulelo makes use of contrasting colours and

high colour saturation to show a change in coherence in the second section of his model: "I used [...] bright colours to show success" (Final model presentation, Mbulelo, 30 August 2017). This second space also includes black triangles which Mbulelo explains represent "a superstition in our cultures [...] that if you become a successful as a black male, [...] there's like witchcraft. So that represents if you're successful, maybe people are going to try to bring you down" (Final presentation, Mbulelo, 30 August 2017). He also made a similar comment in an earlier crit: "because once you get money, like you're starting to have a lot of cousins" (Model 3 crit, Mbulelo, 14 August 2017). The reference to "lots of cousins" is colloquially referred to in South Africa as 'black tax': the financial burden of upwardly mobile black South Africans to support extended family members. Mbulelo therefore draws on shape as a resource to represent this aspect of his narrative. The sharp angles of the triangle and the way that they are arranged 'pointing' towards the moment of 'riches' in Mbulelo's model, may reflect his own apprehensions of the financial expectations of his family and community.

Mbulelo brings these contentious aspects of 'success' into his spatial model design.

Mbulelo's narrative is a reminder of the stark differences between the context and environment of an informal settlement and that of the landscape architectural classroom as well as the types of spaces typically designed in landscape architecture. Throughout his spatial model project Mbulelo has drawn on his own experiences, knowledge and resources and has explicitly brought these into his design trajectory. He mobilises the resources he brings with him and takes up new resources such as landscape architectural design practices and metalanguage. In his final model presentation he uses phrases such as "spatial experience", "represent" and "elevation" (Final model presentation, Mbulelo, 30 August 2017) showing that he is adopting and using the metalanguage of landscape architectural discourse. Mbulelo is an example of how students successfully negotiate risk and remake and recontextualise landscape architectural design practices through their own experiences. Multimodal

pedagogies that promote different orders of visibility of students' resources in the classroom, not only provide access to the dominant discourse, but also enable students to contribute to new knowledge production. The transformation of Mbulelo's diverse resources results in innovative spatial experiences and expands on *what* and *how* landscape spaces can mean.

Xola: drawing on an experience of betrayal

Xola's trajectory is important because of the way in which his use of experiential resources prompts imaginative spatial design. As a young designer with limited exposure to landscape architectural design precedent, the opportunity for him to resemiotise his experiential resources into spatial experiences provides a successful entry-point into landscape architectural design. In response to dominant landscape architectural design practice, Xola is thus contributing to the diversification of forms and meanings of landscape architectural designs.

Xola's narrative is based on a short story about a boy who is blind and is abandoned by his friend in a forest. The boy is scared and cannot walk home alone. A fisherman who hears him calling for help, helps the boy to safety (Graphic narrative presentation, Xola, 24 July 2017). In his final model presentation, Xola recounts another story of a person who goes to town at night with a friend who later returns home without him. Having no money with him, the main character feels scared but also betrayed by his friend who left him (Final model presentation, Xola, 30 August). It is not clear if Xola is this character in the second story but in an earlier critique he admits that he can identify with the boy who is blind: "when I grew up I [had a] friend who betrayed me, so that reminds me of this" (Graphic narrative presentation, Xola, 24 July 2017). The themes that Xola abstracts from the narrative are emotions such as disappointment, loneliness and trust. Without necessarily needing to draw from specific landscape architectural design precedent, he transforms and re-makes these themes into creative spatial experiences within his installation.

Unlike Mbulelo, who uses movement routes to reveal the sequence of the narrative to the user, Xola fixes themes from his narrative in the same space and time. They have not been designed to be experienced sequentially. Xola's model (see Image 6.4) comprises two primary levels: on the ground floor is a tower, an enclosed room, and a staircase that leads up to the upper level or platform resting on the room below. The room on the ground floor is enclosed on all four sides except for a small entrance on one corner. Because the room is dark Xola explains that "someone is going to feel lonely and scared" (Final model presentation, Xola, 30 August 2017). While there is a significant *degree of enclosure*, the distance between wall planes is generous. In terms of Binding, the space is strongly Bound, not because the space is constricted, but because of the absence of light. A person standing alone in this dark room may feel the *impression* of fear, loneliness or abandonment. The darkness of the room may also be inspired by the dark forest in Xola's narrative. In landscape architecture forests tend to be viewed as positive in terms of ecological habitats and carbon sinks.

Xola's dark and eerie forest could be seen as a reminder of the diverse range of meanings of forests.

Xola makes use of *spatial engagement* as an interpersonal resource to express the theme of betrayal or disappointment. Xola designed the stairs to represent "hope that when someone betrayed you there's someone who can help you" (Final model presentation, Xola, 30 August 2017). Walking up the stairs, the user may hope to find an entrance into the tower. Upon reaching the upper platform they can peep into the tower through a window but cannot access the tower space because of the absence of a door or entrance. The *spatial engagement* Xola has designed for the user is heteroglossic and dialogically contractive (Ravelli & McMurtrie, 2016, p. 75): users can choose where to move and may experience the space from multiple perspectives, but they cannot access every space in the installation. This experience conveys Xola's theme of disappointment or betrayal in his narrative: "it's disappointing to just walk in here hoping you can get in here, but you can't" (Final model presentation, Xola, 30

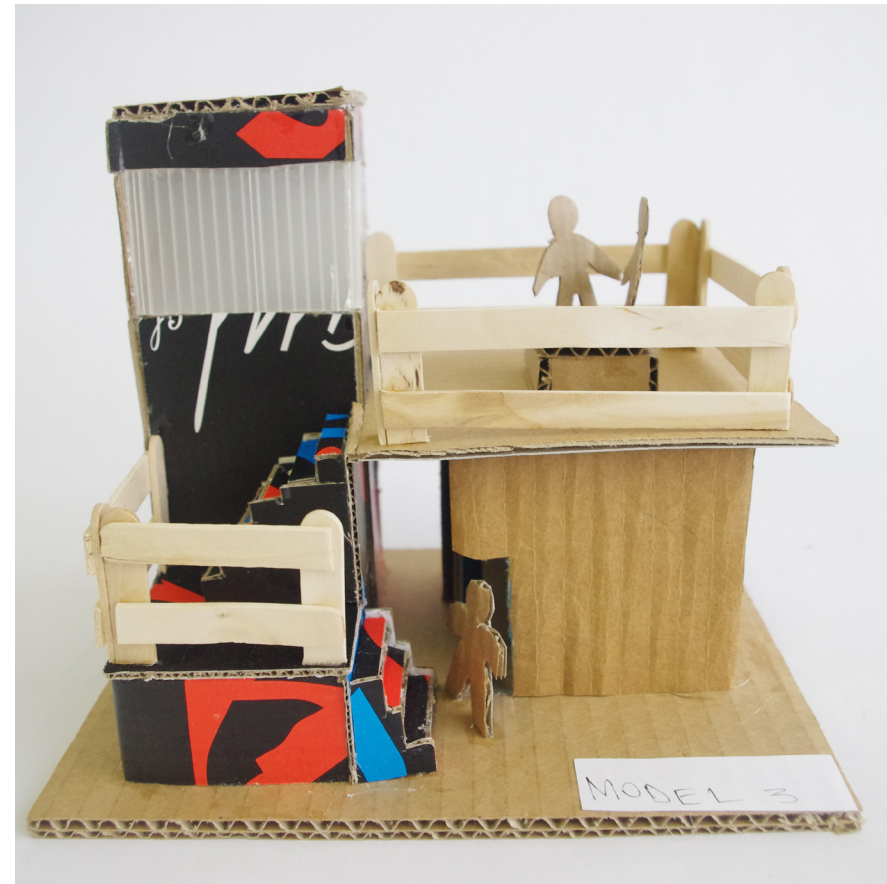


Image 6.4 Xola's Model 4 (30 August 2017)

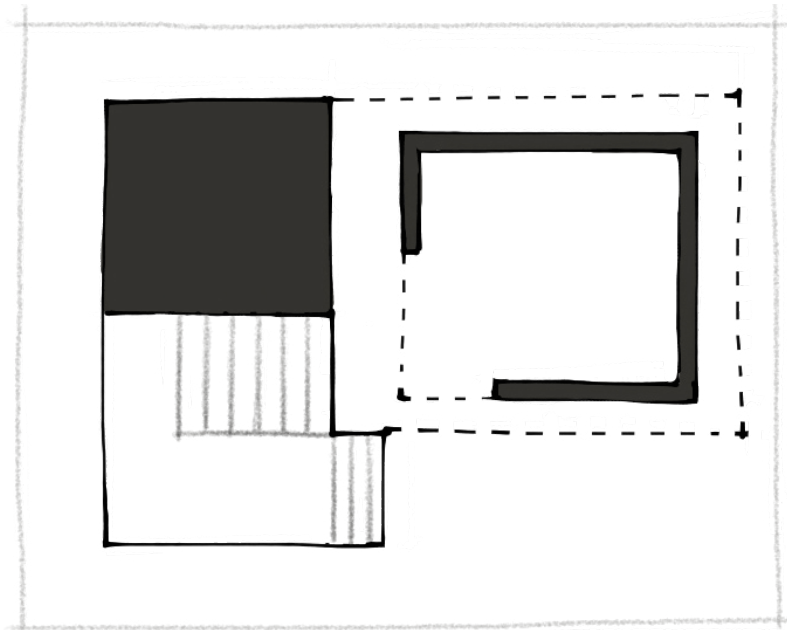


Image 6.5 Figure-ground diagram of Xola's Model 4

August 2017). In the studio class, we discussed Daniel Libeskind's design of the Jewish Museum in Berlin, in which he makes use of voids to represent the emptiness and loss of the Holocaust (J. E. Young, 2000). Xola's similar use of voids and absences shows a nuanced and sophisticated design response to his narrative. Xola demonstrates a successful negotiation between his own experiences and ways of representing those experiences, in the landscape architectural classroom.

Xola draws on familiar resources such as his experience of betrayal and disappointment, and reframes these within landscape architectural meaning-making trajectories. *Cohesion*, the degree to which elements are related or connected, is expressed in Xola's model through textual resources such as the *figure-ground*, and *visual permeability*. Analysing the figure-ground (see Image 6.5) reveals that the enclosed room and the tower, representing fear, loneliness and disappointment, are disconnected from each other, separated by a thin narrow space. The room and tower are characterised by voids, absences of light and access, which may

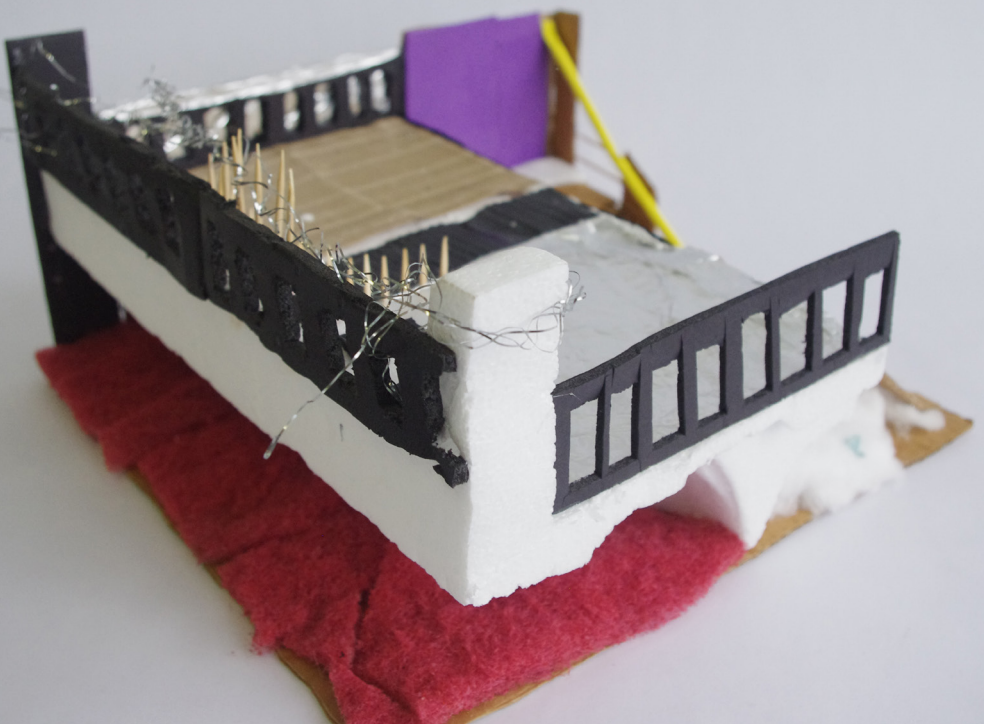
signal the sense of loss in the betrayal. The enclosed, dark room ensures minimal visual permeability and low social contact. In contrast to the disconnections created by the tower and enclosed room, the stairs and platform, representing hope and trust, connect the room and tower space. From the upper platform users can see above the handrail to view the surroundings. This high visual permeability and social contact restores a sense of cohesion to the model and may point to the restoration of hope by the fisherman in Xola's narrative. Xola not only accesses landscape architectural design practices by drawing on his experiential resources, but successfully engages with aspects relating to the assessment criteria, such as cohesion.

Xola's narrative evokes strong feelings and emotions which he abstracts into spatial experiences within his model design. Instead of labelling Xola as an inexperienced designer with low exposure to landscape design precedent, a multimodal pedagogical approach to research highlights his resourcefulness in designing spaces that are creative and original. Xola balances the

risk between his own experiences and criteria that are valued in landscape architecture, such as abstraction and spatial engagement. The next spatial model discussed, has been designed by Cebisa, who also draws on emotions relating to her experiences of fear.

Cebisa: designing space through engagement and confronting fears

Cebisa's spatial model trajectory is quite unusual in her approach to spatial form generation. Through her trajectory, she remakes landscape architectural design practices and redesigns new types of spaces. Cebisa's narrative is about overcoming fear. Her narrative is inspired by her own decision to study landscape architecture: "I was afraid of what is landscape. What am I going to do? What is it about?" (Graphic narrative presentation, Cebisa, 24 July 2017). Through her narrative, Cebisa describes how "fear basically deprives us of the things that we could achieve as a person" (Graphic narrative presentation, Cebisa, 24 July 2017). Cebisa explains that people who choose to confront



their fears may overcome their fears and achieve success. They may realise “I did it in the end without anyone helping me [...] why was I even afraid the first time?” (Graphic narrative presentation, Cebisa, 24 July 2017).

Instead of abstractly representing themes in her model as spaces or forms, Cebisa’s design process is shaped by her own debates around fear and how this translates into the way a user negotiates their movement and interaction with her model. Cebisa’s narrative about challenging perceptions and confronting fears is embedded in her model through interpersonal resources such as *spatial engagement*, as well as textual resources including *salience*, *coherence* and *texture*. The way Cebisa expresses her *argument* centers around the user, their degree of *interaction* and choices that they may make. “In all types of spaces, the users are part of the interactive framework and can respond to the space by either accepting or challenging the semiotic design” (Ravelli & McMurtrie, 2016, p. 86). Cebisa’s model design challenges users to overcome their perceptions and

Image 6.6 Views of Cebisa’s Model 4 (30 August 2017)

engage with the spaces in the model.

Cebisa's spatial model design presents the user with four choices of movement routes. At the back of the model is a cave-like space with a textured red ground surface (see Image 6.6). This may signal salience to users who are attracted to it. Users may choose to walk around to the back of the model to explore this space but as Cebisa explains "you [...] see there's actually nothing interesting there. It was something just to fool the people, who were always in the comfort zone, trying to use the easy ways" (Final model presentation, Cebisa, 30 August 2017). Users could also choose to walk underneath the ladder where there is a white, soft ground surface. Cebisa describes this space as the "comfort zone" for users who may be too afraid to climb the ladder and engage with a difficult experience (Final model presentation, Cebisa, 30 August 2017). She imagines users debating "'Will I just stay here or just maybe try and take the ladder to go and see what's on top?' Or you can just stay here be like, 'Okay, I'm just fine with whatever I have'" (Final model presentation,

Cebisa, 30 August 2017). Users may also choose to walk up a short flight of stairs. Cebisa has designed this for users who are "always afraid to try new things, to try and experience new things" (Final model presentation, Cebisa, 30 August 2017) and miss out on an opportunity to discover the upper level. From the vantage point at the top of the stairs, Cebisa imagines users may be able to see the foil texture on the upper level and may be motivated to climb the ladder: "that will challenge them to go, actually to go down and try to climb the stairs and to see what's the foil. 'What's this thing that's shining on top?'" (Final model presentation, Cebisa, 30 August 2017). Once these three options are exhausted, users may choose to climb up the ladder, but Cebisa does not make this inviting for the user to do so. She makes use of salience and texture to suggest to users that objects may be intriguing or deceptive. She imagines what the user might think or feel as they debate climbing the ladder: "You want to go there, but you're afraid to use the [ladder] [*uses fingers to walk up ladder*] because I used the [...] toothpicks here [...] and they think they might fall or they might break" (Final model presentation, Cebisa,

30 August 2017). Assuming the user makes it at least halfway up the ladder, Cebisa wonders if users might be discouraged by the shiny tinfoil texture or the wire attached to the black handrail:

These spiky things [*points to wire on black hand rail*] are just to fool them and try to manipulate their decision. Some people, some adventurous people will want to climb and [say] “What is this spiky thing? Is it really hard, or is it soft? Does it really shine that much?” But if you are afraid and you’re not that adventurous, you’re always in your comfort zone, you can just stay here and experience little things. (Final model presentation, Cebisa, 30 August 2017)

If a user overcomes their fears and climbs the ladder they may experience new textures and discover that they were not what they initially perceived them to be. The textured black strip on the upper level “looks rough but it’s actually smooth” (Final model presentation, Cebisa, 30 August 2017). In contrast to Xola’s dialogically contractive spaces, Cebisa has intentionally designed a

heteroglossic and dialogically expansive spatial model (Ravelli & McMurtrie, 2016, p. 75): users have full access to every part of the model and are limited only by their own choices. This degree of *spatial engagement* invites her users to challenge their perceptions and overcome their fears or hesitations.

Cebisa’s model is exciting and creative: she designs a complex movement route, enticing users to explore and engage with her model, and the narrative that it expresses. She makes use of spatial engagement and texture as semiotic resources to convey her narrative to her imagined users. Cebisa shows a high level of engagement throughout her design trajectory, thoroughly participating in peer and crit reviews, exploring and experimenting with textures and perceptions. The way in which Cebisa puts herself in her users’ shoes, asking questions such as “What is this spiky thing?” and “Will I just stay here?” shows how her user and their experience is at the heart of her spatial model design. These questions also prompt her own design processes and the diverse types of spaces and forms

she creates. She brings her own resources into her learning environment and successfully manages risk as she takes up landscape architectural design practices.

This subsection has examined the different ways in which Thozama, Mbulelo, Xola and Cebisa draw on and transform experiential resources into the design of spatial experiences in their models. Uncritical landscape architectural pedagogies that grew out of Global North perspectives, when applied to Global South contexts, could privilege particular resources or meaning-making practices and exclude and silence others. In light of decolonising education movements, there is a responsibility for landscape pedagogies to not only recognise, but to validate diverse resources and design practices (Archer & Newfield, 2014; Stein, 2008). In adapting the project brief to increase the variety of resources that students could draw from, students such as Thozama, Mbulelo, Xola and Cebisa have designed diverse, rich, layered landscape architectural spaces and experiences for their users. Moments such as these are important in developing a landscape architectural

pedagogy for diversity because they highlight the value of constructing different orders of visibility of resources students bring to their design trajectories. These four students show that when students engage in meaningful ways with their designs, there is immense potential for learning and knowledge production. In the process of learning, students are remaking and reframing landscape architecture in new and diverse contexts.

The construction of different orders of visibility of the resources students bring to their landscape design trajectories includes not only non-material resources such as narratives, but the physical, material resources they use to realise these meanings.

6.1.2 Re-making the spatial mode(s): changing visibility of material resources

Particularly in Global South contexts where the universalising perspectives that took shape under colonisation have often reduced epistemological

diversity, the recognition and validation of diverse students' experiential, knowledge, social and conceptual resources is important. In light of the physical and material engagement of remaking, valorisation of students' diverse material resources also deserves attention, particularly with regard to students' negotiation between 'risky' materials and model-building conventions. The first part of this subsection describes the typical model-building conventions and practices and compares these to the variety of material resources students brought to their model-building trajectories. The second part explores the ways in which students are experimenting with the affordances of materials and subsequent spatial design. The third part shows how lifting restrictions on materials can result in the development of model-building conventions and practices which subsequently realise a diverse range of meanings.

While two-dimensional visual representations may be the dominant mode in landscape and architectural design practice, three-dimensional model representations are

also common-practice. Landscape and architectural practice draw on a variety of model genres such as massing models, structural models and design development models (Dunn, 2010; Mills, 2005; Porter & Neale, 2000). These genres can be divided into two main categories: presentation models and exploratory models. Presentation models are built for clients and other stakeholders to visualise the final design product while exploratory models are "three-dimensional diagrams" (Porter & Neale, 2000, p. 21) such as diagram models, concept models and spatial models that are used by the designer in the process of design to explore or interrogate aspects of the design. Although designers do make use of colour and texture in models (Porter & Neale, 2000, p. 126), the dominant, and often implicit, convention is to construct models from particular materials such as cardboard, foam board, plastic, timber and use neutral or monochromatic colour palettes including whites, beiges, browns and greys (Mills, 2005; Porter & Neale, 2000). Mills (2005) reflects on the maxim that light, monochromatic models are less 'distracting' and ensure that "shadow lines, voids, and planes are well

articulated by light” (p. 18). Porter and Neale suggest that this tendency towards light-coloured, monochromatic models, may be a residue of the influence of Brutalist concrete forms and minimalist Modernist architectural styles of the mid to late 20th century (Porter & Neale, 2000, p. 24). Typically, design education studios tend to follow these conventions, including the landscape architectural design studio in this study. In previous years, the way we taught the spatial model project was limited in terms of the types of material resources students could draw on. For example, the 2016 model brief handout stated that the models must be made from brown or white cardboard. Objects such as dowel sticks and skewers made from timber or similarly neutral materials were permitted, but the brief explicitly stated that coloured materials were to be avoided, or used minimally for emphasis. In redesigning this course, several changes were made to the spatial model brief, including the use of narrative and opening up the range of material resources that students could draw from. The rationale behind these changes was to draw on a multimodal pedagogical approach that celebrates

the agency and resourcefulness of the students as designers. In the process, these changes also question the necessity of the dominant conventions; reduce the need to buy costly building materials such as triplex; explore the affordances of a wider material range; and provide scope for students to draw on their own making practices and techniques.

Embracing a wider range of material resources is not without risk. Students’ exploration and experimentation with a range of materials results in varying degrees of success. For some students, the seemingly limitless range of materials and affordances prompts new forms and meanings. Other students may be deterred by the range of choice. Khanyiswa, for example, expressed her frustration in deciding what materials to use.

I didn’t know what features could I put there or materials could I use, softer materials or harder materials. [I found it] difficult to build it, difficult to make a structure out of it. It was not easy. (Focus group, Khanyiswa, 27 November 2019)

a



b



c



d



Many students successfully embrace the wider material range, not only selecting unusual materials but experimenting with ways of *making*. The process of (re) making provides opportunities for students to draw on and develop their own making practices. For example, Nadine's use of green food colouring, dessicated coconut, cotton wool and decoupage glue to make trees (Image 6.7, a). Nonthobeka draws on weaving techniques to design a paving pattern in a pathway (Image 6.7, b). Trent and Fezeka's use of modelling clay allows them to design a range of forms and objects in their models (see Images 6.7, c and d). Atypical or 'risky' materials that may have been disallowed in the past, have been selected by students as apt resources for meaning-making. Dave, for example, sculpts the form of his ground plane using a thick layer of sand (Image 6.8 a). Malibongwe's use of the shell prompted particular meanings that may not have developed if the model could only be made out of cardboard. Nelisiwe's use of tinfoil and orange and blue cardboard transforms her third model (see Image 6.8 b) in a way that could not have been achieved through monochromatic cardboard.



Image 6.7 (a) Nadine's Model 3;
(b) Nonthobeka's Model 3; (c)
Trent's Model 2; and (d) Fezeka's
Model 2

Image 6.8 (a) Dave's Model
3; and (b) Nelisiwe's Model 3;



The exploration of the affordances of a range of materials has resulted in transformations of new forms and spaces. Mbali repurposes a polystyrene cup and transforms it into a gazebo for an outdoor seating area (Image 6.9, a). Students' transformation of material resources results in a diversity of forms and spaces that increase the range of meaning potential in landscape architectural design.

There are several students who combine and transform materials in such a way that the forms and spaces are greater than the sum of their parts. Vusi uses wire, strips of plant and clear tape to create palm tree fronds (Image 6.9, b). Themba imaginatively combines green cardboard, tin foil, a polystyrene ball and red marker to redesign a treehouse (Image 6.9, c). Wandile's final spatial model is also innovative in the way he transforms materials into complex forms and spaces that convey his narrative (Image 6.9, d). Widening the range of material resources also provides moments where students could contest some of the dominant model-building conventions. Thozama, for example, makes use of

texture as a material resource in her models. Although the colour red in landscape architecture could indicate salience or emphasis, Thozama selects the material for its texture, representing a hedge, not its colour. Similarly her choice of tinfoil as a material is not because of its reflective properties but "because it's soft" (Model 3 crit, Thozama, 21 August 2017). Semiotically, Thozama is using materials in particular ways that align to her choices and not necessarily to landscape architectural conventions. Her use of texture questions the visual prominence in landscape architecture over, for example, the haptic. Allowing Thozama to make these choices and to recognise these choices is an important aspect of multimodal pedagogies and expands the ways that landscape architecture space can convey meaning.

The process of making highlights students' resourcefulness and agency in their design process. Compared to the limitations of monochromatic, cardboard models, the diversity of materials and techniques used across the models in the case study demonstrates that widening the range of materials

results in the design of unique and diverse forms and spaces. The importance of changing visibility of material resources not only enables students to access model-building practices through familiar resources and techniques, but also provides moments for students to mediate the boundary between their own resources and model-building conventions.

6.1.3 Risk: how much is 'enough'?

The multimodal pedagogical approach in this research developed in response to growing concerns around single or dominant educational perspectives that may exclude or silence diverse resources, experience, knowledge and practices. Landscape architectural education has a responsibility to not only validate the resources and experiences students bring to their learning environment, but to design a multimodal pedagogical approach that encourages students to draw on their resources in order to access and challenge landscape architectural discourse. This process is not without complications, and, as Thesen and Cooper

(2014) and their contributors have shown, involves a degree of risk.

Risk is about process; it is relational, seeking connections between what is brought along and what is achieved or realised; it is ontologically rich, inevitably indexing the writer's subjectivity and 'interest' (Kress, 2001). Thus, risk always points in (at least) two directions, both back to the past and forward to potential audiences and readers. It acknowledges dilemmas; and more than this, it actively seeks them out, interested in how dilemmas are lived in the writing of research. (Thesen, 2014, pp. 15–16)

This acknowledgment of the dilemmas of risk is helpful in interrogating the meaning-making trajectories of two students, Khanyiswa and Sonwabo. While both students bring their own resources into the spatial model project, they each have varying 'success' in mediating these in relation to landscape architectural design. This section aims to problematise risk to understand the negotiation between students' resources and the landscape canon. This subsection is framed in terms of

how students balance their own experiential knowledge in relation to demonstrating 'sufficient' engagement with landscape architectural discourse. The first part of this subsection recaps the key aspects of this landscape architectural discourse as represented by the spatial model assessment criteria. The remainder of this subsection explores and compares how risk plays out in the trajectories of Khanyiswa and Sonwabo.

Spatial model criteria as landscape canon

Thesen and Cooper's (2014) edited book on risk in academia documents how students negotiate the 'contact zone' (Pratt, 1999) between experiential knowledge and academic knowledge, particularly with regard to academic writing conventions and expectations about how arguments are asserted. The following discussion outlines students' negotiation of risk in relation to the assessment criteria of the spatial model project. These criteria illustrate the meaning-making conventions and types of knowledge that are valued by the landscape architectural discipline.

To simplify this discussion, the assessment criteria described in Chapter 4 have been reconceptualised into five key criteria: abstraction; spatial awareness; modality; cohesion; and effort. *Abstraction* is highly valued in landscape architecture as a representational practice, but also as a way of conceptualising and synthesising information from often complex situations. Designing landscape architectural spaces requires *spatial awareness* in terms of technical aspects such as scale and ergonomics but also as a mode through which meaning is conveyed. *Modality* speaks to the way the landscape architects communicate their designs to others in terms of credibility. Although the term 'modality' is not used in the students' assessment rubric, a popular comment by the examiners was about the extent they could imagine themselves in the students' installation, or how possible it would be to construct the students' imagined installation. *Cohesion* underpins landscape architectural values that determine the ways in which designs respond to context, for example, landscape designs often aim to blend or tie in to their surroundings. In the spatial model project cohesion is determined

through the degree to which the narrative brings the elements of the model together. *Effort* is related to care and thorough exploration of model-building and design processes. Particularly for young designers, assessors value effort over design experience. For example, a student may substitute design expertise for effort and engagement with the design task.

These criteria are conveyed to students both implicitly and explicitly in different ways throughout their spatial model project. The assessment criteria are given to students at the beginning of their project (see Appendix C) and are made explicit through various questions in the comment sheets. For example, one comment sheet (Appendix G), requires students to evaluate to what extent their guiding themes have been abstractly represented. Another comment sheet (Appendix D) asks students “Are the elements of the model multifunctional [...] or is each theme represented by a separate element on the model?” The group critic, particularly those that include lecturers, implicitly guide students towards meeting these criteria.

Khanyiswa

Khanyiswa is one of a handful of students who struggled to meet ‘enough’ criteria in the final model assessment. Viewing her work in light of a productive concept of risk, I felt that an understanding of her meaning-making trajectory may uncover dilemmas she may have encountered. Recognising the resources she brings to her design may help to explore “what happened along the way” (Thesen, 2014, p. 6): how resources may have either been mobilised or “lost in this process of negotiation” (Cooper, 2014, p. 44).

Khanyiswa may draw from experiential resources of rural areas but only tentatively abstracts this in terms of colour and texture in her first model. Khanyiswa’s narrative is based on the novel “Pride and Prejudice”. Khanyiswa explains that the story was meaningful to her because “any girl from anywhere could marry a guy, not because of the wealth or because of his good looks or because of where he stays, it’s because of love” (Graphic narrative presentation, Khanyiswa, 24 July

2017). Khanyiswa's first model (Image 6.10) reveals the ideational *setting* of her narrative. She draws on *colour* and *texture* as textual resources to convey this setting. Her model comprises a rectangular ground plane that is enclosed on three sides by high wall planes. The central wall plane is white in colour, indicating that it was a time of peace, "there was no war" (Model 1 crit, Khanyiswa, 2 August 2017). The texture of the ground plane represents that the narrative took place in a rural setting. She explains how this texture reflects the time period and setting in which her narrative takes place: "it was set in the villages [...] so just tells that it was really rural [...] no roads. And the people there rode in [*pauses*] they didn't use cars" (Model 1 crit, Khanyiswa, 2 August 2017). While Khanyiswa may be drawing from her own experiences of rural areas, or perhaps visuals from the movie, their expression through colour and texture is subtle.

There are five statues of people in her model which represent the characters in the story. In terms of modality, Khanyiswa imagines the installation will include



Image 6.10 Khanyiswa's Model 1 (2 August 2017)

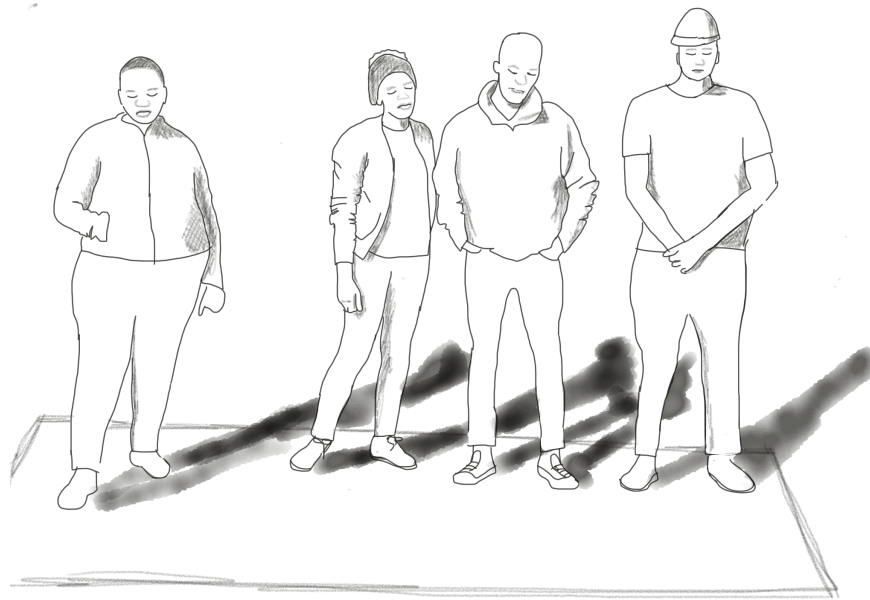


Image 6.11 Redrawn screenshot of Khanyiswa's chalk drawing

full-scale “photographs [...] to make them like statues of people” (Model 1 crit, Khanyiswa, 2 August 2017). The following week when Khanyiswa draws her Model 1 to full-scale in chalk, she co-opts her classmates to pose as the ‘statues’ in her installation (see Image 6.11). This demonstrates Khanyiswa’s resourcefulness, agency and creativity to identify the resources available to her at the moment of meaning-making. The scale or proportion of these ‘statues’ in Khanyiswa’s chalk drawing are larger than that of her Model 1. Although there may be a mistranslation of scale from Model 1 to the chalk drawing, for Khanyiswa the activity “helped just to know the size or maybe change what you put in there [...]. How the people experience this when they’re there” (Focus group, Khanyiswa, 27 November 2017). Khanyiswa draws from this ‘emergent’ experience and brings this experience of spatial awareness to her second model.

In the second model (Image 6.12), Khanyiswa carries through the spatial awareness from her chalk drawing and use of texture as a resource, but also draws on *elevated ground planes* and *openings* in planes to

express the ideational meanings of her narrative. In the design theory class the previous week, we had discussed precedent examples of sunken and elevated ground planes as well as configurations of openings in wall planes. It is possible that Khanyiswa is bringing these pedagogical resources into her design trajectory and is demonstrating signs of learning in terms of landscape design. Khanyiswa designs an elevated plane or 'pedestal' that signifies the status of Darcy's character in her narrative: "so I put this person here on the pedestal because [...] he was this big person in that area" (Model 2 crit, Khanyiswa, 14 August 2017). Khanyiswa has designed an opening in the wall plane behind the pedestal. She doesn't give an explanation for this in her presentation, but the crit group assists her in suggesting how this can be incorporated into her narrative. Responding to a comment Khanyiswa made in her presentation "he chose this one girl who everyone thought he will never choose" (Model 2 crit, Khanyiswa, 14 August 2017), the group helps her to conceptualise the unexpected, or surprise, as a theme from her narrative. The group discussion makes several



Image 6.12 Khanyiswa's Model 2 (14 August 2017)

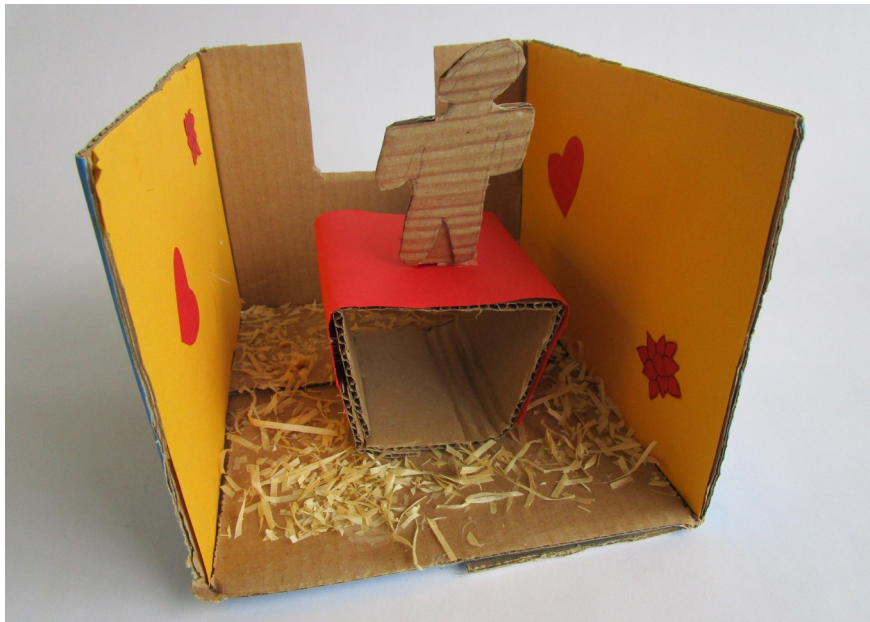


Image 6.13 Khanyiswa's Model 3 (21 August 2017)

suggestions including the use of bright colours to indicate surprise, or 'retrofitting' the gap or opening in the wall plane into the narrative of the unexpected. The group also identifies the absence of a sky plane in her model, which is part of the brief of the project, and makes some suggestions how she could weave the use of a sky plane into her narrative (see Appendix L).

Moving to her third model (Image 6.13), Khanyiswa retains resources such as *texture* and the *elevated plane*. She abstracts and reconceptualises the meaning of the opening in her wall plane to represent the difference in wealth in her narrative: "this was a huge gap between this guy who fell in love with this girl because this guy was wealthy and the girl was not" (Model 3 crit, Khanyiswa, 21 August 2017). She mobilises interactive resources from her crit and takes up *colour* as a resource to represent the theme of surprise: "I put these yellow bright colours [...] to represent the surprises and the red piece is representing love and peace" (Model 3 crit, Khanyiswa, 21 August 2017). Khanyiswa also draws on *salience* as a resource to express the position of prominence Darcy

occupies in her narrative: "I just put one person on the pedestal in the middle to focus on him because this story revolves around him" (Model 3 crit, Khanyiswa, 21 August 2017).

In Khanyiswa's Model 4 (Image 6.14) there is a significant shift in her design trajectory, there is a disconnection between the meanings, and movement of some resources between the third and the fourth model have been lost. The opening in the central wall plane, for example, has not been carried through, the central wall plane is now a resemiotisation of Khanyiswa's first model where she used the colour white "for peace" (Final model presentation, Khanyiswa, 30 August 2017). In terms of assessment criteria, this loss of abstraction in favour of symbolic meanings is not particularly successful. Although texture was used as a resource in the first three models, it is unclear why it is absent in the fourth model, Khanyiswa comments she "didn't put the grass in here" (Final model presentation, Khanyiswa, 30 August 2017). Instead of drawing on colour to signify surprise, colour has been resemiotised in Model 4 to

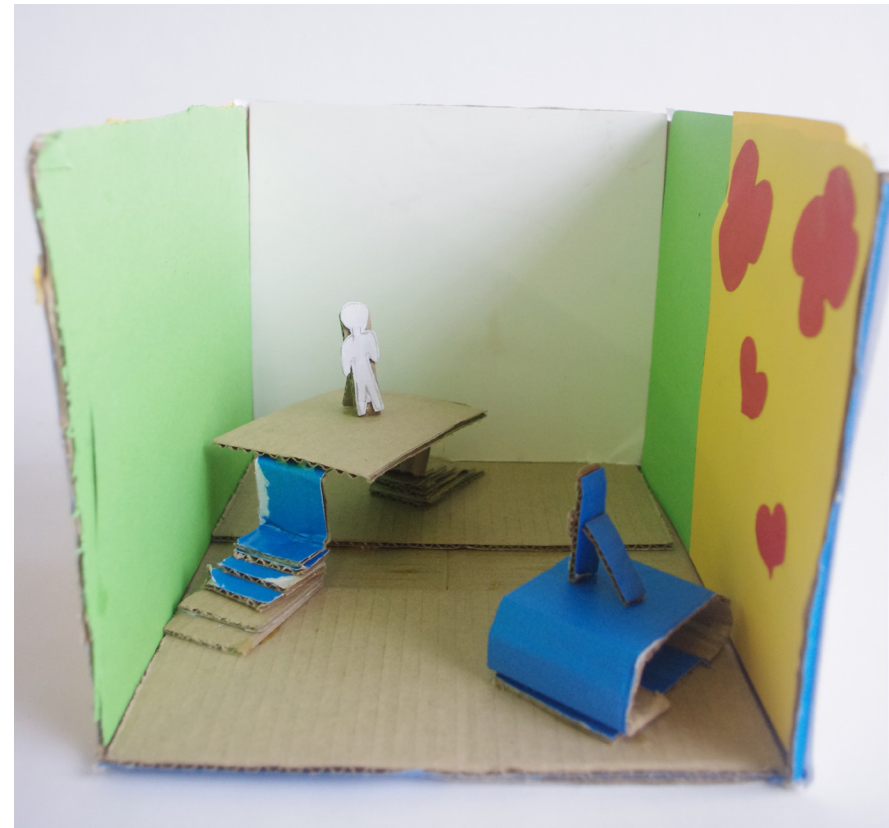


Image 6.14 Khanyiswa's Model 4 (30 August 2017)

represent “his pride”, “love” and “happiness” (Final model presentation, Khanyiswa, 30 August 2017). The theme of the unexpected in her narrative is no longer visible in the fourth model. It is also not clear why Khanyiswa made the decision to design two pedestals in the final model and what this might mean in terms of her narrative. In reference to the stairs she has designed from one of the pedestals, Khanyiswa notes “[these are] the stairs to climb down off his previous lifestyle” (Final model presentation, Khanyiswa, 30 August 2017). Despite several prompts in comment sheets and group crits, a sky plane is not included in the model.

To summarise the resources Khanyiswa brings to her design trajectory: her narrative is shaped by her interest; she draws on her own experiences in her use of colour, texture and scale; she shows agency in recognising the social and interactive resources available to her; and she takes up pedagogical resources to manipulate ground and wall planes to convey meaning. Despite this, Khanyiswa does not substantially demonstrate abstraction, scale, cohesion and effort. Part of the

purpose of crit sessions is to mediate these criteria and to guide students to respond to these criteria. Khanyiswa later expressed her concern that the crits “didn’t help much” and that “someone could have helped me to understand [...] the characteristics of the story where you could build a model from those characteristics” (Focus group, Khanyiswa, 27 November 2017). I was worried that somehow, as lecturers, we had failed to provide constructive crits to assist Khanyiswa but when I reviewed Khanyiswa’s crits there was substantial evidence of explicit recommendations, from both lecturers and students, regarding scale, spatial experience, abstraction and cohesion. In a peer group crit, Olwethu even comments on effort: “I think you could do more” (Peer group crit, 23 August 2017). Typically between Models 3 and 4, students may experience clarity and resolution in terms of the direction of their design. Unusually, Khanyiswa’s fourth model demonstrates discontinuities of drawing on resources and meanings from the previous three models. Why did Khanyiswa choose to leave out particular resources and meanings? Is Khanyisa holding back

or taking the 'path of least resistance'? (Thesen, 2014, p. 6) Khanyiswa's design trajectory is a caution: firstly, although multimodal pedagogies may open up spaces for students to draw on their own resources, there is no guarantee that students will choose to do so. Secondly, drawing on students' resources and experiences is not always 'enough' to successfully meet assessment criteria. Incorporating experiential knowledge doesn't 'just happen', the process of negotiation is complicated and involves risks (Cooper, 2014, p. 32).

Sonwabo

Inspired by Cooper's (2014) recognition of how students "navigate the space of risk" (p. 36) in academic writing, this subsection explores how Sonwabo successfully negotiated the risk between drawing on his own resources and experiential knowledge to meet 'enough' criteria of the spatial model project. While Sonwabo may have struggled with the abstract nature of the project, he draws on other highly-valued resources such as care, making and experiential knowledge, to move his design

trajectory forward. These resources that he brings, successfully 'translate' into assessment criteria such as effort, modality, cohesion and spatial awareness.

Sonwabo's narrative is brief and does not include as much layering and complexity as other students: "when I grew up I thought I'd be a professional soccer player but through the challenges I ended up doing Landscape Architecture" (Poster presentation, Sonwabo, 24 July 2017). While other students abstract or conceptualise their model through the themes they identified, Sonwabo's fourth model design (see Image 6.15, d) draws from his own experiential knowledge and resources of playing soccer in the townships: "I created the play park which is [...] where I used to play [soccer]" (Model 3 crit, Sonwabo, 23 August 2017). Sonwabo chooses to use the word "created" which is particularly apt description of his model. Sonwabo has not copied or replicated existing spaces, he has used his knowledge and experiences to design an idealised park that responds to particular contexts and challenges. For example, although he explains that when he plays

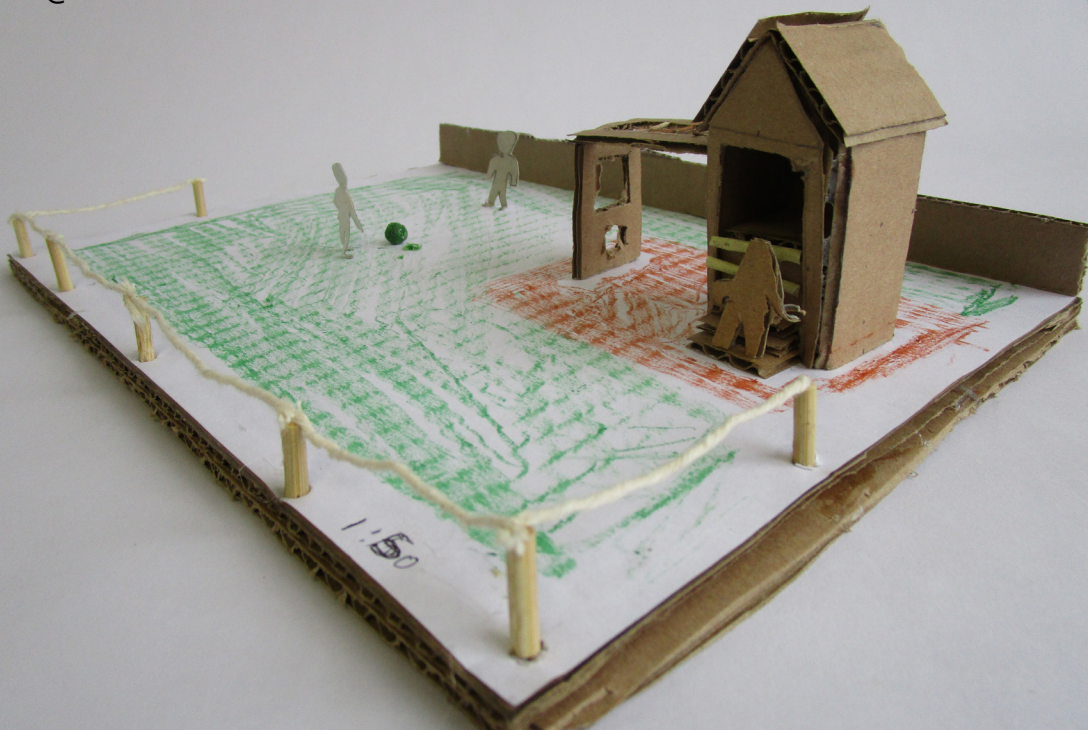
a



b



c



d



soccer with his friends they would usually find some stones to use as goals (Model 3 crit, Sonwabo, 23 August 2017), he has designed goal posts at opposite ends of his soccer field. Although the model brief suggests that students' installations would be installed in Green Point Urban Park, Sonwabo has chosen a familiar township neighbourhood as the *setting* for his model. Sonwabo also resemiotises resources from his previous models into his fourth model. Sonwabo's first model (Image 6.15, a) was a soccer stadium, and Models 2 and 3 (Image 6.15, b and c) were children's play structures in a park. He brings these into his fourth model: "I tried to link them together like when he was playing in the playground there will be a lot of people in the stadium. The cars and everybody watching, playing" (Final model presentation, Sonwabo, 31 August 2017). Through drawing on these experiential resources, Sonwabo's final model demonstrates high modality: his model credibly responds to a particular context. In his Model 3 crit, we also discuss how the park is surrounded by buildings and how he wants to let people in and to walk through the park but not cars (Model 3 crit, Sonwabo,

23 August 2017). In his play park design, Sonwabo draws on ideational resources such as purpose, and expresses these through textual resources such as coherence. In terms of *purpose*, Sonwabo's final model depicts a play park that incorporates a range of *activities* and related macro-genres such as a toddler's play area, lawn, a hedge, a car parking area, a soccer field, spectator seating and paths or movement routes. This range of activities also shows a significant level of cohesion in his model.

By placing cardboard 'people' in his model, Sonwabo foregrounds how he has designed the park with people in mind, responding to the needs and activities of the potential users of the site. It also signals significant spatial awareness, as his design strongly relates to the human-scale. His design includes a range of interpersonal meanings such as *affect*, *interaction* and *identity*. Through affect, Sonwabo draws on resources such as *belonging* and *comfort*. In terms of belonging, he has designed accessible and inclusive spaces. The play park provides access for both vehicles and pedestrians: there is a

Image 6.15 (a) Sonwabo's Model 1; (b) Model 2; (c) Model 3; and (d) Model 4

pathway running axially through the park, integrating the park into the surrounding neighbourhood. By designing seating stands for spectators and by including a large shade tree in his park, Sonwabo is taking the comfort of his users into account.

The degree of interaction in the site, particularly the difference in *spatial engagement* between vehicles and pedestrians realises ideational meanings valued in landscape architecture, such as prioritising the needs of pedestrians over vehicles. The spatial engagement for pedestrians can be described as heteroglossic and dialogically expansive, compared to the limited, monoglossic spatial engagement designed for vehicles. Interaction in the play park also includes a range of different zones and activities that allow for a variety of *social distances*. Spectator seating provides opportunities for personal distance; social distances may be experienced in the play areas and soccer space; and pedestrians passing through the space may experience public distances. This range of spaces also widens the types of identities users may adopt in the

space, including children, vehicle owners, pedestrians, people who live or work in the community, soccer players and spectators.

Sonwabo's final model demonstrates high levels of modality as an interpersonal resource. The *scale* of his model is accurate and resolved in terms of the size of elements and paths within the park. His design allows for a high degree of *user engagement* and participation. In terms of *functional aesthetics*, the forms and spaces relate strongly to the context and activities in those spaces. His model is also meticulously and carefully *constructed*, demonstrating effort.

Textual resources such as *coherence*, *degree of enclosure* and *cohesion*, reinforce the ideational and interpersonal meanings of the play park. Coherence, the degree to which users understand how to move through the space, is realised through a series of subtle textual resources. Image 6.16 is an analysis of the movement routes through Sonwabo's Model 4. Understanding of movement and entry can be interpreted through

hierarchy. For example, the primary entrance (Image 6.16, a) for people intending to use the play park is wider than the secondary pathway (Image 6.16, b) running along the edge of the park. For pedestrians who access the play park from this path, Sonwabo has designed a small *threshold* (Image 6.16, c), transitioning users from the public park to the semi-public spaces of the play park. *Degree of enclosure* demarcates the various spaces within the park, for example, the toddlers' play area (Image 6.16, d) is weakly Bound by a low railing. The degree of enclosure responds to the needs of users in terms of protecting young children from running into vehicular spaces, but also ensures parents or caregivers a high degree of visibility of the children. The spectator seating on three sides of the soccer field (Image 6.16, e) also creates a weakly Bound space, separating the soccer space from the other spaces while maintaining high visibility in terms of security.

Drawing from experiences of space in townships, Sonwabo makes use of *framing* to achieve cohesion in his design. Apart from entry points, the play park is

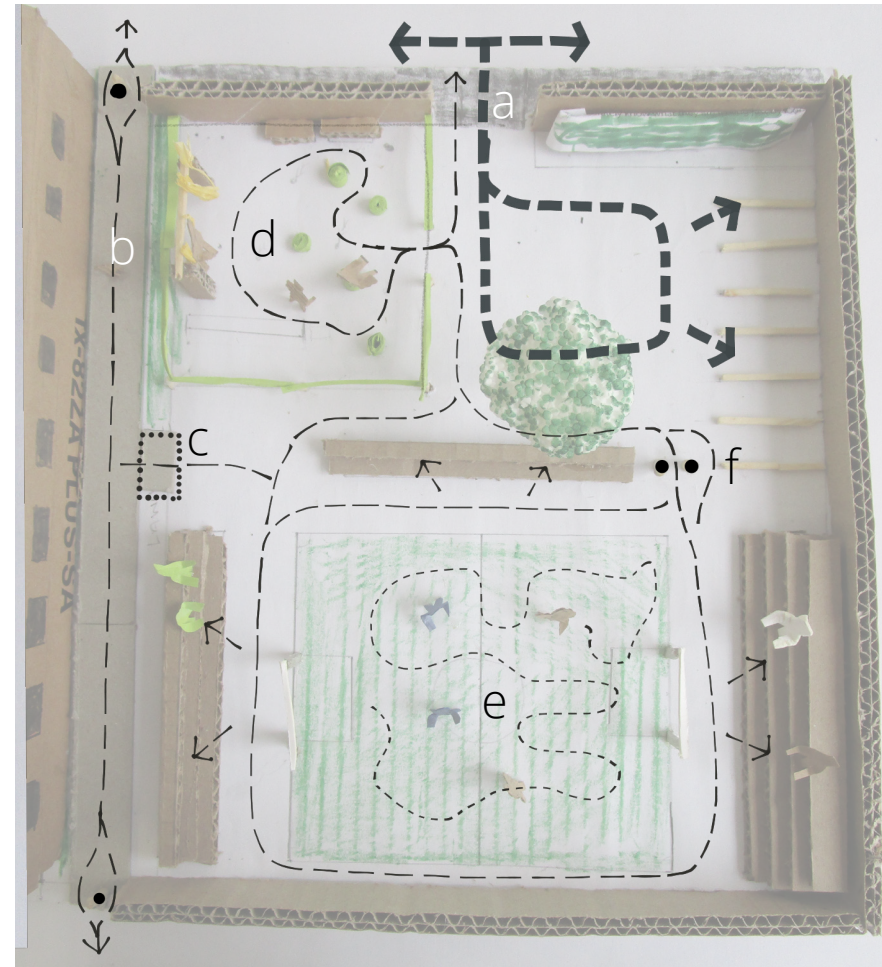


Image 6.16 Analysis of movement routes in Sonwabo's Model 4 (Pedestrian routes are shown by thin dashed lines and vehicular movement routes are show by thick dashed lines)

surrounded by a wall or fence to demarcate the edges and to ensure that people “understand where the play park ends or where it starts” (Model 3 crit, Sonwabo, 23 August 2017). Sonwabo provides additional framing around the toddler play area and places two bollards (Image 6.16, f) between the car parking area and the soccer field space. In doing so, Sonwabo is signaling his uptake of landscape values relating to *qualities of place*, such as designing safe spaces for young children and the separation of pedestrian and vehicular spaces. Cohesion is also achieved in the way that each space is connected by a network of *movement routes* that pass by the various spaces. This type of movement circulation, where pathways are independent and there are multiple arrival points, is described by Ravelli and McMurtrie (2016, p. 135) as ‘parataxis’.

Throughout his design trajectory Sonwabo demonstrates how he brings his own resources and experiential knowledge to his spatial model design trajectory. He also draws on pedagogic resources and knowledge of landscape design that he was exposed

to in the Foundation class. While Sonwabo does not undertake the use of abstraction in his spatial model, his engagement in spatial awareness, modality, cohesion and effort is excellent. Discussing this in Sonwabo’s presentation exam, Walter admits that while abstraction is “something that you need to be able to do”, the way Sonwabo approaches his project, “I think it’s good enough” (Final model presentation, 31 August 2017). Although multimodal pedagogies promote the use of students’ experiential resources to access dominant discourses, this is not unproblematic. The processes involved in mediating this risk should not be underestimated, and this brings us to more direct questions regarding pedagogical mediation.

6.2 The role of pedagogical resources in design trajectories

This section argues that a multimodal pedagogy for diversity should include multiple opportunities for modal or conceptual shifts within the design trajectory. As Kress (2014a) describes, every design process begins

with an idea or an inner conception in response to a prompt (see Image 6.17). The meaning-maker may choose not to externally express this inner conception or they may choose to realise this as a text. This text may be presented to others as a multimodal ensemble or may be resemiotised in another 'transmodal moment' (Newfield, 2014) or activity, for example a 1:1 chalk drawing or mind map. The feedback from the crit group, or the engagement in the activity, may prompt further re-(inner)conceptualisations which are then realised in the subsequent text in the trajectory. This section explores the impact of pedagogical interventions and activities in the spatial model project and how these may be taken up as pedagogical resources by students to move forward in their trajectories. While each intervention or activity may have specific pedagogical intentions, they share a common thread in terms of the role they play as prompts for re-(inner)conceptualisation in the design process.

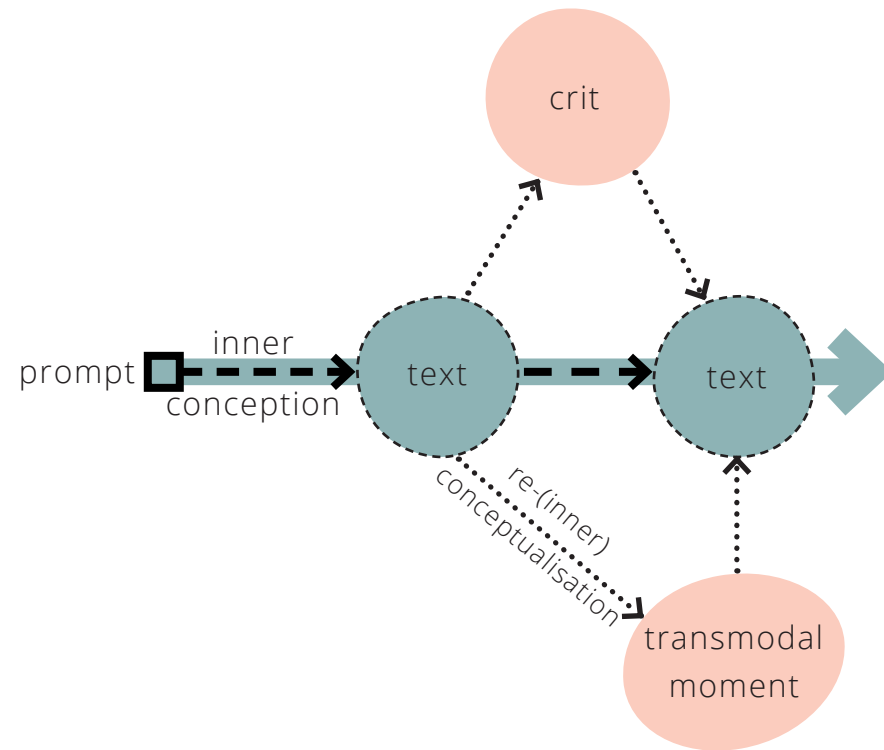


Image 6.17 Diagram illustrating the role of pedagogical interventions (crits) and transmodal moments (Newfield, 2014) in terms of prompts for design

6.2.1 Group crits

In social semiotics, interpretation is “the ‘inner’ re-making of the sign by the person who has engaged with some part of the world” (Bezemer & Kress, 2016, p. 24). When students present their texts-as-multimodal-ensembles to crit groups, each person in the group interprets the text and, in the process, forms an ‘inner’ conceptualisation of the text. During the crit discussion, students or lecturers may choose to realise this ‘inner’ conceptualisation as a verbal comment, or sketch, or written note on a comment sheet. This ‘fixing’ of a re-conceptualisation is then available for uptake by other members of the group, or by the designer presenting their work. This may be an example of ‘sequential organisation’, a term borrowed from interaction analysis, meaning when “a sign complex made by one sign-maker ‘prompts’ a subsequent and consecutive (‘inner’) re-making by the person who has engaged with that sign complex” (Bezemer & Kress, 2016).

There is a moment in Mbulelo’s design trajectory (see subsection 6.1.1) that illustrates how he takes up pedagogical resources to move his design trajectory forward. The ‘question mark’ form of the movement route in Mbulelo’s fourth model is the result of a prompt from a previous crit discussion. In his final presentation he explains how the crit discussion impacted his decision: “[In] my last model you told me that even if you’re going through the road of success, the road of success is not straight, [...] that’s why the road is like a question mark” (Final presentation, Mbulelo, 30 August 2017). In Mbulelo’s crit, the discussion highlights how the material, textual form of the straight road doesn’t align with the non-material, ideational meaning of his narrative. Mbulelo takes up this suggestion and reconceptualises this meaning in a different material form, in the shape of a question mark. Not only is Mbulelo able to mobilise resources from the crit, the way he explains the changes demonstrates that he is taking ownership of the decision.

In addition to crits, the number of iterations of texts in a design trajectory may also play a role in assisting students' to develop their design in a particular direction.

6.2.2 Iterations of texts in multimodal design trajectories

The intentional iterations of the spatial model project is an important facet in the design trajectory that moves a design in a particular direction. A series of texts that are connected in some way has been described by Ker (2015) as a 'text-chain', by Stein (2008) as a 'semiotic chain' and by Newfield (2014) as a 'transmodal semiotic chain'. Kell (2008) traces sequences of events in what she calls 'meaning-making trajectories' through 'strips'. All four terms refer to the way that different texts, often realised in different modes, are connected in some way through a meaning-making process involving a theme or topic. The different texts in the spatial model project, from the graphic narrative to multiple iterations of three-dimensional models, are connected by the students' narratives. This iteration of the spatial models

is important pedagogically, for several reasons. Firstly, the production or realisation of texts is critical to a process of experimentation or design inquiry.

Externalising a design conversation by talking it out in a sketch increases the capture, the harvesting of ideas. It excites opportunities to observe. Upon observing what has appeared in an exploratory drawing, the designer is stirred to ponder. The drawing has expanded the reach of the designer's imagination, and added previously unrealized possibilities. (Smith, 2017, p. 99)

Although Smith describes this process in terms of drawings, this can be applied to any explorative design texts, including the spatial models. Multiple iterations of texts may be required for the designer to adequately engage in the design exploration and uncover various aspects of the spatial model *through the process of (re)making*. Landscape design projects often include complex contexts and prompts and it may not be possible to address each of these in one text. Producing multiple texts provides opportunities for the design

to focus on addressing different design informants. Landscape design pedagogies should ensure that students practice this element of the design process (van Dooren et al., 2013). Nadine and Kim reflect on their perception of this iterative process:

Nadine: [There is] less pressure in the sense that you can, you still have time to think about different ideas and not just put everything, all your ideas onto one model.

Kim: Yeah. Because then it's like if this model doesn't work, it doesn't mean I'm going to fail. I mean I can work on it and make it better. (Focus group, 29 September 2017)

Secondly, iterations of texts provide moments for formative assessment through group crits. As discussed above, while crit sessions may prompt re-(inner)conceptualisations of the text, crits are also valuable pedagogically in terms of moments where the assessment criteria and landscape canon may be (explicitly and implicitly) mediated to the students. Multiple iterations of texts in a design trajectory also

ensure that students become familiar and comfortable with giving and receiving feedback, as well as working out what to do with this feedback. In a discussion about the perception of crits, students felt that the crits were helpful and constructive. Nadine reflects on how crits may prompt new ways of thinking about the spatial model that can be explored in the next stage of the design: "Because a lot of the time we come up with the idea and we're like, this is great. This is amazing and it's going to stay like this" (Focus group, Nadine, 29 September 2017). Kim noted "I wish I could have done it myself or thought of that myself, but also, I like that someone gave me the idea as well. You know the input feels like they care" (Focus group, Nadine, 29 September 2017).

Thirdly, a number of design iterations is needed to gain momentum towards a particular design direction. The number of iterations may vary from project to project, but in this case study, there was an observable design 'surge' in students' third or fourth models. Most students appeared to sufficiently resolve their narratives by

the fourth model and a fifth model may have been unnecessary. Nathi noted that “I think it helps a lot to, not to just make one model” (Focus group, Nathi, 29 September 2017).

Crits and texts are familiar components of design trajectories in the landscape architectural classroom. The following subsection examines types of activities or transmodal moments that prompt reconceptualisation of meanings within design trajectories.

6.2.3 Transmodal moments: prompts of re-(inner)conceptualisation

Newfield’s (2014) concept of the ‘transmodal moment’ ties in to the idea that re-(inner)conceptualisations prompt transformations in the design process. A transmodal moment relies on the affordances of different modes to realise meanings differently in a design trajectory. “The concept of the transmodal moment focuses attention on the relational aspect of the transmodal chain, *on the way in which a modal*

shift impacts on meaning and on the way in which the links are connected or discontinuous with one another” (Newfield, 2014, p. 103).

While some students, such as Nadine, enjoyed designing in three-dimensions “I actually enjoy doing things with my hands” (Focus group, Nadine, 29 September 2017), other students such as Asanda felt the opposite: “personally it was something that was completely out of my comfort zone because I’m not good at making things” (Focus group, Asanda, 27 November 2019). While designing in different modes may help move a design trajectory forward, transmodal design trajectories are also pedagogically valued for learning through different modes. Bezemer and Kress suggest, “learning through one mode alone means that the potential for learning about an issue or phenomenon is partial” (2016, p. 52). In researching how students in a landscape architecture classroom learn through different modes or skill sets, Griesel (2018) shows the importance of learning through a range of modes and activities including interactional, social or group discussions;

physical, sensory or kinesthetic engagement; and logic or problem-solving activities. I have argued that iteration and resemiotisation in the design process can be recognised as signs of learning. This is consistent with Bezemer and Kress (2016) who state that “re-making signs in a different set of modes [...] is a route to learning” (p. 47). Providing moments for students to move between modes in a design trajectory not only results in a re-(inner)conceptualisation of meaning, but the design engagement through multimodal, as opposed to dominant modes, prompts signs of learning. This process, while pedagogically valuable, is not unassailable, because “it is the learner who guarantees that there has been learning, not the teacher” (Bezemer & Kress, 2016, p. 38). This subsection discusses the re-(inner)conceptualisations prompted by activities or ‘transmodal moments’ (Newfield, 2014) in the students’ design trajectories: sketching, the spatial engagement in 1:1 chalk drawing and the written (verbal) mind map. This subsection proposes that these ‘moments’ in design enable resources to be taken up by students in future ‘strips’ (Kell, 2015) of their design trajectories.

Sketches

Although it was not an explicit requirement in the design trajectory, several students made use of drawings or sketches to aid the movement of their design process. As discussed in Chapter 5, Nadine’s sketches provide a stepping stone between her narrative and the three-dimensional model, by exploring spatial concepts through two-dimensional sections. Mbulelo finds that drawing a plan of his final model helped him to reconceptualise the movement route before making his final model. Vusi also recalls that his model-building was prompted through the act of drawing:

The thing is when I’m drawing it gives me, I think, it gives me ideas of what to do when I’m building it. [...] But when I’m building it, it will be maybe a little, slightly different from what I’ve drawn because the more I work on it the more some ideas come. (Focus group, Vusi, 29 September 2017)

Sketches may be useful prompts in design trajectories because they are quick and easy to produce and changes can be made easily.

The 1:1 chalk drawing

The 1:1 chalk drawing exercise was included in the design trajectory with the intention that it may assist students to physically experience the scale and size of their model. This exercise was inspired by Griesel's (2018, p. 127) use of chalk drawings to illustrate landscape architectural design principles. In one exercise, students draw around each other in chalk to explore the different patterns of rotational symmetry. In the spatial model project, although the chalk drawings were two-dimensional, students were encouraged to imagine the model in three-dimensions as they walked through their drawing. Nadine explains how her experience of walking through her 1:1 chalk drawing enabled her to reflect on how her users may experience her design and how this prompted her to make changes in her model design:

Christine: So did it change the way that you built your next model?

Nadine: In my instance, yes, it did. [...] A whole lot of my buildings were widely spaced and [...], this is not the feeling that I wanted [...] So that's why I made my buildings bigger and closer together. (Focus group, 29 September 2017)

Thozama (whose model is discussed in 6.1.1), in a blog post reflection of the chalk drawing exercise, echoes the exploration of the chalk drawing from the point of view of the user, and how they may interpret the designer's intentions:

It made us realize and experience how people would feel if they had to walk through our journeys if they were have to be built and it also made us aware of our mistakes and how to fix them. It was a good exercise for us [...] to draw our models, it gave us an idea on how to be in other people's shoes as we walked through our models being able to express the creator's thoughts and feelings. It was a great feeling knowing that I created

something for people. (Facebook post, Thozama, 29 September 2017)

Asanda, another student in the class, also indicated the importance of physical interaction and spatial engagement with the chalk drawing:

That really helped a lot because it was us getting in the space of our model, we had to interact with the model. And it wasn't just about having it, a small thing that's there. But it was like maybe, like us stepping into what we are doing and making it a reality. And it really helped a lot. (Focus group, Asanda, 27 November 2017)

Although the activity was originally designed to assist students with their own understanding of the scale of their spatial model, the chalk drawing has also proven to be valuable in understanding how the imagined user may experience and engage with the space. Both Nadine and Thozama indicate that their increased appreciation of the user's experience prompts re-(inner) conceptualisations of their spatial model.

Mind map

The mind map activity comprised several components intended for students to reconceptualise their narratives in different ways. Each student was randomly given a household or everyday object and tasked with finding a connection between that object and their narrative. Another exercise required students to compare their narrative to a plant or animal. In her final model presentation, Cebisa (her Model 4 was discussed in 6.1.1) reflects on how the mind map helped her to reconceptualise aspects of her narrative and spatial model

Cebisa: But that [*picks up mind map*] this thing helped me that you gave in class.

Christine: Did it really? Ah.

Cebisa: Yes, it did because you gave me a container and then that container was enclosed. So I thought that like some people, you will feel like you're always in a container, but if you go out and get to see the other things, you go out of the container. You get to

experience the things and then when you said you just find a thing or a plant that you think [will relate to our narrative]. And I took a prickly pear. A prickly pear, it has all

Christine: Yes, but if you look past it

Cebisa: but then you get to see what's sweet inside.

(Final presentation, Cebisa, 30 August 2017)

During a peer group crit, Malibongwe explained the connection he made between the paper punch and his narrative about the miners of Marikana:

The mind map has helped me very, very much you see because now I can link my concept and my brief explanation [*holds up mind map*] - the item that was given to me was - what is that - a punch. I think if you can see the mechanism of the punch, you press it and the underside does all the work it gives you the hole - oppress it and the under part does the work. (Model 2 student review, Malibongwe, 16 August 2017)

Both Cebisa and Malibongwe reinforce their understanding of their narrative and their spatial models through the mind map exercise.

This section argues that a multimodal pedagogy for diversity includes multiple opportunities for modal or conceptual shifts within the design trajectory. This section draws on Stein's (2008) work on multimodal pedagogies, Newfield's 'transmodal moments' (2014), and Kell's (2015) framing of recontextualising and resemiotising moves in meaning-making trajectories. While the transmodal moment focuses on modal shifts, combining Kress's (2014a) concept of re-(inner) conceptualisation provides insight into not only the modal shifts, but also the conceptual shifts in meaning-making along the whole length of students' design trajectories. "The concept of the 'transmodal moment' brings into focus the way different modes encourage or enable different interests to be realised, providing different perspectives on a topic" (Newfield, 2014, p. 104). Moving design trajectories forward through a process of resemiotisation is more than just about changes to

the text but changes to the way the meaning-making conceptualises the meaning-maker's text.

6.3 Conclusion: guidelines for a multimodal pedagogy for diversity

In exploring the third research question, 'how can landscape architectural education draw on students' diverse resources to develop a multimodal pedagogy for diversity?' this chapter has focused on diverse students as meaning-(re)makers who transform resources into new signs. The chapter began by reviewing key concepts that underlie the analysis of data: the interest, resourcefulness and agency of meaning-(re)makers; processes of resemiotisation that involve transformation of material resources as well as re-(inner)conceptualisation of resources; and changing orders of visibility of the resources that students bring to their learning environment. The chapter problematised productive risk (Thesen & Cooper, 2014) and how six different students negotiated the 'contact

zone' between their own experiential resources and the spatial model assessment criteria. It also described the changes in 'risky' materials for model-building and how this impacted the design of landscape spaces and forms. It then highlighted the role of various pedagogical interventions as prompts for re-(inner)conceptualisation that mobilised students' design trajectories: crits, iterative trajectories, sketches, chalk drawings and mind maps.

To sum up, this chapter outlines a set of guidelines or principles for developing a multimodal pedagogy for diversity.

1. Recognition of diverse students' resources

Recognition is more than 'noticing' students' resources but a pedagogical approach that can theorise resources through a metalanguage and integrate the use of diverse resources into the classroom (Archer & Newfield, 2014, p. 5). Kerfoot and Hyltenstam (2017) describe this notion of recognition as constructing "different orders

of visibility” (p. 7) that not only provide connections between the landscape classroom and students’ everyday lives, but notices absences and endorses resources that may have been previously unnoticed (Archer & Newfield, 2014). Recognition is an antidote to a single perspective pedagogy and the imbalances this has produced in the past.

2. Recognition of resourcefulness as design precedent

Novice landscape architectural designers do not need to be labelled in terms of low design exposure to landscape precedent. Although students may not be armed with ‘well-acknowledged (design) resources’ (Mavers, 2007) their own experiential, social and interactive resources are more than adequate substitutes to the successful design of spatial experiences. Furthermore, the unconventional use of diverse non-material and material resources has the potential to innovate and disrupt landscape architectural design practices and contribute to the production of knowledge.

3. Deployment of prompts in multimodal and iterative design trajectories

The aim of landscape architectural design trajectories is the resolution of the design towards a particular direction. It is important for design pedagogies to facilitate students to mobilise resources in their design trajectory. Moments of re-(inner)conceptualisation are significant prompts to processes of resemiotisation. These moments include iterations of multimodal texts, group or peer crits; and transmodal moments such as sketching, chalk drawings and mind maps or similar conceptual exercises. It is important that these moments are both plentiful and varied because they may prompt resemiotisation in different trajectories at different times.

4. Engagement in the ‘contact zone’

Designing pedagogies that encourage students to draw on their own resources is not without risk. Responsible pedagogies provide a space for students to successfully

negotiate their own resources in order to access and transform dominant ways of knowing. Multimodal pedagogies for diversity go beyond recognising students' diverse resources by celebrating and encouraging the use of these resources. Successful engagement in the 'contact zone' between students' resources and the landscape architectural discourse results in the transformation of resources, producing new and diverse landscape architectural forms and spaces.

Resemiotization, in an attempt to compensate for that, takes the 'meaning-makers's perspective' [...] It is from this socially situated vantage point that the resemitization problematic gains its significance. In sum, if we regard meaning making as constituting the social construction of reality, then resemitization thinks not so much in textual representation as in *social construction*. (Iedema, 2003, pp. 49–50)

The remaking and redesign of landscape architectural design education draws on diverse students' resources that are a foil to the single dominant perspective.

CHAPTER 7

Conclusion

7.1 Overview of rationale and research questions

Design education is complex. Its lessons are often learned through practice (Schön, 1995) and its rules are often implicit. To a young designer, the design process may appear to be shrouded in mystery (Moore, 2010). This thesis was born out of a concern that diverse students, who have not had access to dominant landscape practices, may feel disconnected in the landscape architectural design classroom. Not wanting diversity to be a barrier to their educational success, I started reading about other researchers who were asking the same questions, researchers who saw how problematic it is, “to make people feel they are a failure, when late in the game, they don’t ‘make the team’ in a competition with others who have played the game all their lives” (Gee, 2000, p. 66). These researchers recognise that many of South Africa’s students have been systematically excluded from the dominant educational discourse, and set about ways of addressing this, usually framed in terms of ‘underpreparedness’ or

the 'articulation gap' (Jaffer & Garraway, 2016).

Between 2015 and 2017, higher education across South Africa was shaken by the #FeesMustFall and Decolonising Education movements. These movements turn the concept of 'underpreparedness' on its head: "the question of what constitutes the margins where, when and for whom, is perhaps more open than we have imagined" (Thesen, 2014, p. 5). Decolonising Education movements challenge the dominant status quo and critique the center's authority to define who is on the margins. It redefines the argument that the inequalities in financial and epistemological access to education can be addressed by improved resourcing to schools, or managing competing discourses. However, there is a fundamental problem that stems from a dominant, single-point-of-view, Global North ontology that disregards Global South contexts and often eliminates the knowledge economies it deems irrelevant. In the landscape architecture classroom, these contentions prompted an examination of the role of dominant discourses in diverse classrooms. Why

should landscape architecture, as a "specialised site of knowledge" (Cooper, 2014) be different, or unable to account for diverse perspectives and everyday knowledge? The case study examined in this thesis was informed by a multimodal social semiotic approach to pedagogy. This approach shifts from a focus on 'bridging gaps' in competence, to the recognition of the agency and resourcefulness of students. The aim was to recognise and validate the rich knowledge, resources and experiences that students bring with them to their landscape architectural learning environment. In doing so, this pedagogical approach begins to address past educational imbalances and inequalities, thus opening up spaces for diverse, Global South perspectives.

Embracing diverse students' resources, however, is not unproblematic. Despite the successes of the Decolonising Education and Global South movements, the landscape architectural industry operates within local and global social and economic structures that are still captured by Global North and single-perspective views. Subsequently, the role of multimodal pedagogies

for diversity carries a double burden: it would be unjust to create 'safe' educational spaces that value diverse students' resources if these students cannot gain entry to the dominant landscape architectural discourse and the social and economic prosperity it governs. To echo the words of Cadman, while this double burden represents a significant risk, "it is only by embracing some of these risks that I can ethically locate myself as a writer and teacher, and seriously urge their reconsideration by powerful actors within the global academy" (2014, p. 169). Going forward, I acknowledge my own position of privilege and gatekeeper to the landscape profession, while simultaneously being motivated to change current practices that dismiss and exclude. Positioned inside the single-perspective dominant discourse, I cannot assume to redefine the landscape architectural discourse on behalf of the Global South. The students I teach, however, have the agency and potential to realise change in the profession and its dominant discourse. It is my ethical responsibility to create learning environments that not only foster multiple perspectives and valorise diverse resources,

while also providing access to dominant discourses, but also to help students realise their potential to change the landscape architectural profession. Heeding Spivak's (2004) counsel against implying that the Global South cannot proceed without the indispensable 'supervision' (p. 535) of the Global North, does not mean that I am absolved from using my position to rethink pedagogies and "how we might imagine them differently" (Cadman, 2014, p. 185). This may require a shift in my role as educator "from provider of authoritatively held and dispensed knowledge to designer of apt environments for learning" (Bezemer & Kress, 2016, p. 134).

7.2 The case study

This thesis developed around a case study in the second half of the first year landscape architectural studio subject. The research questions encapsulate both ends of the double-edged sword of responsible pedagogies. The first question focuses on the recognition of students' resources while the second research question explores how students mobilise these resources in a landscape

architectural design trajectory. The exploration of this second research question includes how students access the landscape architectural design discipline and mediate between it and the resources that they bring. The design of the spatial model project provided moments to widen the project brief to include a range of diverse conceptual (narrative) and material resources, while also exposing students to some of the 'canon' through the values (assessment criteria) and design practices such as crits, precedent and spatial design theories. The third research question combines and extends the first two research questions: what resources do diverse students bring to their landscape architectural learning environment, how do they mobilise these resources to move between modes in a design trajectory, and how these contribute to a multimodal pedagogy for diversity?

In order to be able to recognise resources and trace their movements through a design trajectory, the methodology centred around data collection of a six week spatial model project. The data collection site included students' texts and their presentations as

multimodal ensembles. The texts provided moments of 'fixing' where students explain their design choices and also reflect on how and why they may have made these choices. To frame these choices, theories around space and visual and verbal meaning-making in landscape architectural design were used to inform this study's methodological framework. It maps out *meaning potentials*, or what landscape architectural spaces *could* mean in terms of ideational, interpersonal and textual metafunctions.

7.3 Summary of findings

Primarily I have argued for the construction of different orders of visibility (Kerfoot & Hyltenstam, 2017) and recognition of diverse students' resources (Archer & Newfield, 2014; Stein, 2008). Chapter 4 conducts a close analysis of Malibongwe's texts and the resources he brings to his spatial model trajectory. Malibongwe's project can be described as a 'Kressian moment' (Newfield, 2013) and shows the potential impact of student-selected narratives in landscape architectural

design projects. Malibongwe's narrative is prompted by his interest and his concern for the Marikana mine workers. Bringing the tragedy of the Marikana massacre into his project exposes the differences between students' everyday lives and the landscape architectural classroom and the types of resources and knowledge that may have been previously dismissed. For example, in his graphic narrative, Malibongwe's nuanced representation of the mineworkers reveals complex and multiple perspectives of their roles and identities.

Malibongwe draws on the resources he brings with him as prompts to his spatial model project. He abstracts concepts such as oppression and inequality and transforms these into innovative forms and spatial experiences. He takes up landscape architectural design practices embedded in his own goals and values (The New London Group, 1996, p. 87). He not only accesses landscape architectural discourse, but contributes to the production of new knowledge and contests conventional understandings of people and 'sense of place'. Finally, Malibongwe demonstrates the

potential for emergent meanings in design processes. Malibongwe's passion and care that he demonstrates throughout his trajectory, has helped me to recognise and identify some of the implicit criteria of landscape architectural assessment, such as modality and effort.

In Chapter 5 I explore the second research question in terms of the resources Nadine brings to her learning environment and how she mobilises these resources to move forward in her spatial model design trajectory. Through analysing Nadine's texts as 'punctuations' (Kress, 2010) in the design trajectory, I identify the experiential, social, semiotic, interactive and pedagogical resources that shape and prompt her meaning-making processes. This chapter investigates the resemiotisation process and traces the movement of resources and meanings. Nadine abstracts several themes from her narrative, including 'contrast' which may have been prompted by the visual argument of her graphic narrative. Nadine's section sketches, while not an explicit requirement, shows their potential as re-(inner)conceptualisations (Kress, 2014a) for 'testing out' the transformation

of a verbal narrative into three dimensional visual representations. I argue that the affordances of different modes prompt resemiotisation of resources at different times in a design trajectory. Tracing the movement of 'balance' from the Venn diagram in Nadine's graphic narrative, to the 'scales of justice' drawing in her sketches, to the differences in elevation of the spaces in her models, shows how resemiotisation processes move between material *expression* and non-material (re) *conceptualisation*. This notion is reinforced by the way emergent meanings were prompted by the 'tree holes' in Nadine's models.

Finally, Chapter 6 explores the role of diverse students as re-makers of landscape architectural design practices and education. I propose that multimodal pedagogies should not label young designers in terms of inexperience or low exposure and should recognise and celebrate their resourcefulness. Analysing Mbulelo and Thozama's spatial models reveals firstly, the types of resources that may have been invisible in the past, and secondly the potential for students to draw on diverse

resources in order to access and recontextualise the dominant landscape architectural discourse. Moving forward within design trajectories relies on moments and activities that prompt inner-(re)conceptualisation (Kress, 2014a) of meaning-making. These moments include both the diverse experiential, semiotic, social and knowledge resources students bring with them, as well as pedagogical resources such as crits and 1:1 drawing exercises. I argue that this balance between students' resources and their engagement in landscape design presents a degree of risk. Recognition of students' resources is not sufficient: landscape conventions and practices are mediated to students through the spatial model project. Students need to carefully negotiate the 'contact zone' (Pratt, 1999) between their resources and these conventions. To summarise this chapter's findings, multimodal pedagogies may: enable the construction of different orders of visibility (Kerfoot & Hyltenstam, 2017); inspire the design of learning environments in which students resources are not only recognised but validated; be used to make meaningful connections; be used to access landscape architectural discourse; and,

redesign landscape architecture, creating diverse ways of meaning, forms and practices.

7.4 Key Contributions

7.4.1 Theory and method: landscape architectural design

Viewing landscape architectural design processes through a multimodal social semiotic lens has provided new insights. Framing the landscape design process in terms of multimodal social semiotic meaning-making concepts such as prompt, inner(re)conceptualisation (Kress, 2010), resources, texts and multimodal ensembles, provides unique insight and clarity to understanding the difference between design *processes* and design *products*.

Defining landscape architecture in terms of Kress's (2010) notion of design as any meaning-making process goes some way to demystify how design processes take place. That landscape design processes equate to

everyday meaning-making processes, provides a strong counter to the argument that certain types of people make for better designers, or that design is something that can't be learned. A multimodal social semiotic approach is useful because it places focus on the interest, agency and resourcefulness of the meaning-(re)maker. Everyone, therefore, has the capacity (interest, agency and resourcefulness) to design and learn to design in the field of landscape architecture. The implications of this are particularly significant in light of diverse students registering for study in schools of landscape architecture around the world. As Sonwabo and Khanyiswa demonstrate, however, students' use of their experiential resources is not a guarantee of success, there are still risks involved that require negotiation.

In terms of landscape architectural methodologies, the framework developed in this thesis is useful in three ways. Firstly, the framework is used to analyse students' 2D and 3D texts in order to identify and make visible the resources diverse students brought to their design trajectories. The value of applying this framework to

analyse the students' trajectories reveals the extent to which spaces could mean (in terms of ideas, relationships and forms) in diverse contexts. For example, Malibongwe and Mbulelo draw on meanings that may have been previously ignored and design spaces that contrast starkly to traditional design examples in the landscape architectural classroom. Secondly, building on the work of Ravelli and McMurtrie (2016), the framework I developed outlines a set of questions for analysing the meaning potentials of landscape spaces. The framework develops a metalanguage that can be used in future research and teaching to describe and understand landscape spaces. Thirdly, it is significant that the framework outlines ideational, textual *and* interpersonal meanings of landscape spaces. Landscape architect and theorist James Corner (1999) identifies that "ideas about spatiality are moving away from physical objects and forms towards the variety of territorial, political and psychological social processes that flow through space" (p. 227). Foregrounding interpersonal and social meanings of space, challenges traditional landscape architectural design practices that tend to

value compositional and conceptual meanings. Going forward, the analytical framework developed here could be useful not only for analysing existing landscape spaces, but could influence the way that landscape architectural designers consider the range of meanings of spaces during the design process.

7.4.2 Multimodal social semiotics and resemiotisation

A multimodal social semiotic approach has been used to interrogate the 'grammar' of meaning-making in a range of fields, usually around images or visual communication (Kress & van Leeuwen, 2006). Recently, multimodal social semiotics has been expanding into the field of space-making of indoor architectural spaces including: airports (Björkvall et al., 2018, August), markets (Adami, 2018), exhibitions and museum spaces (Insulander, 2019; Ravelli & McMurtrie, 2016; Stenglin, 2008). This thesis contributes to the literature by investigating space as a mode in landscape architecture (outdoor spaces) and by developing a framework that includes

these types of spaces as texts.

Through careful analysis of students' design trajectories, this thesis has uncovered the types of resources students draw on including semiotic, experiential, social, interactive and pedagogical resources, thereby expanding the understanding of types of resources. 'Resource' is a key concept in multimodal social semiotic research that seeks to understand which resources are selected as most apt in the moment of meaning-making (Jewitt, 2014a; van Leeuwen, 2005, p. 5). While it is generally acknowledged that there are many 'means' to meaning-making including non-material, material, linguistic, spatial, social and cultural resources (Archer, 2014a; Harrop-Allin, 2014; Kress, 2010; Mavers, 2007; Simpson, 2015), there is a prevalence in multimodal social semiotic research to use the unqualified term 'resources' or refer only to 'semiotic resources'. The first research question of this thesis seeks to identify and recognise what resources students bring to their landscape architectural learning environment. At a micro-level, this thesis has identified

the semiotic resources students draw on in designing three-dimensional spaces, including non-material compositional resources such as coherence and salience, as well as material resources such as shape, colour and texture. Delimiting types of resources is necessary for their recognition and validation. This thesis has not only adopted concepts from a multimodal social semiotic approach to landscape architecture, but has also introduced landscape architectural design concepts such as precedent and guiding themes into multimodal social semiotic research.

There is substantial research into the way texts and meanings change through various phases of meaning-making processes (Bezemer & Kress, 2016; Iedema, 2003; Kell, 2015; Ker, 2015; Kress, 2014a; Newfield, 2014). This thesis has drawn on this body of research to understand processes of resemiotisation in design trajectories within landscape architectural education. This research explores the types of resources and moments that prompt resemiotisation processes and investigates the relationship between material and non-

material prompts. Kress's (2014a) notion of re-(inner) conceptualisation has been invaluable in identifying how students take up prompts to move forward in their design trajectories.

7.4.3 Landscape architecture pedagogy for diversity

Understanding the role of resources and how these move through processes of reconceptualisation and resemiotisation has been key to developing multimodal pedagogies for diversity that can draw on students' resources. At the same time, it provides an entry-point into the dominant discourse. In investigating the first research question 'how can landscape architectural education draw on students' diverse resources to develop a multimodal pedagogy for diversity?' this thesis has developed principles or guidelines for multimodal pedagogies for diversity. These principles are founded on four primary tenets: recognition of the rich and diverse resources students bring to their learning environment; acknowledgement that these resources

are apt 'precedent' for landscape architectural design processes; explicit attention to multimodal moments and activities that may prompt re-(inner)conceptualisation in design trajectories; and how students' engagement in the 'contact zone' contribute to the diversity of *what* and *how* landscape architectural spaces mean.

Analysing the resources that students draw on has highlighted resources that may have been excluded in the past. In the years following the case study, I showed new students Malibongwe's models before they began their own projects. I have observed an increasing number of narratives that include topics usually quite far removed from the landscape architectural classroom, such as depression, rape, xenophobia and corruption. I wonder if Malibongwe's determination to bring such contrasting experiences into the landscape architectural classroom encouraged other students to do the same. Malibongwe and the other students in this case study have opened the door for me as a teacher and for future students, in terms of the recognition and validation of students' diverse experiences and resources. The #FeesMustFall

and Decolonising Education movements have prompted my journey of exploration of multimodal pedagogies for diversity. Through this, I have had to acknowledge my own positionality and power and confront ideas of 'generosity' in light of the intense struggles and sacrifices of others. Even the idea of 'risk' as put forward by Thesen and Cooper (2014) and Cadman (2014) may have shifted: the Decolonising Education movement is advocating for pedagogies that not only mediate students' access to the canon, but provide for multiple perspectives, some of which may challenge and contest this canon.

As a final comment, this thesis rests on the earnest agency and wealth of resourcefulness of the diverse students in this study. Asanda's quote below, as she reflects on the value and lessons learned from the spatial model project, is particularly apt.

It's about making it happen. I think this whole project was basically you trying to make things happen or making things happen. We all have the potential ability to make

things happen (Focus group, Asanda, 27 November 2017).

As Kell (2015) shows, instead of focusing on the resources that are projected into meaning-making trajectories, these resources and processes can be seen to 'make people happen'. As much as the students in this case study are remaking landscape architecture, they are themselves, landscape-architects-in-the-(re)making.

AFTERWORD

Future directions

This thesis focuses on 'constructing different orders of visibility' of the resources diverse students bring to the landscape architecture classroom. The study aims to recognise the contexts, experiences and resources, such as informal settlements, miners, crime and fears, that may have previously been absent in landscape architectural studios. A multimodal pedagogy for diversity that validates students' brought-along experiences and design resources is however only a component of what is needed in the project to decolonise landscape architectural education. The decolonising education movement aims to expose and contest the dominant structures that currently monopolise the authority of knowledge in the world (Grosfoguel, 2011, p. 74). Because of the pervasiveness of these dominant structures, decolonising education in landscape architecture requires a thorough interrogation of pedagogy, curriculum, theory or canon, design practices, resources and contexts. Boone (n.d.) also notes the need to improve diverse representation of staff and students at educational institutions, engage in activism against oppression and to ensure that

inclusivity and equity are measurable outcomes of public space design.

What I briefly discuss here is the immediate direction of my research in decolonising landscape architecture education. I am inspired by the work of Boone (n.d.) and Raxworthy (2018) who highlight some of the critical steps that need to be taken to decolonise the current canon or history and theory of landscape architecture.

In his article *Black Landscapes Matter*, Boone (n.d.) criticises the existing bias towards privileged European and colonial landscapes. He calls for a recognition of what he terms a 'People's history' that includes making visible indigenous and vernacular landscape practices that have been excluded from the landscape architectural canon. Boone (n.d.) illustrates his argument by revealing the practices of the Wolof people of Senegal who were known for their expertise in rice cultivation as well as their genetic resistance to malaria. Slave owners plundered the Wolof community, exploiting their people as slaves, to tend their rice plantations in South Carolina. During

the construction of rice plantations at Middleton Place, white plantation owners and white workers, out of fear of contracting malaria, refused to work in the rice fields which were then planned, designed and constructed by the Wolof farmers. As an example of one of the earliest known designed landscapes in colonial America, Boone calls for the inclusion of Middleton Place plantations in landscape architectural history as well as the recognition of the Wolof farmers as landscape architects.

Similarly, Raxworthy (2018, p. 300) identifies that decolonising landscape architecture requires a critique of the Eurocentricity of landscape architectural history and theory. Raxworthy draws on Mignolo's (2011) work that discusses Castro-Gómez's 'zero point' and Fabian's 'denial of coeval' to

show how landscape architecture has excluded indigenous landscape-shaping practices from the canon by casting them as 'prehistoric'; placed inevitably at the start of all landscape architectural textbooks, before the 'real' Western history begins. (Raxworthy, 2018, p. 300)

Raxworthy (2018) shows how several of the primary textbooks in landscape architectural history and theory place indigenous and vernacular landscape practices within the 'prehistoric' landscape timeline and are excluded from landscape architectural practice. As another illustration of the 'denial of coeval', Raxworthy (2018) shows the similarities between unacknowledged Aboriginal land-management practices and the English landscape garden trends at the time of Western settlement in Australia.

What Boone and Raxworthy highlight is the need for further work in unpacking and exploring how and what we teach of the traditional canon of landscape architecture history and theory. There is much to unlearn and uncover, for example, documenting the role of slaves as designers and makers of Cape vernacular landscapes; or remembering the forgotten communities who were displaced in order to construct Central Park; or acknowledging that the often lauded Italian and French Renaissance gardens are examples of gardens of privilege and cannot be untangled

from corrupt wealth accumulation and oppression of marginalised communities. I am interested in the application of Cooper and Thesen's (2014) concept of 'productive risk' to the decolonising of the landscape canon in the classroom. How can we re-represent the canon of landscape architecture that makes space for the invisible, the untold stories, acknowledging unequal privileges, injustices, asymmetrical power structures and colonialism? Decolonising education calls for us not only to construct 'different orders of visibility' of students' resources, but also those of indigenous and vernacular landscape architectural practices.

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Appendices

Appendix A Poster brief

Project One

Choose a story

1. Choose a story / narrative

Your task is to find a story that you will use this semester as your inspiration to design an spatial model (Project 1).

There is no limit to the source of story or its genre - real-life events, a movie, a song, a piece of music, fantasy, science-fiction, news, autobiography (yours or someone else), a book!

Because you will be using this story for the entire semester it is important that you select a story that is meaningful or special to you - something that you can identify with or relate to. Don't just pick your favourite movie at the moment, try to find a story that has depth and complexity. The general formula to a story is a character + a setting + a conflict + a resolution. Good stories contain something that happens ... that could cause a change.

2. Illustrate the story / narrative

Imagine that you are trying to describe your story to someone who cannot speak the same language as you. How would you communicate the essence of the story to this person through visual - means?

You can consider communicating the structure of the story (e.g. the pace or sequence of events) as well as how the story makes you feel (e.g. sad, happy, fulfilled, disappointed).

Here are some questions that you can ask yourself:

- How does the story move through time - it is set over a short period or a long period? Is the pace of the story the same throughout?

- Does the story take place in one location with one character or are there multiple locations and multiple characters?
- How do you (and others) relate or identify with this story? What does it make you feel / think of / remember?
- What is the tone of the story / how does the tone change? Here are some suggestions for adjectives: Light, happy, joyous, inspirational, uplifting, loud, grand, energetic, sad, bittersweet, dark, frightening, meditative, relaxing, aggressive, playful, brooding, wistful, confident, harsh, warm, detached, ironic, carefree, restoring, bleak, graceful, rejuvenating, imaginative, healing, somber, unconventional, stirring, reflective, provocative.
- What is the ultimate message of the story?

The story must be illustrated on an A3 poster. You may use any media (pen, coloured pencils, markers, digital, paint) that would be the optimal representation of your story. There may not be more than 5 words on the poster. (Please ensure your name, surname and student number are on the back of the poster).

Appendix B Poster presentation comment sheet

Poster presentation / comment sheet

Your name / signature:		Today's date:	
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1. Present your poster and story to the other students in your group.
2. Discuss the following questions with your group members and write down a summary of your discussion for each.

Discussion items	Comments
Why did you select this particular story / what is meaningful about the story?	
How did you represent aspects of the story in two dimensions?	
What are some of the themes represented in your story? (Try to write down at least 5 themes / key words).	

Project One Model brief

Introduction

In the previous semester we began to learn some of the language of design, phrases such as *ground planes, symmetry, axis, movement, hierarchy*. The main focus was to **identify** (through analysis) and **draw** these elements using diagrammatic landscape drawing conventions.

This semester we will continue to build up our vocabulary of the language of design by actually **designing** a conceptual model and a landscape residential design.

Landscape design is usually a complex process involving cyclical phases of concept and design development that responds to context, the brief and maintains an identifiable concept. The first project we will engage in this semester simplifies some of this process by focusing on the development of a **single spatial model** that will be designed to give particular characteristics to its form and spaces.

*"The initial phase of any design process is the **recognition of a problematic condition and the decision to find a solution to it**. Design is above all, a wilful act, a purposeful endeavour. A designer must first document the existing conditions to a problem, define its context, and collect relevant data to be assimilated and analysed. This is the critical phase of the design process since the nature of a **solution is inexorably related to how a problem is perceived, defined and articulated**." (Ching, 2015)*

Designs can be strengthened by a good conceptual basis and if they relate well to their context. In this project, the story that you have chosen will provide inspiration for your concept. It is important that you understand that the story you have chosen is going to be what your final design is evaluated on. For example if one of the elements of your story is "soft" and all your forms are hard and angular as opposed to organic and flowing, you are not going to receive a very good mark. In other words, your story is part of the **problematic condition** for which you need to find design **solution**.

3D spatial model design

Now that you have chosen your story and represented this in two dimensions, you are going to design an abstract spatial (three dimensional) model through an ongoing conceptual development process.

Through this task you are also going to experience the cyclical nature of design: you will not be designing one model for submission but will spend several weeks exploring and experimenting with spatial design ideas before adjusting and refining the design. Each week you will rebuild at least one model so that at the end of the project you have a record of your process.

What do you need to build this model:

- Materials such as: corrugated cardboard (often grocery shops give boxes away for free so don't go out and buy this), dowel sticks, skewers, polystyrene, string, wire, pins, fabric. There are no restrictions to what material you may reasonably choose to use.
- Scissors
- NT cutter (For safety reasons please ensure that all fingers and thumb are clear of the edge of the ruler before making any cut. For thicker cardboard, aim for making several cuts on top of each other than trying to cut through in one go. Always cut on a cutting mat or board or scrap corrugated cardboard and NEVER directly on a drawing board or light table.)
- Clear glue / Cold glue
- Stainless steel ruler / cheap plastic ruler (PLEASE DO NOT USE YOUR SCALE RULER AS AN EDGE FOR A CUTTING BLADE.)
- Cutting mat

Some of these tools will be provided but you will have to share with classmates.

What is expected of you during the project:

- attendance of two studio sessions per week (DP requires a minimum of 80% attendance)
- participation of a minimum of 2 crits per week: at least one with a lecturer and one with a peer / student / tutor
- record crit sessions on comment sheet
- design of at least one model per week
- collate rough work / drawings / sketches in a progress book
- reflections on project on Facebook blog once per week

What is expected of you for the final submission:

- The final designed and constructed model that represents a particular **spatial experience** that relates to the story that you have chosen.
- The final model must be presented with the process models, in sequential order.
- The models must include at least one wall, ground and overhead plane.
- The models must be to an appropriate scale (recommended scale 1:50).
- The final model must be a minimum of 100 X 100 X 100mm and a maximum of 300 X 300 X 300mm but does not have to be a cube / square.
- The model must be built on a solid base, must be sturdy (no unintentionally loose parts) and must be able to stand on its own without falling down.
- The model may be built from any material but there must be an intentional link between the material used and the spatial experience that is being conveyed. The material used is representational and does not need to be literal.
- Please include a person (to scale) in the final model.
- The process drawings / sketch book and comment sheets must also be included in the submission.
- A scaled, hand-drawn plan and two sections - of any model - must be included with the submission. Please include a person in your sections. Don't forget a title block.
- Please refer to the rubric regarding assessment.

Additional notes:

This is an usual project for a landscape architectural design in that there is no context or site or environment and no client. At most you can imagine that the project is an installation in a public park.

There are many reasons to design with models (Dunn 2010). Models can be used to explore:

- design concepts
- spatial design
- structure / construction methods
- realistic representations for client presentations / exhibitions

This particular project is to design a **spatial** model: this means the focus is on the types of **spaces** created. The nature of these spaces can be determined by configurations of ground, wall and overhead planes as well as the dimensions and textures of these planes. While texture and materiality of planes does play a role, we would like you to focus on the **design of the spaces** themselves and not to worry too much about the reality of constructing these planes. For example it is enough to show in your model that a space is defined by a solid, smooth wall plane of a certain thickness - you do not need to explain or

Appendix D Assessment rubric

Assessment rubric

Weighting	Criteria	Beginning (0 - 50%)	Potential (50 - 65%)	Meets criteria (65 - 75%)	Exceeds criteria (75% +)
	Comment sheets				
	Comment sheets show a minimum of 2 crits per week (one lecturer, one peer / tutor) and demonstrate the 80% attendance required for DP.				
	Process book				
5%	The story has been illustrated in two dimensions so as to communicate an aspect of the story such as themes, concept, plot, rhythm, change, emotion etc.				
10%	There is evidence of students' sketches showing crits or exploration of ideas and discussions				
	Models				
15%	The progress models display a journey of learning, interest, investigation, questioning and exploring alternatives.				
5%	The final model size is between 100 X 100 X 100mm and 300 X 300 X 300mm and includes at least one ground, wall or sky plane.				
20%	The final model is a unified and multifunctional composition that demonstrates a relationship between the forms and subsequent spaces that have been designed, and the nature of the story.				
20%	The model represents an (interactive) spatial experience and avoids overuse of literal representations and 2D symbols. The spatial experience is more than just a single sculptural element.				
10%	The models show understanding, exploration and application of concepts of elements and principles of design.				
	Model construction				
5%	The model is sturdy and has been constructed carefully and neatly with attention to detail.				
	Drawings				
10%	There is a scaled plan and two sections / elevations that accurately depict the model at any phase. The drawings are elegantly presented and make good use of drawing conventions and line weights.				

Appendix E Model 1 comment sheet

Peer / tutor comment sheet

Your name / signature:		Today's date:	
Reviewer name / signature:		Model number:	

	Quick checklist	Comments
	Does the model fit into the required size?	
	Is the model to scale?	
	Does the model include a ground, wall and sky plane?	
	Is the model sturdy?	

In-depth analysis	Comments
What are the criteria / themes for the model and how have they been represented?	
Are the elements of the the model multifunctional and link together / are unified or is each theme represented by a separated element on the model?	
Are the themes in the model represented literally or by symbols?	
How would a person experience the spatial model?	
Is there an element of the model that seems out of place? What could you gain / lost by removing this element?	
Is your model symmetrical or asymmetrical? What does this do to support / not support your story / themes?	
Brainstorm some alternative "what if I do this?" ideas. Test these ideas by asking how they fit in / don't fit in with the story / themes of the model.	

Lecturer comment sheet

Your name / signature:		Today's date:	
Reviewer name / signature:		Model number:	

Comments:

Student to complete after crit:

What were the main points discussed in the crit?	
What are my next steps?	

Appendix F Chalk drawing brief

Project one Full scale plan

1:1 scale

Today's exercise is an attempt to draw the basic plan of your Model 2, in chalk, at a scale of 1:1. You will be placed in groups and need to assist each group member in correctly measuring out and drawing the base plan of each of your models.

- Show wall planes with the correct thickness - don't just draw one line.
- Don't forget to show sky planes in dashed lines or another coloured chalk.

Once you have completed your 1:1 scale drawing of your model, another group member can film you "walking through" your model and explaining the intended experience as you do so.

Please also photograph your 1:1 model to include in your Facebook blog post (see below).

Facebook reflection

This exercise is intended to replace one of your three weekly blog assignments (i.e. it does not need to be done in addition to the three weekly posts).

The blog post must be a reflection of the 1:1 drawing exercise and how it influenced your thinking around your model. You may consider answering some of the questions:

- to what extent did drawing the 1:1 plan affect your thinking about your model?
- how did you and others experience (walking through) your 1:1 model?
- what changes do you think you may make to your next model?
- what were the opportunities and limitations of this exercise?

The blog post should be between 300 and 500 words and must include at least one photo of your model and one photo of your 1:1 chalk drawing.

Peer / tutor comment sheet

Your name / signature:		Today's date:	
Reviewer name / signature:		Model number:	

	Quick checklist	Comments
	Does the model fit into the required size?	
	Is the model to scale? What is the scale?	
	Does the model include a ground, wall and sky plane?	
	Is the model construction sturdy?	

In-depth analysis	Comments
What are the main concepts / themes from your story and how have they been represented in your model?	
Can you describe the primary spatial experience of your model?	
How has the mind map exercise helped you to think about your model and its concepts?	

Lecturer comment sheet

Your name / signature:		Today's date:	
Reviewer name / signature:		Model number:	

Comments:

Student to complete after crit:

What were the main points discussed in the crit?	
What are my next steps?	

Appendix H Model 3 comment sheet

Peer / tutor comment sheet

Your name / signature:		Today's date:	
Reviewer name / signature:		Model number:	

In the "Abstract" documentary about illustrator Christoph Nieman he describes his idea of an "Abstract-o-meter" with realism on one end and abstraction on the other end. For each of the concepts or themes in your model, think about how you have represented these on your model, and where this would sit on the "Abstract-o-meter":

Concept / theme	Abstract-o-meter

Christoph Nieman also makes a statement that "each idea requires a very specific amount of information".

What is the very specific information that you know that you are have used to develop your model?	
If your model was built in real life, what is the very specific information that you hope others may know in order to experience or understand the spatial experience you have created?	

Lecturer comment sheet

Your name / signature:		Today's date:	
Reviewer name / signature:		Model number:	

Comments:

Appendix I Summary of student research participants

Student to complete after crit:

What were the main points discussed in the crit?	
What are my next steps?	

Pseudonym	Gender & Age in 2017	Place of birth / childhood	Attended Foundation	Narrative / inspiration
Asanda	F	Cape Town, WC		Traditional story
Bulelani	M			Personal narrative
Calvin	M	Athlone, WC		Environmental issues, recycling
Cebisa	F	Johannesburg, GT / Mdantsane, EC		Personal narrative: overcoming fear
Darryl	M	Bridgetown / Athlone / Bellville, WC		Movie: "Toy Story"
Dave	M	Bothasig / Durbanville, WC		Movie: "The Alchemist"
Elethu	F 19	Cala, EC		Movie: "Diary of a mad black woman"
Eshile	F			Tyler Perry
Fezeka	F 26	Butterworth / Port Elizabeth, EC	Y	Personal narrative: hospitality industry to LA
Khanyiswa	F 20	Cape Town, WC / EC		Pride and Prejudice
Khwezi	M 23	Khayelitsha, WC	Y	Wrote own story
Kim	F 25	Johannesburg, GT / Cape Town, WC		Movie: "Paper towns"
Malibongwe	M 26	Lady Frere, EC / Cape Town, WC		Marikana massacre
Mbali	F 24	Ceza, KZN	Y	Song "I made it" by Cassper Nyovest
Mbulelo	M			Personal narrative: rags to riches
Michael	M			TV show: "Courage the cowardly dog"

Nadine	F 23	Zeekoeivlei, WC	Y	Nature vs urbanisation
Nathi	M	Makhaza, WC	Y	Family feud
Nelisiwe	F	East London, EC	Y	Movie: "Hear me move"
Nontobeko	F 21	Dokodela, EC	Y	Movie: "War Room"
Olwethu	F	Cape Town, WC		Movie: "The Hunger Games"
Rayyan	M 21	Hanover Park, WC	Y	Melting ice caps
Phumza	M	Gatyana, EC / Cape Town, WC		Movie: "The Pursuit of Happyness"
Sonwabile	M	Mdantsane, EC / Johannesburg, GT		Wrote own story
Sonwabo	M 22	Lady Frere, EC	Y	Personal narrative: soccer
Teboho	M 23	Mount Fletcher, EC		Personal narrative: changing perspective
Themba	M 20	Klerksdorp, North West, / Vereeniging, GT / Butterworth, EC		Song: "Man in the Mirror" by Michael Jackson
Thozama	F	King Williams Town / Ilitha Township, EC	Y	Song "I'll run to Him" by the Dominions
Trent	M 20	Paarl / Wellington, WC		Personal narrative: heart break
Vusi	M			Song: "Heart like a lion"
Vuyani	M 24	Mthatha, EC	Y	Wrote own story
Wandile	M	EC		Song "Glory" by Common and John Legend
Xola	M	Ngcobo, EC	Y	Short story about betrayal
Zimkhitha	F 19	Mthatha, EC		isiXhosa culture

Appendix J Extract from Malibongwe's Model 3 crit

Extract from Model 3 crit, Malibongwe, 23 August 2017

Christine: So where – how did you get to this point? Like what – like what has inspired you to build in this particular way?

Malibongwe: You see, to tell you the truth, you see to tell you the truth, what happened in Marikana really troubles me a lot. So like I think coming up with the way to show how I feel, like that's what motivated me to come to this stage.

Christine: So you just felt such a deep, personal connection?

Malibongwe: Yeah.

Christine: And is this a personal question to ask – you don't have to answer if you don't want to, but did you know someone who was involved with Marikana?

Asanda: I wanted to ask that as well.

Malibongwe: No.

Christine: No? But it's just – you just feel deeply affected by the injustice of it all?

Malibongwe: Yeah.

Asanda: Do you know anyone that worked in the mines or any type of mine though?

Malibongwe: Yeah.

Asanda: Okay, maybe that's why.

Christine: Okay, so there is a connection, not necessarily directly to Marikana but to this mining...

Malibongwe: Yeah, maybe someday it can happen to them, who knows?

Appendix K Extracts of Malibongwe's crit discussions about the meaning of the shell in his models

Extract from Model 3 crit, Malibongwe, 23 August 2017

Malibongwe: The shell represents the prize like they actually wanted R12 500 and they negotiated and they actually got R12 500 so like they achieved what they were – they wanted. Yeah, that's what the shell represents.

Christine: I don't understand. But it sounds great. What is the connection? What, for you, does that shell represent?

Malibongwe: Actually, to tell you the truth I just picked up the shell [*everyone laughs*].

Christine: That's fine, where did you pick up the shell?

Malibongwe: There by the *Phoenix reclinata* at the park.

Christine: Okay, at the park, sure. So isn't that shell quite rare? Are there lots of shells there?

Malibongwe: No, it was the only one I think, two of them, there were two of them.

Christine: So maybe, maybe, that is your story then? Like the way you found the shell represents, this achieving something that was quite difficult?

Malibongwe: Yeah.

Christine: You may have gone to a beach where there are a thousand shells and picked one up.

Malibongwe: I could say that, yeah.

Christine: No, you can. Sometimes in landscape architecture you can [post-rationalise] your story. You know it doesn't, you know you can sometimes build meaning into things that you don't realise at the time. [...] You could have put anything there and you could have put – a piece of paper or money or ... but you didn't. You chose the shell so there is something going on somewhere in your thought process.

Malibongwe: With the shell, yeah.

Extract from Final presentation, Malibongwe, 30 August 2017

In his final model presentation, Malibongwe has taken ownership of and expanded on this interpretation of meaning:

Malibongwe: It took me a lot of effort to get the shell so that's why I did include it in my models. Like some like these people, like it took them a lot of time, bloodshed and people getting injured. Some losing their lives so that they can get their reward at the end of the day because they ended up getting the R12 500.00 they were looking for. So that's why I used the shell in my model.

Appendix L Extract of Khanyiswa's Model 2 crit

Extract from Model 2 crit, Khanyiswa, 14 August 2017

Christine: So there's an element of surprise there, isn't there? Like the story has this twist that's not - so how, have you managed to show that in your model, this unexpected - I'm going to write here, twist, surprise, unexpected? Do you think there's a way...

Khanyiswa: I haven't quite shown that yet in the model.

Christine: Do you think that that would be something you could think about showing? Like bringing that in, what do you think?

Khanyiswa: I think adding colour or something.

Christine: Colour is a good idea because maybe, like Mbulelo says, it's also like it can, here it means something and in your model it could mean that element of surprise. So maybe you're right. Maybe there's something that you could use with colour to show something surprising. Or how, like what makes something surprising?

Khanyiswa: A bright colour stands out.

Mbulelo: It's like, it stands out.

Christine: So something stands out. What's the opposite of something being surprising. What's the opposite of surprise. Like how would you show that, or what word would you use if something's not surprising?

Mbulelo: Normal.

Christine: Yeah. So the opposite of that is normal or maybe boring. So to have something surprising means that you could have something that is all the same and suddenly that gets disrupted in any way. [...] You've got this wall that continues and some – this wall disappears. So you're already starting to create something that has some potential there to show that something's been disrupted or surprised or the unexpected. People don't really expect the whole...

Mbulelo: Or like a disconnection or something.

Christine: Yes. A disconnection. I like that. So I think maybe you've already got something there but could make it more, make it more surprising. [...] What do the rest of you think about this model? What are the next steps? How can we push it even further?

Mbulelo: Make it to scale.

Christine: I think it is to scale if it's 1:20. But again, I think we need to start thinking about these other things. So we've got, because we've been focusing on this, the primary experience. So you've got this main thing of this pedestal and I wonder if we can start to think about, what are the secondary experiences? What are the add ons, you know? And I think that's maybe where you can start to think about where is your sky plane? What do you do with it? How,

and how does that sky plane reinforce some of the ideas, you know, that you are seeing in your model as well and your story? And also, how do people experience this? If you have to have a person walk into that space so they're surrounded by these other people, you know, are they one of those people in the story? [...] You're playing with the ground plane really nicely. I wonder, yeah think about it like bigger. Like how do you make that your whole model? You know, like could it be a much bigger idea in a way? Yeah. Does that help?

Khanyiswa: Yes, it does.

Christine: Do you have any questions?

Khanyiswa: Not really.

Christine: Do you have a way forward? Do you have something in your mind?

Khanyiswa: I think if I use colour to make the wall plane maybe like a light colour so that it, I wouldn't have to cut it. I just put it there and then it will present [inaudible] as a plane and then when people look up it seems like a sky, like the outside.

Christine: That could be very interesting. Yeah got that feeling of being outside.

Mbulelo: Or you could do something like a sky plane, which is like a dome like shape but like an umbrella shape like different colours like the bright colours, which

will represent the person because she said the guy was like a wellknown person so everyone was like, he was like the talk of the town and stuff.

Elethu: The main focus.

Mbulelo: The main focus. So if you enter through that space then there's these bright colours then the sun rays is just penetrating then there's these bright colours on the floor also on the roof.

Christine: I think that could be very interesting. Yeah. So that's a good idea.