

**STRUCTURE AND SYSTEM  
AS BASIC METAPHORS IN LITERARY STUDIES:  
A CRITICISM OF ONE ASPECT OF CONTEMPORARY  
STRUCTURALISM**

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## PREFACE

The subject of this essay is Structuralism, and the point of view, that of a student of literature. And this much the title conveys. However, there are points which need to be made by way of a preface in order to clarify what this essay attempts and what it does not.

First, there is the problem faced by any writer on Structuralism - definition of his subject. This problem has been sufficiently talked about in the text, along with how a recognition of it generated the essay's form, and no more need be said on this matter here. But, second, it must be stressed that, though this is an essay in criticism of a style of thought, it has no pretensions to being an essay in philosophy. Rather than progressing by way of a rigorous analysis of a set of concepts, its motivating spirit is more justly characterized as that of a critical review. The hope is to illuminate and, as well, to suggest points of weakness which, I believe, deserve the probing for soundness which rigorous analysis provides. However, though this is itself not an essay in philosophy, I have attempted to treat the abstractions I deal with, and the argument-forms I deal with them in, with respect. The same might be said of my treatment of ideas belonging to the other disciplines - mathematics and linguistics - in which I could not be considered a specialist.

I have tried at all times to express the special viewpoint of a student of literature. This leads me to the third point. The areas of thought this examination has led me into are not those usually familiar to (or interesting to) the literary critic. But as they are relevant to Structuralism in literary studies, and because they help expose more clearly the cause of any inadequacies sensed in this approach (and explain why they should exist), it was thought worthwhile that they should be entered into. This led to the problem that a large amount of background material had to be provided in order that the necessary points in description and criticism would have full intelligibility, and this material may be felt irrelevant to purely literary concerns. This problem loomed prominent in Chapter Three especially, and the solution chosen led to an unavoidable imbalance. This chapter (on linguistics) is by far the longest in the essay (on the study of literature). But in order that detailed criticism could take place (and to be at all convincing, criticism had to be detailed), an equally detailed exposition of Chomsky's thought had to be offered. And resorting to placing it in yet another appendix would have been a solution more exasperating (for the reader) than honest.

Finally, as so much background material appeared necessary, I dealt with each different area of thought separately, each chapter being a more or less self-contained "block". Any other design would, I believe,

have resulted in an unwieldy mass of cross-references and footnotes, and there would have been no gain in clarity.

While this essay was being written, two books became available which, had they arrived earlier, may well have changed the shape and content of this essay. As it is, I have had the opportunity only of referring to them occasionally in the text where they seemed most relevant. Pettit (1975) deals with much the same subject-matter, and, too, makes use of the work of Black, Hesse, etc., in elucidating the Structuralist programme. He does not, however, appear to concern himself with a criticism of the Structuralist archetype in language-study. Robinson (1975) is perhaps potentially more interesting, being written by a respected English literary critic. Much of what he says on Chomsky could be related to the content of Chapter Three; it is unfortunate though that his style of approach to the subject makes most of Searle's criticisms (I believe) apposite. (See Searle (1975).)

For the sake of neatness, I have used, as a mode of citation within the text and in footnotes, the "Harvard" system - see, for example, the University of the Witwatersrand's Style manual for Theses and Dissertations (Johannesburg, 1971), pp. 13 and 17. The form of the bibliographical entries follows the corresponding style.

Finally, I would like to acknowledge a number of debts, of different kinds, to both people and institutions.

First, I am indebted to the University of Cape Town and to the Trustees of the F. G. Connock Bursary for financial assistance towards meeting the cost of the research necessary for the writing of this essay. Opinions expressed or conclusions reached are, of course, my own, and not to be regarded as a reflection of the opinions held by either body. It is the right moment now to express as well my sincerest thanks to Miss Q. Paine for the generous loan that made my years of preparatory undergraduate study possible.

My greatest (specifically "academic") debt is to Dr J. M. Coetzee, first, for opening up new and relevant areas of thought, and second, for providing the needed guidance through them. There are, I am aware, many ways in which I could have profited much more from his criticisms and insights. I would also like to thank Dr M. Beatty for the hours spent in informal discussion on issues, which, though not directly related to what follows, make a study such as the one that follows relevant. Special thanks also to my parents and Mrs P. Kitson for their invaluable assistance (under circumstances not the easiest) in the production of this thesis. And finally, I would like to express unqualified gratitude to Carol Mizroch for giving the complete comradeship that helped make this exploration a joy.

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## CHAPTER ONE

### LANGUAGE, METAPHOR AND ARCHETYPES

It has been said of Existentialism that there is no such thing - that there are only Existentialisms. And the same may justly be said of Structuralism. For though the source of a significant number of ideas held in common by Structuralists (and by some who refuse that name) can be traced to the linguistics of Saussure, individual writers tend to use one or more of the insights central to his work as points of departure for their own thought, rather than systematically develop his doctrine as a whole <sup>1</sup>.

This is especially so when his ideas appear in disciplines other than linguistics; to which Structuralist

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<sup>1</sup> But even this picture needs further qualification. For Structuralism has been found in an extraordinarily diverse number of places; not only in all the disciplines known as the "human sciences" (among which the study of literature sometimes finds itself placed), but also in the creative arts (taken to include mathematics), where Structuralists number Boulez, Mondrian, Beckett (and Brecht) .... Now, obviously, Structuralism cannot be distinguished by a debt to Saussure in all these cases. To account for this diversity, a history of Structuralism may perhaps conclude that it consists of a series of parallel developments (which would include Formalism and its inspiration - see, for example, Jameson (1972) and Erlich (1975)), all products of a Zeitgeist to which Saussure was particularly well attuned. But this question is of no urgency where Structuralism as an approach to the study of literature is concerned. In most cases, this approach draws inspiration from linguistics (derived mainly from Saussure); and in cases where it does not (for example, in Goldmann's sociological analyses), similarities are sufficient for what follows in this essay to be relevant.

writers on literature provide no exception. Any attempt to discover the "Structuralism" in studies of literature so-labelled encounters an obvious and puzzling multiformity. There is, as Barthes, the most sparkling of Structuralists, acknowledges, no "school", no "movement", no awareness in Structuralist writers "of being united by any solidarity of doctrine or commitment" (1964c, p. 214). This would seem to make general criticism impossible, were criticism felt necessary. Each writer would have to be assessed according to the merits of his individual achievement. Yet there does seem to be, even if this is not openly admitted and exploited, a common element, a common strain of thought that can be found in varying degrees of prominence in the work of writers such as Barthes, Todorov, Greimas, Genette, Jakobson and Lévi-Strauss. Each has, in one way or another, been influenced by the most general of Saussure's slogans: that language is a system. In one way or another, each tends to view literature as if it were a system of much the same sort that Saussure believed language to be. And it is, I believe, in this influence that much of the dissatisfaction that might be felt with their work would have its cause.

Thus though individual writers may draw inspiration from Saussure's original idea in different ways, there remains, on quite a general level, the possibility of a criticism that, while ignoring individual differences, is aimed at an important, if not defining, aspect of the

Structuralist approach to literature. Still, the problem persists: how can the common idea of system be approached if not by generalization from the particular ways in which it is put to use? To this problem, a remark that occurs towards the end of the preface to a recent critical study provides, I believe, a useful solution.

We find ourselves ultimately before the conclusion that the attempt to see the literary work as a linguistic system is in reality the application of a metaphor.

(Jameson, 1972, p. vii)

The point is essentially correct; and can be related to the recognition, that forms the basis of M. H. Abrams' excellent study of the Romantic tradition in The Mirror and the Lamp, of the role metaphor can play in literary criticism. In the preface to this work, he writes:

[During the history of critical thinking] a number of concepts most rewarding in clarifying the nature and criteria of art were not found simply in the examination of aesthetic facts, but seem to have emerged from the exploration of serviceable analogues, whose properties were, by metaphorical transfer, predicated of a work of art.

(1953, p. vi)

If the Structuralist use of "system" is seen in the light of these ideas, a method of general criticism suggests itself. "System", as a potential metaphor for the literary work, may become the subject of evaluation. In this way, descent into a welter of particular differences and individual developments, of transformations and possible inconsistencies (Barthes, in a way mirroring all Structuralism, has well deserved the epithet "Protean"), is usefully avoided - usefully, for at the level of

general criticism particular details do not matter. The properties of "system" (and "structure") as "serviceable analogues" may provide a focus for attention; for it is one or more of these properties that would be involved in the metaphoric transfer.

The analogue is, of course, to be found in linguistics: the system of language that is the object of the linguist's study. But a moment's reflection suggests that in this use too not all is "literal". Language is a complex phenomenon; but is it obviously a "system"? The word in this context as well appears to be a metaphor - at least, until proved otherwise. And its use in the Structuralist study of literature begins to look as though it is a metaphor itself based in turn on a metaphor which could usefully bear study. Any study of literature would, trivially, have, in some way or other, to take language (and metaphor) into account; and particular ideas about these would be implied by a particular approach to literature. But the Structuralist approach appears to involve these ideas in a way beyond normal. For, beyond implying ideas about the nature of language, language, itself seen through a metaphor, becomes a metaphor for literature.

From this opening onto Structuralism, the first question that raises itself is: what does it mean to say that "system" is being used as a metaphor? The idea is distinctively modern, and is related to a similarly modern view of language in its meaning-bearing aspect,

one crucial to any study of a literary work. And as it is this same "language" that Structuralists claim is a "system", the question is worth going into in some detail. Furthermore, answering the question discloses related topics (the "static" Literalist view of language the modern view is opposed to, and the important role ideas of "context" play in this modern view) which will prove a useful introduction to much that follows in the later chapters. The remainder of this chapter, therefore, will be devoted to drawing out the strands of thought relevant to its answer.

There is a distinction at a high level of generality commonly made between two ways of thinking about language - the one, "prescriptive", the other, "descriptive" (see, for example, Lyons (1968), pp. 42-44, and Cohen (1966), p. 3 ff.). The generalization concerns cultural tendencies under whose domination, admittedly, individual opinions may differ. Nevertheless, the disparity between the two tendencies is marked enough for the distinction to be valid - and, for the particular purposes here, Cohen's development of it, for its concern with meaning, obviously relevant to any study of literature and metaphor, of interest.

The study of language was, until about the late eighteenth century, a normative discipline. Characteristically it was thought either that words had certain meanings whose acknowledgement was obligatory on the part of the language-user, or that a particular dialect

within a language was a model for "correct" usage. Or, as in the oft-cited case of Hobbes, a particularly limited use of words within one preferred dialect was considered reasoned speech, while all remaining was relegated to the realms of nonsense or falsehood. Motivation was conservative. As in the realm of contemporary political thinking (not unrelated), the past provided standards of excellence. Linguistic change was, of course, noticed, but it was not unusual to find the contemporary state of language understood as providing evidence of moral or social decay.

The attitude to linguistic change at a more fundamental level links with the prevailing understanding of the relation of words to reality. From the Judaic tradition came the idea of words as names. The Greek tradition provided no different; for it is only with this idea affirmed that debate as to whether the names of things are assigned naturally or by convention could be meaningful. Reality, different philosophical positions aside, was truly "given", and upon this reality the significations of words was dependent. However revealed, reality provided a stable arbiter on the question of significations, being a constant presence of "things" to be "named". With such a view, if change is to be allowed language, it can only be the inclusion of words on account of discoveries or inventions (and the exclusion of words on account of their loss of usefulness). Thus, at any one time, language is in a stable state, a

collection of words each of which, because of the uncomplicated relation of words to reality, being capable of clear, exact definition. This view can, for this reason, be labelled "static". Cohen's comment apropos the thought of a seventeenth century grammarian is relevant, and points to what this view does not take into consideration.

He conceived of linguistic change primarily as the appearance of new words or combinations of words and the disappearance of old ones, not as a combination of this with a process of transformation in the meanings of continuously existing words.  
(1966, p. 7)

It is this "transformation" (among other things) that the second view attempts to take into account.

Specifically modern is the idea that language is a phenomenon worthy of study in its own right. Interest turns from being normative to descriptive and analytic. Cohen, tracing the change, cites evidence of dissatisfaction in the latter half of the eighteenth century with the normative approach for its being unrealistic, and even as harmful to the "strength" of the language. Slowly, and without much commitment at first, the idea was accepted that words in a language had meanings that could change. Lexicography began to include the impartial study of these meaning changes. A further development occurred with the flourishing of evolutionary thinking in the nineteenth century. Historical linguistics took as its subject language families, their "origins" and "descendants", and traced the links in the organic continuum. It was against this exclusively

historical (or "genetic") approach that Saussure reacted. Equal attention was now to be given to the contemporary experience of language, and thus attention was again drawn - but without the normative bias - to the linguistic habits of the present. In Saussure's thought, a method, enabling significant discussion of the meanings of words at any one time, was devised that might allow, as the normative approach had not, for the fact that meaning-change was a natural process.

There was a parallel change in metaphysics and the philosophical interest in language. One can point to the scepticism of Hume, to Kant's problem of the possibility of scientific knowledge. The simple "givenness" of reality was doubted; and as a consequence the relation between reality and language was complicated. Allowance had to be made for the constitutive powers of the mind, and thus for its expressive medium, language. The Whorf-Sapir hypothesis is perhaps the most well-known result of this trend in thinking - the central idea being that different languages produce different conceptual schemes in their users, different "world-views". It is not surprising then that the philosophy of language has assumed a central importance in modern thought.

This complicating of the relatedness between reality and language has its corollary in the relation between word and meaning. Words are understood no longer as simply names, but as having "sense and reference" -

and the number of senses of a word can be multiple. The determination of these senses of a word is understood as being in considerations of both use and potential for significance<sup>2</sup>; more specifically, of both situational, and linguistic, context (that is, the non-verbal, and verbal, context of a particular occurrence) and of its place in the larger context of the language as a whole. The meaning of a word is, consequently, thought of as being changeable in two senses. First, (accounting for the fact of linguistic change) the meaning of a word changes diachronically according to the word's place in the altering synchronic states of the language. Second, within each synchronic state, a word's meaning may comprise a number of senses, according to the different uses to which a word at any time is put. These two aspects of meaning-change are, of course, supportive, the first accounted for by the second. More important is the modern understanding of how words acquire new sense - that is, via extended use - for it is from this view that metaphor derives its new and considerable status.

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<sup>2</sup> Again, it must be emphasized that this is a statement of a general trend. And I am aware that I am treading over a philosophical minefield. Not only have "meaning" and "use" been differently interpreted, but the relative importance of each to semantics continues to be the subject of debate. Yet, however their definitions are refined, and in whatever proportion they are decided to be operative as factors, something such as "meaning" and "use" are important to deciding semantic questions. Thus different refinements of the subject are irrelevant to this essay, for which it serves merely to provide a background.

A word more needs to be said about "context". The extent to which "context" is understood to be influential in determining meaning can be indicated by quoting at length a passage from Lyons (1963).

...[[T]he situational context of an utterance cannot simply be identified with the non-verbal matrix of the "speech-event".... A much wider and more abstract notion of context must be adopted; one that brings the verbal and the non-verbal "components" together under one head. The context of the utterance must be held to include, not only the relevant external objects and the actions taking place at the time, but the knowledge shared by speaker and hearer of all that has gone before. More "abstractly", it must be held to comprehend all the conventions and presuppositions accepted in the society in which the participants live, insofar as these are relevant to the understanding of the utterance. In particular, the context of a sentence in a written work must be understood to include the conventions governing the literary genre of which the work in question is an example.

(pp. 82-83)

Lyons is, of course, talking here of only situational context, and not of the immediate verbal (linguistic) context (which would supply the relevant grammatical relations, and, broadly, the semantic universe of the utterance) or of the context which is the language against which the utterance is significant.

Yet a further distinction would appear to be illuminating. Situational context may be left to signify the "non-verbal matrix", and all the "wider and more abstract" remainder could profitably come under the head of "cultural" context. Some of what Lyons includes is (for present purposes) insignificant - conventions that merely serve to aid the process of communication. But it would include elements worth considering: for

two main groups <sup>3</sup>. This is not coincidental; for it is possible to relate these two to the two ways of understanding language sketched above.

The Literalist category is the first, comprising what have been called the Substitution theory and the Comparison theory. In both of these views, metaphor is simply reducible to its literal paraphrase. It is only once this explication in terms of the literal is done, that a metaphor is understood, and a metaphor means no more, no less than this statement in literal terms. The only difference in the views is in the manner in which this reduction takes place. Faced with the lines, for example,

Ask the Empresse of the night  
 How the hand which guides her spear,  
 (Thomas Stanley, Poems, 1647)

one who held the former view would understand by the phrase "Empresse of the night" simply "moon". The poet, instead of speaking plainly has merely substituted, for whatever creditable reason, usually delectation, a phrase rather more fanciful. The metaphor is thus transparent, its literal equivalent, for the intelligent reader, an easily apprehensible provider of meaning.

For one who holds the latter view, analysis would be slightly different; but again the literal term (once

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<sup>3</sup> For much in this section on metaphor, including the distinction and criticism of the various trends of thought, I am indebted, in particular, to Urban (1939), Shibles (1971), Black (1962) and Beardsley (1958).

discovered) provides the ground of understanding. However, instead of talking in terms of substitution, what would be asserted is that a comparison is being presented. The moon is being likened to an empress. Metaphor is understood as a contracted simile. The meaning of the metaphor thus again becomes equivalent to its expansion in literal paraphrase.

It has often been pointed out that Aristotle is the founder of the Comparison view. His statement of it is precise and has continued to be essential to subsequent statements by other writers. But the great virtue of his statement is that by its very precision, the view of language that supports it is clearly exposed. He writes:

Metaphor is the application to one thing of a name belonging to another thing.

(Poetics, Dorsch , ch. 21)

Aristotle conceives of language as being essentially a naming device. Language may have other functions in communication, but these are secondary to the naming function. The objective world exists in all its detail prior to language, and is unchanged by metaphoric contact. The way is thus open to thinking of metaphor as decorative (Rhetoric, III, x-xi). An understanding of metaphor in terms of an extension of meaning is not provided. Meanings of words are considered fixed. For example, a few lines before offering the above definition of metaphor, Aristotle distinguishes between types of "noun". He does so in such a way as to make "words in current use" and "metaphor" permanently exclusive categories.

Similarly, in talking of metaphor as analogy, he writes:

I explain metaphor by analogy as what may happen when of four things the second stands in the same relation to the first as the fourth to the third; for then one may speak of the fourth instead of the second, and the second instead of the fourth.  
(my emphasis; Poetics, Dorsch, ch. 21)

This can be feasible only if words are thought of as having clearly defined and unchanging meanings (the things they name). For underlying the explanation is the analogy with numerical proportion. In the same way as the ratios between numbers are eternally fixed (2:4::9:18), so the "ratios" between meanings are completely and forever determined (moon:night::empress:empire).

The Comparison view of metaphor is obviously superior to the Substitution view - at least the meanings of both terms are taken into account, and the point about metaphor being a statement of similarity is plausible<sup>4</sup>. Nevertheless, with an understanding of language that does not view naming as basic, that does not see it as "static" (in the sense offered above pp. 6-7), Literalist thinking about metaphor is inadequate. Modern writers on metaphor have, in revision, provided theories that fall into the second category, which, for convenience,

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<sup>4</sup> There are however two points (apart from the view of language on which it is based) where the Comparison view is weak. First, there is an important semantic difference between simile and metaphor. The latter asserts a relation of identity between its terms, while the former asserts one only of similarity. Second, where a simile is "satisfied" by the first and most obvious respect in which the two objects may be similar, metaphor invites continued exploration of all the possible senses in which the one object may be said to be the other.

I call the Interaction category.

Yet even here, there is a group of theories that, while not seeing the understanding of metaphor in terms of a reduction to literal language, still assumes the clear distinction between literal and metaphoric typical of Literalist thinking. Two theories in this group, the Supervenience and the Emotive, are relatively uninteresting, both stressing the unanalyzability of metaphoric language. The Emotivist would degrade metaphor by assigning it expressive value merely, denying it any true cognitive function; while the Supervenience theorist would go to the opposite extreme in stressing unanalyzability by exalting it as the conveyor of an almost mystical insight that literal ("prosaic") language fails in any way to capture. More interesting, in its illuminating problems with maintaining the clear distinction between literal and metaphoric, and also the assumption so important to Literalist thought, that (literal) meanings can be clearly defined, is the Controversion theory as set out by M. C. Beardsley.

Metaphor for Beardsley (1958, pp. 122-164), is created when two terms are joined in attributive relation such that the result, when taken literally (that is, at the level of primary meaning) is logically absurd. There is the further condition (for the above may be applicable to nonsense) that the modifier have connotations (that is, instances of meaning at the secondary level) that apply to the subject of the attribution.

Thus, to call the moon an empress is metaphor in its stating something logically impossible; and, at the same time, for its allowing reasonable secondary meanings to be invoked. An empress can be thought of as "graceful", "splendid", "superior", etc., and these qualities can, without strain, be thought of as "fitting" the subject, "moon". Beardsley further insists that these connotations can be completely listed (p. 133), so that the meaning of a particular metaphor can, in analysis, be fully detailed.

That these ideas are so unsatisfactory is a consequence of a curious inconsistency. Early in the discussion (p. 125), Beardsley remarks on the distinction between primary and secondary word-meaning that it "is not sharp". Nevertheless, it is this distinction which provides the starting-point from which the theory, emphasizing precision and accuracy, is elaborated.

And that the distinction is not sharp is certainly true. What is the primary meaning of "rose"? Is it simply "flower" - which leaves "sweet-smelling" to be a secondary meaning? Or if "sweet-smelling" is included in the primary meaning, as surely it should, then this primary meaning is shared by, for example, "carnation". Can then two words normally assumed different in meaning be believed to share primary meanings? How far does one go in this addition till the primary meaning specific to "rose" is arrived at? There are places in Beardsley's account which seem to imply that the primary meaning of

a word is to be understood as the scientific description of the thing it denotes. But, if this is his intention, this attempt at precision, apart from unjustifiably hypostasizing, in the case of natural objects, the language of the natural sciences, provides more problems than answers. What is the primary meaning of "freedom"? of "simple"?

Because Beardsley understands "literal" in terms of primary meaning, the vagueness that attends the latter notion attends the former. And as the notion of "literal" is needed to be completely determined for his definition of metaphor, his view of metaphor too is unsatisfactory.

The difficulty appears to stem from presupposing that literal and metaphoric senses of the word exist prior to the word's use in a particular context. Apart from the fact that the attempt to establish primary meaning does, I think, fail, it is from this presupposition that his mechanistic understanding of reading metaphor is derived. First the absurdity at the literal level is recognized; then "orbiting" connotations of the modifier (like electrons, separate and denumerable "entities") are discovered and precisely detailed; and those that are apt are then selected and applied to the subject, those not, rejected. But this is artificial. Apart from the question whether all connotations can be listed, the subtle question of "weight" is ignored. Is each connotation in the interpretation of a metaphor

given equal value? Surely not - judicious discernment of relevance to a larger (and certainly not precisely defined) context is required in sorting out degrees of emphasis. There is, in fact, a case that can be made for saying that the same word used as a metaphor but in different contexts, is understood in different ways. For example, consider the following:

The moon is empress of the night,

and

The central character in this picaresque novel is Margaret, gypsy, and empress of the highways.

Although Beardsley, like those who ascribe to Emotive and Supervenience theories, avoids talking of understanding metaphor in terms of reduction, he is, as the criticisms above indicate, uncomfortably close to being a Literalist. For in order to stress the complete analyzability of metaphor he is forced to assume that the word-meanings in a natural language can be completely detailed; that each of these meanings can be divided into primary and secondary parts; and that the literal meaning of a word is its primary (central) meaning. This view comes close to thinking of metaphor as simply figurative. Further, it assumes, solely, that words bring their meaning to a context, thus ignoring the contribution contexts make. Consider the phrase "a green thought in a green shade" apart from its context; and its meaning is very thin indeed. Finally, its view of language, like the Literalist, discloses meaning as static. Little

provision is made for an understanding of extension of meaning. Nor does it take into account the fluidity and creative imprecision that, because of its multiple and ill-defined contexts, are a natural language's vital resources.

Developing the insights of I. A. Richards, Black (1954) provides the last of the views to be discussed here, the Interaction theory. He borrows from Richards the notion of the interaction of ideas; and develops it to arrive at the position from which he regards metaphor as best understood in terms of the patterns of implications connected with each of the active terms. It is for the reader to discover and develop these implications, and in the process, to develop ways in which each term is seen in the light of the other. As the main drive in the interpretive process is toward the discovery of significance, it is those cases in which A fits B's implications and B fits A's that loom immediately large. To make his points clearer and to provide tools useful in analysis of instances of metaphor, he introduces a new terminology (the status of which I discuss below).

Taking a simple sentence easily recognizable as involving an instance of metaphor, it can be said to comprise a focus (the phrase that excites interest as being used "abnormally") and its frame (the norm against which the deviance is judged, or, switching perspective, the abnormal context in which the word is being used). This frame will either contain or provide clues as to

the nature of the principal subject of the metaphor, while the focus provides the subsidiary subject. It is the function of the latter to revise or "organize" our view of the former. It does this by virtue of the semantic history it brings to the context, a "pattern of implications" from which predicates applicable to the principal subject can be selected. Black uses an analogy here. The principal subject is like a star-filled night-sky at which we look through a "piece of heavily smoked glass on which certain lines are left clear" (p. 288). Only the stars that are visible through the portion of glass left unsmoked will be seen. And similarly, the pattern of stars revealed will be different when the glass is aimed at a different part of the sky. In an analogous way, the subsidiary subject determines what aspects of the principal subject will be considered prominent, and the principal subject supplies clues as to how the subsidiary subject is to be taken. But primarily, metaphor operates by providing a subsidiary subject the primary subject is "seen through".

If Thomas Stanley's lines are again considered,

Ask the Empresse of the night  
How the hand which guides her spear,

it is the phrase "the Empresse of the night" that stands out as metaphorical. If this is considered the focus, then "Ask ... how the hand which guides her spear" is the frame; and while the frame does not provide explicit mention of the principal subject, it does provide clues

as to what principal subject is to be assumed. (It is necessary to note at this point the mutual effectiveness of both focus and frame in determining the unstated principal subject: were the phrase "the empress of the night" replaced by, "evening's herald", the principal subject would, obviously, be Venus, not the moon.)

Out of context the phrase admits a number of interpretations; but these the context limits. Nevertheless there is still an ambiguity (for which grammar is responsible) in the relation of "sphear" to "empress". While the "sphear" is certainly the moon, does it belong to some unspecified nocturnal deity, in the way that the orb emblematic of royalty would belong to an empress (which would mean understanding the empress as the goddess), or does it belong to the empress in the sense that one possesses one's body (which would mean understanding both empress and sphere (= body) as the moon). While the first option is not too far-fetched<sup>5</sup> to be employed in a poem, the rest of the poem, and the rest of the stanza in particular indicates that the latter option is to be taken.

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<sup>5</sup> The prior reading of the whole poem has influenced my reading of these two lines in isolation. It is not too "far-fetched" to imagine them in some piece of exotic verse, with the empress identified with a foreign potentate graced with mythic titles, the "hand which guides" with the destiny of nations, and the "sphear" (via the emblem of power) with the empire. All it would need is a context suitable to activate these meanings.

Constant in unconstant light,  
     Taught the waves her yoke to bear,  
 And did thus by loving force  
 Curb or tame the rude seas course.

Ask the female Palme how shee  
     First did woo her husbands love;  
 And the Magnet, ask how he  
     Doth th'obsequious iron move;  
 Waters, plants and stones know this,  
 That they love, not what love is.

Be not then less kind than these,  
     Or from love exempt alone,  
 Let us twine like amorous trees,  
     And like rivers melt in one;  
 Or if thou more cruell prove  
 Learne of steel and stones to love.

Once the rest of the stanza is supplied, the need to identify the empress with the moon and the need to take physical qualities (beauty, splendour) into consideration becomes apparent. In, for example, a Symbolist poem, there would be no need to press for a clear identification of the principal subject. But here the underlying analogy is foregrounded. Thus, not only is a precise evocation of the moon called for, but also the moon in its aspect of a physical body.

But the phrase "Ask the moon ..." is hardly normal; which points to (in the context of the rest of the poem) another pattern of meaning at work in the stanza. To paraphrase would be out of place; the result, if accurate, would be cumbersome, complicated by almost endless qualification. I will rather indicate levels of meaning and their interrelation. There is first the obtrusive poetic convention within which the "reality" level is set. The speaker is persuading a woman to accept an erotic relat-

ionship which he claims to feel as already binding. Then, there is the analogy, whose use is bound to his intent to persuade, of the force she exerts over him with the natural phenomenon of the moon controlling the behaviour of the tides. Then, the natural phenomenon is, in its turn, presented in anthropomorphic terms, a presentation that hinges on the similarity that both moon and empress control. But the choice of "empress of the night" for "moon" has implications at the first level of meaning, being suggestive of how the speaker conceives of his mistress.

Thus, even though the metaphor chosen appears to be simply explicable in terms of the Substitution view ("Why bother with so-called Interaction views? It is obvious that when he says Empress of the night he means the moon"), or Comparison view ("He is saying the moon is like an empress"), any Literalist understanding of metaphor cannot do justice to the subtle complexity of what is, after all, not a particularly "difficult" piece of verse. First, it can do little to establish the number of patterns of meaning the implicative resources of the language develop. To begin with, the word "empress" brings with it associations, developed in the later lines, that the word "moon" just does not carry. Second, though it is idle to ask whether the poet, if he had not been bound by the exigencies of meter, would or would not have used the appositive phrase "the moon, Empress of the night", it is certain that, if he had, his effect would

have been lessened by the clumsiness introduced. The moon, as has been pointed out, does not operate on the literal level. To introduce the word into the surface of the verse draws attention from the fact that it is the "physical" woman, and the force she exerts over the speaker, that is the well-disguised object of attention on the level of "reality".

It might be asked now that this complexity has been discovered, what the principal subject might be exactly - that is, if it is not to be identified with the moon? But the answer is that no precise identification can be made. Nor is this a fault. The terminology is necessarily ad hoc, a heuristic device. Once it has provided an entry into the text, if it is no longer useful, it is simply discardible. This is a natural consequence of metaphor being thought of as an interaction of ideas. No longer is it a relation between simply definable verbal entities, such that once the participating words have been defined, the relationship can be easily drawn, the "figure" traced. The metaphor (or its significance) is to be located rather in the network of sense-relations the words with the aid of a sensitive reader develop. And as the stuff of these

net-works is gathered from contexts <sup>6</sup> which are imprecise and can certainly in no way be determined, the relations between the words can only be fluid; the categories used to pinpoint these relations necessarily an imperfect fit.

Granted that the terms used to talk about metaphor are best considered arbitrary and useful, rather than necessary, it would seem that a strict definition of the metaphoric/literal distinction is not possible. Black writes: "Metaphor is a loose word, at best, and we must beware of attributing to it stricter rules of usage than are usually found in practice" (1954, p. 276) - which is another way of saying that there are no general criteria for distinguishing metaphors. Alston says of the distinction that it is "not a black and white distinction of kinds, but a continuum of degrees" (1964, p. 101). Words enter a new context and appear metaphoric; with continued use they are either absorbed into the literal (such as the Latinate abstractions), or hover inbetween

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<sup>6</sup> cf. Black (1954), pp. 276-77. "Context" here, of course, refers to all its aspects - including cultural context, which seems close to what Black has called "systems of associated commonplaces", that is, if one allows for the fact that some of the "commonplaces" are likely to be quite esoteric. It is useful to mention here a point that Black has expressed well: "... in a poem, or a piece of sustained prose, the writer can establish a novel pattern of implications for the literal uses of the key expressions, prior to using them as vehicles for his metaphors [my emphasis].... Metaphors can be supported by specially constructed systems of implications, as well as by accepted commonplaces; they can be made to measure and need not be reach-me-downs", p. 290.

(such as "leg" in table-leg). Shibles has offered as a definition of metaphor: "To deny a commonplace is to create a metaphor" (1971, p. 152); which seems to capture well (though I would prefer it expressed the other way round) two important aspects of the phenomenon. For what is commonplace to one, may not be to another. "Leg" in "table-leg" causes second thoughts to none but the proverbial Victorian prude. More seriously, much eighteenth century verse, as Professor Davie has shown (1952, ch. 3), relies for much of its effect on the reactivation of the metaphoric history (by the careful deployment of the controlling context) of words since become commonplace. Classification as literal or metaphoric depends both upon context and the perceptions of the interpreter. And as, if the point is pushed far enough, every context is unique, so every word-use is "metaphoric" - which underlines the arbitrariness of the distinction. Ultimately, it is the language-user who decides (according to no fixed rules) what language is to be literal, what language is to provide a point of stability in the flux of experience (Cohen and Margalit (1972) are pertinent here, with their idea of the literal being atrophied metaphor).

And, in the last analysis, it matters little where a distinction is fixed - the process of understanding literal and metaphoric language is the same. In both cases, interpretation amounts to searching for the linguistic and experiential backgrounds against which

the expression makes sense. It is one of the virtues of Black's theory that it places an understanding of metaphor in this framework, seeing it in terms of a fusion of disparate contexts. It is in this way that metaphor gains its cognitive value, for by it the subject under attention can gain new and fresh definition<sup>7</sup>. But it also has the virtue of being related to an important insight into language.

As has been suggested, metaphor is best understood as a transference of meaning effected by bringing a word or phrase with its attendant associations (derived from the contexts of past use) to a context in which its use is novel - or, in the case of conventional metaphors, once was novel. Moreover, it has been suggested that the only way to understand meaning-change in language is by acknowledging a perpetual and natural transference of meaning at work in a language - a perpetual and slow shifting of perspectives on the world. To this is opposed a view of language essentially static, in which

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<sup>7</sup> Obviously not all metaphors are in this way valuable. The metaphors in Stanley's lines are subsidiary to (the foundation of) his ingenious turning on its head of a proverbial notion that a heart of stone describes one who is unloving. There is analogy at work in these lines, and certainly not too much else. A Literalist account would not flounder - and it is reasonable to expect this, since there is no doubt that Stanley and others of his time would be influenced by Classical thought on language and metaphor, and so create metaphor accordingly. The Interaction view is after all of Romantic birth (a plausible pedigree: Black - Richards - Coleridge).

words are the labels of things, in which the literal and metaphoric are clearly distinct, and in which meaning-change can only be accounted for in terms of mistakes or misapplications. But, as Shibles, commenting on Urban (1939), points out,

... words have no one fixed meaning but are and must be fluid and mobile enough to express a meaning in many sentences and contexts. A word is a vague center of meaning and does not have a fixed, static meaning.

(1971, pp. 76-77)

And it is to this extent that dictionary definitions are abstractions in the final analysis not precisely regulable and hence controversial.

Yet while metaphor is a form of transference of meaning, it would be futile to assert that all transference of meaning is metaphoric - in the sense that the language of poetry may be metaphoric. What distinguishes transference as it occurs in natural language is that it is spontaneous, or "unauthorized", whereas poetic metaphor ("poetic" in the broadest sense) is deliberate - to the extent that it is assumed that the writer chose the word, was satisfied with the choice. It is this quality of being deliberate that allows metaphor to be used as a vehicle for insight. Moreover, because of the undefined quality of the metaphoric interaction, metaphor becomes the vehicle for an insight that is not "closed", that allows, invites, continued exploration.

These two aspects of metaphor have caught the attention of contemporary philosophers and critics, who have found it underlying much of discursive, theoretical

writing. Metaphor has been found central to the intellectual activity of the natural sciences (see, for example, Black (1962), Hesse (1966), Harré (1970), and MacCormac (1971)). It was indicated earlier (p. 25, fn. 6 above) that metaphor does not rely solely on the associations it brings to the context, but, to a greater or lesser extent, derives from the context in which it participates a selection of special associations. This, in a way, is what happens to words from ordinary language when drawn into the context of scientific discourse (for instance, the development of special associations of the word "energy" that has taken place in contemporary physics). But, more important, these terms, with the artificial set of associations and implications they have acquired via research and systematic theorizing in one branch of the sciences, may be transferred to another area of research, one whose character is still in need of mapping. With them, of course, come the related terms and the precise description of the relations between them. The guess is (and initial, to some extent undirected, research provides hints) that this systematic body of terms and relations, when applied to the new area of research, will provide fruitful results. This, experiment either will or will not confirm. Should the guess have been insightful, the old terms are, with as much accuracy as is needed, mapped onto the new area. In this way, the new area is "seen through" the old, in much the same way that the

subject of a metaphor is "seen through" the "foreign" term applied to it. In physics, a simple and well-known example of this sort of transference is to be found in the understanding of light in terms of waves. Roughly, this is what is meant by a "model" in science: wave-theory provides a model for the theory of light.

But there is another way in which metaphor has been thought of as systematically guiding theoretical writing. Outside of the natural sciences, in other types of enquiry, there do exist, "submerged" in a writer's thought, basic metaphors of the type: "society is a field of forces", "the mind is a mirror/lamp". And these metaphoric predications, when systematically developed, have proved a useful elucidation of their principal subjects. In a seminal essay<sup>8</sup> "Models and Archetypes", Black names such basic metaphors "archetypes" (or "conceptual archetypes"), and writes of them that

[they are] a systematic repertoire of ideas by means of which a given thinker describes, by analogical extension, some domain to which those ideas do not immediately and literally apply.  
(1962, p. 241)

As Abrams points out, any area of experience needs, if it is to become the subject of investigation, a fairly

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<sup>8</sup> "Seminal" in the sense that Black's systematic development of the topic appears to have been the most influential. His ideas are not however completely original. He acknowledges a debt to Stephen C. Pepper ("root metaphors") and M. H. Abrams ("archetypal analogies") - whom Pepper seems to have influenced as well.

precise and co-ordinated terminology (1953, p. 31), and the conquest of a new area will have to rely on the use of an "archetype". But archetypes apply not only to fields that are new; they are an important means to the provision of a fresh perspective on subjects well studied. In this way, a new archetype may reveal aspects of a subject that usefully bear extended exploration. I believe it is in this framework that the vitality of Structuralism in both language and literature studies can be understood.

But an important qualification needs to be made. Alston talks (as many do) of the necessary appropriateness of (presumably successful) metaphor (1964, p. 98-99). Without some prior (and obvious?) similarity existing between two things or situations designated by the terms used in the metaphor, it will not be meaningful. Hesse makes a similar point, when she writes, "If I say (taking two words more or less at random from a dictionary page) 'A truck is a trumpet', it is unlikely that I shall communicate anything ..." (1964, p. 164). But it takes only a slight exercise in ingenuity to construct a literary context in which some verbal form of this metaphor is, if not particularly memorable, at least meaningful. (The backwoodsman, say in Canada, on the run from Industrial society seen as an invading army with giant motor-vehicles in its vanguard, the roar of their engines heralding their triumphant advance, etc....) At this point, a distinction must evidently be made

between poetic metaphor, and the metaphors at work in scientific, or other forms of theoretical thought. As Hesse has pointed out, "... whatever may be the case for poetic use, the suggestion that any scientific model can be imposed a priori on any explanandum and function fruitfully in its explanation must be resisted" (1964, p. 161). This is obviously the case. An instance from the history of science of a model found to be inappropriate is that of thinking of heat as a fluid.

Though there is not the same control over confirmation and disconfirmation of the appropriateness of basic metaphors (models) outside the natural sciences, the question of appropriateness, of course, still arises for basic metaphors (archetypes) in other areas of thought. And rather than controlled experiment providing the environment in which judgements are made, it remains the task of critical reflection to pick over the features of the "explanandum" that a cultural heritage provides, relating these to the "systematic repertoire of ideas" the archetype provides, and thus to decide whether or not the perspective provided contradicts or ignores what may have been found valuable. Thus, aiming at a discussion of the merits of the Structuralist archetype for the study of literature, the following chapter isolates some of the most important associations of the ideas "system" and "structure"; it then traces their involvement in the thought of Chomsky (who appears, for reasons I suggest later, to be the most

significant developer of Structuralist thought in language-study); and, finally, the archetype, by now I hope sufficiently illuminated, is traced in the study of literature.

## CHAPTER TWO

### SYSTEMS AND STRUCTURES

Both words, "system" and "structure", have a long history, one which demonstrates the ease with which they have been widely applicable. They are more or less neutral in meaning - having a clear enough meaning outside of any particular doctrine to which they may become affiliated <sup>1</sup>. "System", simply, characterizes a cluster of "things" - whether concepts, people, or planets, etc. - which contains more order than is implied by aggregation. Thus there is little restriction on the contexts in which it may appear. The inner workings of a wristwatch, the physical universe, the economic life of a community, its principles of government are all, from one or other point of view, "systems". And, of course, similarly disparate examples may be given of structures.

An important exception to this freedom from ideological association is connected with the role biology played in shaping much of nineteenth century thought.

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<sup>1</sup> The O. E. D. (1933) distinguishes nine different senses of the word "system", and seven of "structure". The nine uses of "system" fall under two main heads: "an organized or connected group of objects", and "a set of [correlated] principles, etc. : a scheme, a method". The seven senses of "structure" all relate more or less abstractly to the fundamental - "manner of building or construction". Of course, the words are related. While not every structure is evidence of a system, every system may reveal its structure - the way in which the parts are interrelated.

The key notions of biology (including structure and system) were applied successfully in history, linguistics, metaphysics and the study of social institutions. M. H. Abrams (1953, chs. 7 and 8, passim) has demonstrated how organicist, evolutionary thought provided a new and valued way of looking at artistic creation. Questions of psychological (and cultural) genesis aside (and these are an important aspect of organicist thinking), the poem, in this view, is an object analyzable by the critic in the way that a plant can be talked about by the biologist. Questions of value are not normally excluded however. A poem is valued as good if organic, possessing a unity indicated by the way its various parts (and kinds of parts) are interrelated. For, if the work is truly organic, all the parts are "assimilated" in the service of unity, to its essential part, all (or a crucial number, at least) its details subsumed to a (few) structural principle(s). It is this essence, this principle of organization that holds its parts together, that gives the poem its particular character and life - in the way that the germinating principle held in the seed gives to the plant its particular character and the force that both causes its growth and holds its various parts together in mutual support <sup>2</sup>.

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<sup>2</sup> Numerous passages in Coleridge's Biographia Literaria are of course relevant here; see also his Aids to Reflection, pp. 40, 266-68.

While "system" and "structure" are, no doubt, useful words to employ in talking of the interrelation of parts organicist thinking focuses on, they are not basic<sup>3</sup>. "Life", "growth", "process", "end", "form" - such words gave biology its character in the nineteenth century, for it was predominantly metaphysical - teleological and vitalist. (Mendel's work in genetics, though done in the nineteenth century was ignored until the beginning of the twentieth.) But Structuralism is, as has often been remarked, overtly opposed to an organicist interest in origins, in process, and to its emphasis on formative forces. This can be seen, for example, in Saussure's revolutionary assertion of the primacy of the synchronic fact of language - for which the idea of language as system is the main support. In Saussure, the idea of language as system becomes the foundation of a discipline. But not "system" in the sense of an organic system. With the decline of organicist thinking in the twentieth century, and the mathematization of biology, "system" tends rather to gather its associations, from various branches of mathematics.

While this is apparent in the case of later Structuralists, it is not at all obviously the case with Saussure. Yet, though he seems to have been influenced far more by the psychology and sociology of the time,

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<sup>3</sup> And in Coleridge's thought, they often appear associated with the style of thought he is opposing; he talks, for example, of "mechanic system".

his conclusion that language is a formal system is relevant (as is his related suggestion that language is a kind of algebra). For it allowed a mathematical treatment - either formal or informal - of language, and any other cultural phenomenon understood as analogous to language. The extent to which mathematics is looked to in linguistics is touched on in Chapter Three below. Here it need only be pointed out that the idea of the formal system assumed central importance in the mathematics of the early nineteenth and late twentieth centuries, and, in the process, was the object of detailed examination and refinement. Thus, even if Structuralists do not make direct use of what mathematicians discovered, at least these discoveries may provide an insight into the implications of the use of the idea as an archetype. Hence it is with the associations and value that the idea of the formal system has gained in the context of mathematics that this chapter will be concerned.

And as concern is with the use of this idea of system as an archetype, precise and specialist definition is not of particular importance. The archetype defines a perspective, a mental posture taken before the phenomenon which determines the sorts of features that will be discovered. What characterizes the attitude, what is formative, are the general features of the idea - the framework within which specialist distinctions are made, rather than the specialist distinctions themselves.

Niceties important within the discipline are not necessarily (or usually) of interest (or possible) once ideas have been "plundered" for use elsewhere <sup>4</sup>. And the ideas themselves may be fairly well disguised when they do appear in their new context. For example, when Barthes talks of reconstructing a literary work (or experience) in terms of units whose content is not important, but whose mode of articulation is (Barthes, 1964c), the language is not obviously mathematical. Yet, submerged, "translated", is the idea of constructing a system of formal units and relations between them (necessarily "formal" as well) isomorphic with an area of reality, an idea whose genesis is to be traced in mathematics. Thus, the following account of the idea will not concern itself with "niceties", but will rather attempt to capture, informally, something of the "feel" of the idea - both the context in which it can be understood, and its value within that context. "System" has a long history in mathematics, and it is via considerations of its development and changing value that the idea will be approached.

At the beginning of its history, lies the Greek insistence on reasoned proof. Mathematics, as it is now

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<sup>4</sup> The exception is, of course, when an idea is used as a model rather than an archetype. It is, for example, Chomsky's claim that, in a way satisfying scientific conditions, the essence of language can be constructed as a formal system, that language is such a system precisely. This claim is discussed in Chapter Three below.

understood, began with the Greeks. Thales, living in the sixth century B. C., a figure standing at the origins of Greek philosophy and science, is traditionally credited with being the first to give mathematics its now distinctive character. There had, of course, existed prior forms of thought concerned with calculation and measurement. But the mathematics of pre-Hellenic times, of Babylon and Egypt, was only practical, was interested only in individual cases. There was generalization of a limited sort - sufficient for a mass of formulas and tables to be collected - but there was no search for general principles that might account for the observed regularities. There was thus no guarantee of certainty. It might be found, for instance, that on a number of occasions, the area of a four-sided piece of land might be calculated as the product of two adjoining sides. And there would be occasions on which this formula would be adequate. However there would be no way of accounting for an area bounded by a four-sided figure either non-rectangular or non-rhomboid. Each of these would have to be treated as a special case, unless by trial and error, by shrewd guesswork and continued checking against the facts, some formula might be found more or less acceptable. Moreover, there would be little understanding of why these ought to be treated as distinct cases; and, it is likely that, unless suspicions were aroused by discovered discrepancies, there would be little awareness of their distinctness. The Babylonian

and Egyptian achievement, which was remarkable and influential, has certainly never been disparaged; nevertheless, while not primitive, pre-Hellenic mathematics possessed none of the intellectual brilliance of what was to follow.

Pre-Hellenic mathematics may be termed inductive; that is, its generalizations - its formulas, its tables - were obtained by reasoning from, and only from, a necessarily limited number of observed instances. Greek mathematics, on the other hand, developed as deductive. Associated with this development, and no doubt helping to foster it, was the birth and elaboration of the idea of logical discourse, an idea to prove the characteristic guide in subsequent Western pursuits of knowledge. Simply, logical discourse may be understood as the type of discourse which comprises an ordered sequence of statements such that acceptance of the first statement of the sequence (or conjunction of statements) compels acceptance of all through to the last. Attention is thus focused on the process of arriving at one statement from another. Should the deduction be recognized as correct, "reason" compels acceptance of the sequence (a compulsion which, of course, may, with greater or less ease, be resisted); should a flaw be detected in the chain, the discourse loses its logical value, and no reason exists to accept any statement not already self-evident.

The most important feature of logical discourse is

that every assertion need not be self-evident. On the contrary, it may be, and very often is, the case that the conclusions reached, are the very opposite. It was this possibility of arriving legitimately at unexpected and perhaps disturbing results that proved "reason" and "reasoned discourse" an effective tool for Greek philosophy. Its value is clear when the central task of philosophical thought is conceived as the criticism of received knowledge and the search for truths contrary to mere myth and opinion.

And it was the birth of the notion of logical discourse that helped elevate the study of mathematics, and provided it with an inspiring and guiding force. With its advent, mathematics was freed from endless painstaking empirical research guided solely by intuition. Insight, discovery could advance with the aid of reasoned reflection and an understanding of general principles. But perhaps more important, mathematics was freed from the doubts contingent on the uncertain nature of claims inductively based. For it is a feature of logical discourse that any statement established in it is universally true - within the limits of the discourse. (The qualification is important, since, in the terms of the above definition, if the initial statement is not accepted, there need be little impact in the subsequent argument.) An assertion in mathematics could now be proved (and, as has been pointed out, the Greeks insisted on proof); it could be shown to be true regardless of

time and place of application. The square on the hypotenuse in any right-angled triangle will always equal the sum of the squares on the other two sides. A case can no longer be conceived of which might contradict that assertion. There is thus no reason to doubt its truth. Unless, of course, one refuses to accept unconditionally the system of geometry the Greeks elaborated; and until as late as the nineteenth century, no good reason could be provided for doing so. But, before these events are touched on, it is necessary to enlarge on the idea of a system of geometry. As, for the Greeks, geometry proved the foundation of other mathematical thought, it was in the context of geometry that the idea of "system" developed.

The Greeks had introduced the notion of the abstractness of mathematical objects (cf. The Republic, Bk. VII, sections 525, 527). The square was no longer merely a characteristic of a particular plot of land; it was an object in its own right, with its own distinctive properties. In a way that further assured the ideal nature of the mathematical entity, they insisted that the truth of an assertion be demonstrated deductively, rather than empirically (cf. The Republic, Bk. VI, section 510). It seems a natural development that there should follow the desire to see the relatedness of these abstract entities, and thus the logical unity of their subject. It seems obvious that the question of the relation between the various deductively, but separately,

proved theorems would in time arise, and that this would lead to questions about the relations between the relevant postulates. The attempt to place theorems (in other words, mathematical propositions, or assertions) in order of logical priority, and to identify the necessary postulates is the attempt to systematize.

Indispensable for the systematizing process, for the search for logical unity, is the search for conceptual coherence. Faced with a corpus of theorems, of proposed postulates, all would have to be sifted through for the basic terms of the discourse to be discovered. Once this has been done, they would be used in the restatement of the proposed postulates, and, thus, via the deductive process, and the addition of an occasional further, yet appropriately stated, definition, in the simpler restatement of the whole body of geometry. For it is only once this reduction to a few basic terms has been achieved, that the limited number of logical relations that comprise the machinery of logic, can operate.

The value of the coherence implied by systematization is obvious. First, it provides certainty. There would always have been, attached to an isolated theorem, a degree of uncertainty, and this its placing in a coherent scheme would eliminate. For if each theorem can be shown to be related logically to each other, and each in turn derivable from self-evident postulates, there is no room for doubting its truth. Second, it

helps present the subject with an extreme clarity. For each of the theorems, even the most complex, is, in the final analysis, stated using the same few basic terms. Each part is absorbed into the whole, and the relation of part to part is exactly presented.

But, perhaps more important, is the recognition that the process of reduction involved in the provision of coherence merely continues a process that is the life-blood of mathematics - deliberate, orderly abstraction. In its very roots, the mathematical style of thought approaches experience in order to select from it a limited number of its properties, which it then uses for the purposes of exact definition. And this abstraction is "orderly" in that the properties selected are drawn from a certain chosen type (as, for example, in Euclidean geometry, it is properties of form, of shape, that are chosen). Kline (1954) has described well this aspect of mathematical thought (and, crucially, why it is of value), and is worth quoting at length.

) Out of the medley of experiences proffered by nature, mathematics isolates and concentrates on particular aspects. This is abstraction in the sense of delimiting the phenomenon under investigation. For example, the mathematical straight line has only a few properties compared to those of the straight lines made by the edge of a table or drawn with pencil. The few properties the mathematical line possesses are stated in the axioms; for example, it is determined by two points. The physical lines, in addition to this property, have color and even depth; moreover they are built up of molecules .... Part of the secret of mathematical power lies in the use of this type of abstraction. By this means, we free our minds from burdensome and irrelevant detail, and are thereby able to accomplish more than if we had to

keep the whole physical picture before us.  
(pp. 464-465)

Together with the drive towards the discovery of an internal coherence in its subject, systematization implies as well (and necessarily) a complementary drive towards comprehensiveness. As many objects as possible that can be considered within the range of the subject are to be brought into the system. And, importantly, it is by being placed within the system that their essence is revealed. For each object is defined by the system's basic terms (and the exactly stated relations between them). And these basic terms, as has been pointed out, are chosen to name properties which, after sufficient abstraction, are seen to be common to all the objects encompassed by the system.

This, very simply, is the nature of a system of geometry. And as a very rough outline would hold good of mathematical systems to this day. But there are some features of contemporary systems that are not brought to light in this account. To elucidate these, further particularizing and the tracing of historical development is necessary.

The greatest Greek work of systematic geometry is, of course, that by Euclid. Very little of the content of his major work, the Elements, is considered original (cf. Kline (1972), "Euclid's work is actually an organization of the separate discoveries of the classical Greeks", p. 56); but what made it so impressive to his

contemporaries was his arrangement, his systematic processing of his subject. I will not describe the work (which is in thirteen books, and deals with far more than just plane geometry), but will outline his strategy. An indication is provided by the title. Aristotle, in his Metaphysics, says of "elements": "Among geometrical propositions we call those 'elements' the proofs of which are contained in the proofs of all or most such propositions" (quoted in Eves and Newsom (1965), p. 32). That is, the first principles and rules of deduction involved in the proof of the elements provide the necessary tools for the derivation of all (or most) theorems. These elements do not offer themselves immediately to the intellect; their discovery has to be earned by a careful sifting through the corpus. It is a measure of Euclid's success that his work was immediately considered definitive, superseding others on the subject.

Proclus (A.D. 410-485), an early commentator on Euclid, provides a way of understanding the product of such a strategy:

The compiler of elements in geometry must give separately the principles of the science, and, after that, the conclusions from those principles, not giving any account of the principles, but only their consequences. No science proves its own principles, or even discourses about them; they are treated as self-evident.

(quoted in Eves and Newsom (1965), p. 36)

The notion of discovering and "separating out" the first principles, and then deducing the theorems as consequences

of those principles, has already been described. What is important about this passage is that it alludes to the self-evidence of those principles. For it is on this notion that the historical change in "system"'s value and character hinges. But before drawing out the implications of such a belief, a distinction traditionally drawn among the principles themselves must be mentioned.

First principles were considered to be of two types - postulates and axioms (or common notions). The latter were (as the alternative name indicates) propositions immediately, or intuitively, acceptable, and of such a kind as to belong to no particular science, but rather to a common fund of knowledge from which all sciences could draw. An example (one used by Euclid) is, "The whole is greater than the part". The postulates, on the other hand, are directly related to the science concerned, as an example from Euclid shows, "A straight line can be drawn from any point to any point". There has been some dispute over whether the mathematicians of the Hellenistic period (post-300 B.C.), Euclid included, treated the postulates as they understood the axioms to be - self-evident. Certainly Aristotle, and perhaps others (including Proclus in the above passage), can be interpreted as believing they should not. However, the belief, if held, does not appear to have been explicitly acknowledged, and certainly does not seem to have been carefully thought out (cf. Kline (1972), pp. 52, 59).

Perhaps the most reasonable response to the problem can be found in Langer (1937). She writes:

Euclid himself does not draw the distinction between axioms and postulates very sharply; ... [he] applied the standard of self-evidence to postulates too, though perhaps within the vague and wide boundaries of a "safe" assumption rather than the strict limits of immediate truth.

(p. 185)

And as experience appeared continually to confirm the theorems, there seemed little reason to doubt that the "assumptions" from which they were drawn would remain "safe". Aristotle may have adopted a contrary view; yet till the nineteenth century, the self-evidence of the postulates was unanimously believed<sup>5</sup>.

In fact, geometry came to be regarded as the paradigm of natural sciences, capturing the essence of physical space (which was conceived of as something a single geometry could be true of). It was founded on a very small number (in Euclid's case, ten) of principles, apparently self-evident, their truth guaranteed by intuition. On this foundation was erected, following principles (again apparently) strictly logical, a vast number of propositions (in Euclid's case, 467). While some were of a high order of complexity, it appeared that the truth of all was confirmed by experience. Geometry thus seemed to provide certain truth about the

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<sup>5</sup> The "parallel postulate" provides the exception. But even so, dissatisfaction was with its postulate status and was expressed in attempts to either restate it so it would appear acceptable, or demonstrate its derivability.

world of physical reality. So it was to geometry (remembering that geometry was thought of as providing a base for number theory) that the Alexandrian and Renaissance scientists turned to revive the experimental sciences. And, as late as the eighteenth century, Kant could argue that the mind was especially fitted to perceiving physical space as Euclidean.

But, as I have intimated, the nineteenth century saw radical changes in thinking about geometry. The "parallel postulate" had from the start worried geometers. During the long period when first principles were required to be self-evident, there had always seemed something unsound about the assertion, "That if a straight line falling on two straight lines makes the interior angles on the same side less than two right angles, the two straight lines, if produced indefinitely, meet on that side on which the angles are less than two right angles". First, the complexity alone is enough to raise suspicions; compare the neatness of the postulate quoted above (p. 47). Second, as Proclus pointed out (see Kline (1972), p. 864), there is no reason to believe that the lines will not be asymptotic; that is, while tending towards each other, they may never actually intersect. Third, the postulate does imply the possibility of knowledge about the behaviour of lines which are produced indefinitely; and knowledge of the infinite (for this is what it amounts to) is far from self-evident. These are some of the objections that can be,

and have been, brought against the statement as postulate <sup>6</sup>.

It was in the nineteenth century that the possibility of a consistent geometry without Euclid's postulate occurred to a number of mathematicians; that is, they discovered that the parallel postulate was independent of his other nine axioms. This meant that a system of geometry could be created that denied Euclid's postulate. To illustrate the possibility, consider the geometry of a sphere; then using the language of geodesics, consider two longitudinal great circles. These lines are cut by the equator, and, at each point of intersection, a right angle is formed. Yet these two lines extend to meet at the poles. The triangles thus formed contain angles of sum greater than 180 degrees. This contradicts a theorem within Euclid's system, that the sum of the angles in a triangle will equal 180 degrees. The source of the inconsistency is simply pointed to. For the longitudinal lines that meet at a finite point (one of the poles) form, when cut by the equator, two interior angles that are right angles and not angles each less than one right angle. This discovery that logically consistent geometries could exist with their own distinctive theorems (and each

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<sup>6</sup> For a detailed account of work on the parallel postulate prior to the nineteenth century, and the creation in that century of non-Euclidean geometries, see Kline (1972), pp. 863-874.

characterizing and clarifying different conceptions of space), had important implications within mathematics and neighbouring disciplines <sup>7</sup>, and provided the notion of "system" with new value.

The change in importance the notion of "system" had in mathematics may be suggested by drawing out the metaphysical assumptions of pre-nineteenth century geometry and those of the nineteenth century and afterwards. In pre-nineteenth century geometry, the theorems were true of an accessible material reality. Moreover, this reality was rational, existing in such a way as to be clearly apprehended by reasoned thought. To systematize a body of theorems (each of which being on its own true of a portion of that reality) was thus to lay bare reality's rational structure. However, with most of the theorems confirmed individually by experience of physical reality, systematizing tended to play a secondary role - usually that of being merely an aid to easy comprehension. And it was possible in the eighteenth century to create mathematics with little regard and even scorn for the systematizing activity (see Kline (1972), pp. 617-621).

With the nineteenth century, these assumptions were discarded. Questions understandably arose as to which of the geometries was the true one. There were

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<sup>7</sup> For a fuller account than can be given here, see Kline (1954), chs. 25, 26.

attempts to test each of the systems in experiment, but no conclusive evidence could be arrived at (see Kline (1954), p. 418, and Eves and Newsom (1965), p. 77). Questions of the "truth" of any one or other system began to appear idle. There was no one geometry true of a monolithic material reality. Nevertheless, geometry, in some way, still seemed to "fit" aspects of the external world. And not only Euclidean geometry, which was still the "best" geometry for everyday purposes, for it was not long before a use was found for a non-Euclidean geometry in astronomy and Einstein's theory of relativity. The word "use" is indicative: geometrical systems were no longer considered as being either true or not, but rather as possessing potential pragmatic value. This, of course, shattered the belief that an assumption could be justified by empirical experience of the "correctness" of a theorem. Contradictory theorems could prove equally applicable, though in different areas of experience. Thus the need for the self-evidence of the basic assumptions of the system was abandoned. Axioms could be counter-intuitive, and yet prove, via the derived theorems, profitable. As Boyer (1968) remarks, "One of the definitive contributions of the nineteenth century was the recognition that mathematics [and this included geometry] was not a

natural science" (p. 649)<sup>8</sup>. Mathematics thus became even more abstract. To an even greater extent, attention was now focused on the logical workings of the system; and the possible "truth" of the theorems they contained was, to the "pure mathematician", secondary, if not irrelevant. As a theorem could only be "true" within a system, and systems were of pragmatic value only, systematization became of prime importance; for it was only a flawless system<sup>9</sup> that could guarantee the truth of a theorem.

There was a similar development, in the same century, in the field of algebra. Until the 1800's, algebra had, in Europe (the Greeks had not developed an algebra, which came to Europe from India and Arabia), been considered as merely generalized arithmetic, a useful tool with which to calculate and solve problems.

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<sup>8</sup> A qualification needs to be made at this point. There is no contradiction in denying that mathematics is a "natural science", and asserting its "hypothetico-deductive" nature, as, for example, Eves and Newsom do (1965, p. 93, passim). The former implies that the mathematician need feel no allegiance to material reality; the latter allows that "hypotheses" are of interest only if some successful application is found for some part of the derived system.

<sup>9</sup> An indication of how recognition of this need provided a stimulus to acquiring a more sophisticated understanding of logic, can be suggested by quoting a not unjustified iconoclastic passage from Bertrand Russell: "[Euclid's] definitions do not always define, his axioms are not always indemonstrable, his demonstrations require many axioms of which he is quite unconscious. A valid proof retains its demonstrative force when no figure is drawn, but very many of Euclid's proofs fail before this test .... The value of his work as a masterpiece of logic has been very grossly exaggerated". Quoted in Kline (1972), p. 1005.

Moreover, numbers were understood only intuitively; there had been little attempt to systematize as there had been in geometry. The first important developments occurred in the work of the English mathematicians, Peacock and de Morgan, with their discovery of structural properties in the algebra of real numbers <sup>10</sup>. These properties they stated as axioms, and claimed that the remaining laws of algebra could be derived deductively as in geometry. Yet though this perception of structure was an important step, the ties of algebra with ("natural") arithmetic remained firm in the way that geometry had been inseparable from description of a single "natural" physical space.

But in 1843, an Irish mathematician and physicist, William Hamilton, as a result of years of pondering on problems in physics, invented a type of number he called a quaternion, and later developed an appropriate algebra. Without going into any detail about the nature of these numbers, it is sufficient to say that in the resultant algebra, the commutative law for multiplication does not hold. As this algebra proved comprehensible and useful, the idea was sown that many further types of algebraic structure were waiting to be created and explored. The

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<sup>10</sup> For example, the commutative law (for addition,  $a + b = b + a$ ; and for multiplication,  $a \cdot b = b \cdot a$ ) and the distributive law ( $a(b + c) = a \cdot b + a \cdot c$ ). Kline (1972) lists the eight then generally accepted axioms on p. 775.

development of Galois's ideas on the "group" (see Eves and Newsom (1965), p. 140 ff., and Barbut (1970) for lucid explanation of this concept) proved of central importance as a unifying concept in geometry, and added impetus to this interest.

In this shift from the algebra of real numbers to the study of general algebraic structures, there was, as in the parallel development in geometry, a tendency away from the intuitively clear, from foundations in common-sense or tradition. (This, of course, raised the question that if common-sense did not supply the foundations, what did? Attempts to provide an answer occupied much of the late nineteenth and early twentieth centuries.) It meant that mathematicians were free to create systems, not only discover systems among existing material <sup>11</sup>. The only constraint upon the creator was that his system be consistent; that is, that his set of axioms do not result in a contradiction within the system. Of course, a system is required to be "interesting"; that is, that it should produce non-trivial results,

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<sup>11</sup> To provide an awareness of the sort of activity that can be involved in this sort of creation, I quote from Eves and Newsom (1965): "By developing algebras satisfying laws different from those obeyed by common algebra .... by weakening or deleting various postulates ... or by replacing one or more of the postulates by others, which are consistent with the remaining postulates, an enormous variety of systems can be studied" (p. 137). They continue by listing some of the most important structures created in this way, and conclude by remarking that "it is probably correct to say that mathematicians have studied well over 200 such structures".

results not immediately obvious from the axioms. But this is not a formal constraint, and involves a number of uncontrollable, though important, factors, such as the level of experience of the mathematician, his ability to perceive relations with other areas in mathematics, his ability to perceive possible applications outside mathematics, etc. <sup>12</sup>.

Thus with the transition in thinking marked by the acceptance of non-Euclidean and non-arithmetical algebras, it came to be realized not only that systematization was of crucial importance, but also that the first principles of a mathematical system need not be self-evident. A result of this latter realization was that the old distinction between axioms and postulates was discarded as irrelevant: all initial assertions are equally "arbitrary" and to be called axioms. And as a further consequence, there occurred the idea that not only need the axioms not be self-evident, they need not have meaning at all. What matters solely is their logical form. For if what is important is the logical correctness of the system, the correct relation of theorem and theorem to axiom, then all that is of concern regarding the

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<sup>12</sup> Cf. Gandy (1972), p. 144, who provides an example of what is meant.

axioms is their logical form, their logical syntax <sup>13</sup>.

It is at this point that the specifically modern idea of the formal system makes its appearance. Fundamentally, little is changed of the idea of system as developed by the Greeks and discussed above. Yet it did, in the transition of thought just detailed, undergo subtle but extensive modification. In attempting to suggest something of the character of the result, I will, for convenience, quote a passage from Bourbaki (1948), and then expand on it in the form of a commentary. "He" <sup>14</sup> writes of the "axiomatic method" (the modern systematizing process) that,

it will try, in the demonstrations of a theory, to separate out the principle mainsprings of its arguments; then, taking each of these separately and formulating it in abstract form, it will

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<sup>13</sup> To illustrate the extent to which this formalism was carried, the example of Peano's revision (following Pasch) of Euclid's geometry may be cited. For it was constructed simply as a calculus of relations (whose names were unimportant) holding between variables. On this venture, Eves and Newsom comment: "Here we have the mathematician's ultimate cloak of protection ... [against] overfamiliarity with his subject matter. We have seen that Euclid, working with visual diagrams in a field of study with which he was very familiar, unconsciously made numerous hidden assumptions which were not guaranteed to him by his axioms and postulates .... The derivation of theorems becomes an algebraic process in which only symbols and formulas are employed, and geometry is reduced to a strictly formal process which is entirely independent of any interpretation of the symbols involved" (1965, p. 92). Russell's remarks quoted above (p. 53) are, of course, relevant.

<sup>14</sup> Bourbaki is a "polycephalic" mathematician. Fang (1970), among others, provides biographical detail.

develop the consequences that follow from it alone. Returning after that to the theory under consideration, it will recombine the component elements, which had previously been separated out, and it will inquire how these different components influence one another.

(pp. 223-224)

The first point needs no discussion: it describes what any systematizer since the Greeks would have to do. It is the second part of the procedure that is distinctively modern, and which will need elucidation. Obviously these "mainsprings" will contain a number of different terms. And it is the mark of modern mathematics that these terms are treated as primitive terms; that is, terms not explicitly defined in the discourse. (This must, for logical reasons, necessarily be so for any rigorous system - or circularity will result.) They may be talked about in an informal way so as to provide them with intuitive content; yet this content will play no part in the logic, the systematic nature, of the theory. The informal explanation serves merely as a stepping-stone to the implicit definition that is given the terms by the way they are used within the system, and, initially, within the axioms. It is their use within the larger mathematical context that provides them with the means

to be understood, with the relevant meaning <sup>15</sup>.

But though a term's meaning is only implicitly defined, it is not for that indeterminate - in the way that meaning in language to a large extent is. For the formal system provides a carefully controlled context for the term. In any non-technical use of language, words bring associations derived from contexts of past use which provide a core of meaning the immediate context to a greater or lesser extent modifies. And there is no strict definition to such contexts, either past or immediate, no saying exactly how much of each is relevant. This is not the case in any formalized branch of mathematics, where the required intelligibility of a

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<sup>15</sup> For example, in Peano's axiomatization of the real number system, three of his undefined terms are "number", "zero", and "successor of". They appear in two of his five axioms as follows:

- 1) Zero is a number
- 2) If  $a$  is a number, the successor of  $a$  is a number.

These three terms would, of course, need no informal introduction - their intuitive content is common property. But the meaning they gain - all and only what can be precisely asserted of them - the developed system provides. Of this system, it is perhaps useful to stress here that, in the last analysis, no terms other than the undefined terms in the axioms are used in its development. And of the axioms, as can be readily seen, that they wear, as it were, their logical form on their sleeve. In this form, they are ready to be manipulated, in the generation of the system, according to the rules of a logical calculus. (Mathematical or symbolic or formal - logic was developed in the nineteenth century partly to satisfy the need for a logic to cope with the stresses within mathematics itself. The resulting calculi have proved a more powerful tool than the previous Aristotelian logic. Kline (1972, pp. 1187-92) provides a succinct account of its history.)

term is solely a function of its immediate context of use. As this applies to every term in a system, and as the rules that combine them are the basic rules of an exact formal logic, such a context is necessarily explicit. And, like its context, the term's meaning is thus "public and fixed" (Langer, 1937, p. 79):

With this accent on the undefinability of primitive terms, and on their characterization solely in terms of their behaviour in their immediate context, it seems obvious that the next stage should be the realization that the primitive terms could be replaced, without loss, by variables ("x", "y", etc.). For the rules that govern the terms' behaviour within the context that gives them intelligibility are rules (of formal logic) which disregard meanings, and operate solely upon logical form. Having thus substituted the primitive terms for variables (what Bourbaki in the passage above calls "formulating in abstract form") the axioms are now ready to play their role in the reconstruction (the "recombination") of the theory; the variables are ready to be manipulated in a quasi-mechanical, accurate way in generating the system, and thus revealing its logical

kernel, its structure <sup>16</sup>.

In the final analysis, it is possible (though not probable) to create interesting mathematical structures with nothing but a set of variables and a formal logic in mind. It is this high degree of abstractness allowed, or rather encouraged, by the (formal) axiomatic method, that allows Gandy (1972) to remark apropos mathematical structures,

[that] firstly, the nature of the objects [their terms might refer to] is of no importance; the objects are simply what the relations are between ... [and] ... secondly, the nature of the relations is also irrelevant; they are to be considered as given in extension [that is, the permissible

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<sup>16</sup> By way of brief (and simplified) illustration, the axioms from Peano's system (quoted above, p. 59, fn. 15) may be looked at. The primitive terms "number" and "zero" represent elements of the structure, while "successor of" represents a relation that may hold between them. For both elements and relations, algebraic symbols may be substituted. (So that the elements and relations are kept distinct in the formalizing process, different types of symbols are used: for example, in this instance, "a", "b" can be used as symbols for the elements, and "R" or "S" for the relation.) As is obvious, the axioms determine how the elements "number", "zero" may or may not combine with respect to this relation. One theorem derivable from the set of five axioms (and its converse is not) is that "If a is a successor of b, then b is not a successor of a". This is obviously the case. But what is important is that, when translated into a statement containing only symbols and logical connectives - "If aSb, then not bSa" - it is derivable strictly from the axioms when they too are expressed in the same way. The logical form of the axioms and the explicitly-stated rules of the logical calculus guarantee this. Ideally, all theorems can be generated in this way. And, of course, should there be an alteration in the logical form of any one of the axioms, the result would be a change in the theorems generated - a system with a different structure.

concatenation of elements and relations are to be listed, or defined such that it is possible in theory for such a list to be drawn.

(p. 142)

But it may be asked of the axiomatization of existing branches of mathematics whether it is creative in any way other than providing an explicit demonstration of the implicit logic of these branches. Is it thus little more than a form of elegant pedantry? Kline (1972) raises this question himself, and answers:

The rigorization of mathematics may have filled a nineteenth century need, but it also teaches us something about the development of the subject. The newly founded logical structure presumably guaranteed the soundness of mathematics; but the guarantee was somewhat of a sham. Not a theorem of arithmetic, algebra or Euclidean geometry was changed as a consequence .... In fact, all that the new axiomatic structures and rigor did was substantiate what mathematicians knew had to be the case .... All of which means that mathematics rests not on logic but sound intuitions. Rigor, as Jacques Hadamard pointed out, merely sanctions the conquests of intuition.

(p. 1026; cf. Fang (1970) for a more vitriolic polemic against "rigorization")

But explicitness, as Kline (1972) elsewhere recognizes, did, and still does, have its value, being in a number of respects conducive to mathematical creation.

I have already indicated (p. 51 ff.) that the clarification of axiomatic notions provided an intellectual environment in which the creation of diverse new abstract structures was stimulated. Moreover it played another important role in the late nineteenth century in leading researchers into mathematics' foundations. It has already been pointed out that once axioms need no longer be self-evident, intuitive acceptance of a

particular branch's axioms could no longer provide a foundation for that branch. The search was thus for unity (and certainty) by way of generality; for a set of axioms from which all (or most) of mathematics could be derived. These would not need to be self-evident, only informally comprehensible. For some time the search, which occupied many of the greatest mathematical minds of the time, looked as though it would be successful. Geometry was discovered to rest on the axioms of the real number system; the latter was found to rest on the system of integers. This in turn could be reduced to the natural number system, the system of simple arithmetic. Further attempts, such as that to rest mathematics on set theory proved less satisfactory (set theory was found to generate a number of unwanted contradictions - see Kline (1972), pp. 1183-85). Russell and Whitehead's attempt to reduce all of mathematics to the concepts and laws of logic found even less acceptance. Hope seemed to remain though for the natural number system. All that was needed was a proof derived within the system that the system was consistent and complete. But in 1931 Kurt Gödel published his monograph demonstrating that this was impossible. Not only could consistency not be formally proved in the above manner, but also, if a set of axioms was to be considered consistent, it would necessarily be incomplete; that is, it would be incapable of generating at least one accept-

able assertion within the system <sup>17</sup>.

The hope of encompassing mathematics and even one branch of it seemed dashed. Mathematics did not, of course, at that point cease. Yet, while flourishing as perhaps never before, that branch of it that dealt with foundations assumed less importance. Still the axiomatic method was not tarnished by that larger failure, as is evidenced by the work of the "structuralist" mathematician Bourbaki. Again axiomatization is not treated as an end in itself; nor does it serve merely to "rigorize". It must be stressed that again it serves as a means to further mathematical creation. For it is harnessed to provide perceptions of unity - perceptions, at a high level of generality, of the relation between structures of well-explored branches and those lesser known, so that these in turn may serve as an aid to further discovery <sup>18</sup>. Mathematics, in its privileged position of not being entirely "earth-bound", thrives on the extreme abstraction the formal system exemplifies.

In conclusion, I provide a few brief, general remarks on the modern conception of "system" in math-

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<sup>17</sup> I refer the reader to the excellent explanation for the non-mathematician of Gödel's work, and the background that made it significant, provided by Nagel and Newman (1959).

<sup>18</sup> For a fuller (and technical) account of how this perception of unity is achieved, see Bourbaki (1948). In this article reference is made to the "mother-structures" and "multiple-structures" for which Bourbaki has become well-known.

ematics. Some of what has preceded will be repeated, but all, I hope, of this brief summary account will gain significance by being seen against the background of that historically organized delineation. What follows does not, of course, aim at completeness; only detail believed significant for the characterization of the archetype has been chosen.

1. Mathematical systems are forms of extended logical discourse, the rules of the logic used being precisely determined. Any mathematical statement is "true" (valid would be more correct) only within a system. It is the system's consistency that guarantees truth, not correspondence with an external reality. A system may be applicable, but not absolutely true of a reality that allows of only one true representation.

2. "System" can (loosely) be identified with either the initial or end state of the systematizing process; that is, either with the initial body of axioms and generating logic (or set of elements and operations) or with the final set of derived propositions. "Structure" can be applied in a similarly loose way on the analogy that every system has a structure. More precisely, however, system often implies process - for example, derivation, addition, etc. - where structure implies simply the static quality of being constructed out of relations. Systems can, of course, in this sense, be converted to structures (their structures can be explicitly revealed); for the derivation of one state-

ment from another, for example, can be reduced to the relation "derived from" holding between them. Likewise, the addition of two numbers can be reduced to the relation "sum of".

3. The terms of a system need have no meaning, and ought, for accuracy, to be treated as variables. What counts is the logical form of the axioms, and the distinctive structure of the assertions derived from them. Terms, as variables, may be assigned meaning. This process is known as providing an interpretation of the structure. The same structure may have a number of different interpretations (cf. Gandy (1972), p. 144; Barbut (1970), p. 375, talks of "representations", by which he intends the same thing). Alternatively, this point may be understood from the opposite perspective by saying that different sets of "objects" (not necessarily physical objects in the sense of "tables") may display the same structure in their relations to one another.

4. When meaning-content is assigned to a variable (and it is important to note that this meaning is unitary), it loses all traces of meaning that are not in accord with what is assigned in the process of implicit definition. Thus in an illustration from Peano's axiomatization of the number system, "zero" means, basically, nothing other than (informally), "the number which, while possessing a successor, is not itself the successor of any number". (Of course, something similar occurs to words in the physical sciences. The word "energy" may usually

carry with it a number of disparate associations, but, in Einsteinian physics, its meaning is completely restricted by its immediate context.) Moreover, when terms are introduced into the discourse by explicit definition, their definition is merely a string of terms already existing in the discourse; the new term being thus a kind of "shorthand" for the collection of terms it "replaces" (cf. Nidditch (1960), pp. 290-291). In this way there exists no semantic ambiguity within the system <sup>19</sup>. Similarly, because the statements within the system are expressed in such a way that their logical form is apparent, there is no possibility of syntactic ambiguity. Precision is further acquired by having the laws of derivation explicitly stated in such a way that derivation becomes quasi-mechanical.

5. There remains the final point of the value of such systems. First, there is what might be called their "intrinsic" value. The system has to be consistent; that is, derivation from its axioms must not lead to a contradiction in the development of the system. And it ought to be complete; that is, all possible propositions ought to have been derived from the axioms, and the system ought to be such that the addition of one more

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<sup>19</sup> This, of course, applies to words appearing within a particular system. The same word may have different meanings in different systematizations of the same branch of mathematics, and in different branches.

axiom would result automatically in contradiction within the system. With these values, consistency and completeness, satisfied, the particular system achieves definition, and its propositions gain value accordingly. Apart from the sheer clarity earned, the refining of a branch of mathematics to fit the mould of a formal system has acted, and continues to act, as an aid to inspiration in the creation of new mathematics.

This, then, is an indication of the reservoir of ideas from which a Structuralist might draw in his perception of a phenomenon. No other developed idea of "system" (and "structure") seems in the twentieth century to have the same power (or sense of appropriateness - mathematics in this century more than any other being the ubiquitous servant guiding the exact sciences and the technology they give rise to). And even if a Structuralist were to ignore the mathematician's refinement of the idea, and develop his own model, it is hard to believe that the development would not run parallel, that, in broad outlines at least, their ideas would not be translatable.

It was pointed out at the start of this essay that the literary Structuralists turn to linguistics for their archetype, and that, in turn, structural linguistics finds itself on the idea of language being a system. Obviously, if language can be successfully and satisfyingly thought of as being a system, the use of the archetype in literary studies is virtually justified.

All that would then be necessary would be the clarification of the relation between language and literature - which, the medium of literature being language, should not be too difficult - and the archetype would be plausible. The point is crucial, and examination of an attempt to see language as a system, illuminating. Thus the next chapter will devote itself to an examination of the adequacy of the archetype in language-study.

## CHAPTER THREE

### SYSTEM, STRUCTURE AND LANGUAGE

As I mentioned earlier (p. 1), it was Saussure's thought at the beginning of the twentieth century that proved the ground for the subsequent revolution in linguistics. From studying the change, over a long period of time, in a few isolated features of a language, he insisted that linguistics regard the state of a language at one moment as the prior object of study; further, that this state itself be regarded as a system of interdependent elements. Of course, this demand for a change in orientation need not have produced significant results ("system" was not a word new to language-study - cf. Lepschy (1970), p. 34, and Robins (1967), ch. 7 - having been important in organicist thought), if he had not introduced a number of distinctions that clarified his vision and provided useful analytical tools for further research. I will discuss three of these briefly, three that may be considered central both to his own thought and to the thought of all different types of structural linguistics that followed him.

The first is between synchronic and diachronic study. As has been pointed out, research into language was, in the nineteenth century, predominantly historically oriented, concerned with tracing the development

of selected features of particular languages. In searching for the true object of linguistics - and it is perhaps significant that a search is necessary - he emphasized the institutional nature of language, seeing it as a body of interrelated conventions permitting communication, which not only admits, but requires, study at any one point in time. This study of a single state in the historical existence of a language, each state conceived of as an organic whole, he gave the name "synchronic". The study of the relation between such states, he termed "diachronic" (to be distinguished from the earlier form of historical linguistics, which did not presuppose prior synchronic studies).

The second important distinction supporting this one, and clarifying and giving content to the idea of momentary states in the existence of a language, is that of langue and parole. Briefly, parole (translated by Baskin as "speech") is the aspect of language which involves the individual communicative act. Inherent in the world of experience, it can, as Saussure pointed out, be sorted into further aspects, the "physical, physiological, and psychological" (1916, p. 9). It is essentially the activity of individuals, the production of utterances in communication. And underlying this activity, making it possible, is the system, langue. Unlike parole, langue is, in Saussure's terminology, "homogeneous", having psychical existence alone. But it does not have complete existence in the psyche of any

individual; its existence as a totality is collective. There is obviously a close relation - one of mutual influence - between langue and parole. Saussure (1916) writes:

[ Langue ] is both a social product of the faculty of speech and a collection of necessary conventions that have been adopted by a social body to permit individuals to exercise that faculty.

(p. 9)

Parole, with its regularities that allow for communication, both implies the conventions of langue and determines their nature. As "social product", langue is a "storehouse filled by the members of a given community through their active use of speaking" (p. 13), a "storehouse" of signs which are regarded as "associations between sound-image and meaning which bear the stamp of collective approval" (p. 15). It is this association of sound-image and meaning which constitutes a part of the conventional aspect of langue. The remainder is constituted by the relations the signs themselves enter into. For langue is not simply a "storehouse"; it is also a system. And it is this systematic nature of langue, the associations and relations its elements enter into, that is, for Saussure and the Structuralists after him, the proper object of linguistic study.

The relations the signs themselves enter into were to be understood in the light of a further distinction, one between "syntagmatic" and "associative" (the word that usually takes the latter's place in post-Saussurean writing is "paradigmatic", and it will be used here).

Speech is a linear phenomenon, the elements involved in its composition occurring sequentially. In what Saussure (1916) calls "the chain of speaking" (p. 123), these elements are apt, or have the potential, to occur in certain contexts and not others. This combination of an element with its immediate linguistic context, he called a "syntagm" (p. 123), and the relation between element and context, "syntagmatic". An example can be given from elements at word-level: "fell" in the phrases, "the rain fell heavily", and, "the child fell", contracts syntagmatic relations with "the", "rain", "heavily" and "the", "child", respectively. On the other hand, the paradigmatic relations a linguistic element contracts are those relating it to elements of the same type that can occur in the same context. For example, in the sentences above, "fell" is related paradigmatically in the first case to "splashed", "poured", etc., and, in the second, to "laughed", "skipped", etc.. Within these two types of relation, others can be distinguished. For example, within the class of paradigmatic relations occur contrast and equivalence; and within the second class, occur the types of relations that bind an element to its neighbours (cf. Lyons (1968), ch. 2.3).

Thus, while never using the word "structure" himself, Saussure gave direction to future language study - setting it the goal of defining the structure of relations that comprised the system (cf. Benveniste (1966), ch. 8). There is no need to devote any attention to the

development of Saussure's ideas, into the details of the remarkable volume of work they inspired. Sufficient has been shown to suggest the affinities of his idea of langue with the mathematics that had been developing in the nineteenth century - the insistence on the purely formal nature of langue, the idea of its being a network of relations, the assumption that, in the final analysis, the elements these relations hold between are distinct "units", and that they, without substantial content, have no other existence than that of marking the nexus of different relations (cf. on this point, Saussure (1916), "but in language there are only differences without positive terms", p. 120). Saussure did not develop any systematic connection between linguistics (or language) and mathematics; yet he did, at least once, explicitly draw the analogy. He is occupied (p. 122) with discussing the "grammatical fact" exemplified by the relation nacht:nächte, and continues:

Each term present in the grammatical fact (the singular without umlaut or final "e" in opposition to the plural with umlaut and "-e") consists of the interplay of a number of oppositions within the system. When isolated, neither nacht nor nächte is anything: thus everything is opposition. Putting it another way, the nacht:nächte relation can be expressed by an algebraic formula  $a / b$  in which  $a$  and  $b$  are not simple terms but result from a set of relations. Language, in a manner of speaking, is a type of algebra consisting solely of complex terms.

Thus he not only provided an indication of what sort of analysis was required to isolate the structure of a language; he also provided the pregnant suggestion that

since language was "a sort of algebra", it might perhaps be best represented mathematically.

This is no place to enter into an account of the development of structural linguistics, or into its relation to the concurrently developing mathematical linguistics<sup>1</sup>. Not all structural linguists have taken an interest in the related mathematical branches - of which two main types can be distinguished: statistical, concerned with quantifying data, and algebraic, concerned with formalizing, systematizing grammatical knowledge (cf. Lepschy (1970), p. 140). Nevertheless, from what has been pointed to in the writing of Saussure, mathematical ("algebraic") linguistics can, whatever difference in historical roots, be reasonably seen as a logical culmination of the original Structuralist vision. Evidence of Structuralist hopes for mathematics can be found in the interest taken in the subject by, among others, the patriarchal figure, Roman Jakobson (see Jakobson (1971a), pp. 568-569). It is, however, Noam Chomsky who has extended the influence of mathematics into general linguistics most authoritatively. In the language, the strategy and aims, the conceptual model of the formal system is prominent in Chomsky's theories

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<sup>1</sup> For relevant histories, see Lepschy (1970) and Robins (1967); for the mathematics of formal grammars, see, for example, Kasher (1975), Hockett (1967) and Brainerd (1971).

(his psychological "metatheorizing" excluded). In what follows, I will outline, in simplified form, Chomsky's approach to language <sup>2</sup>, pointing out, where relevant, some links with what has been shown of Saussure's thought. And as Chomsky appears to be the most influential exemplar of Structuralist thinkers about language, problems with his approach that limit its value and, certainly, its persuasiveness as to the claim to its being "scientific", may thus usefully be glanced at. The objections do not aim to be conclusivè; but enough room for dissent is shown to exist suggesting that the success of Chomsky's undertaking to uncover the "real" structure of language may reasonably be doubted. And, finally, having thus considered Chomsky's structural

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<sup>2</sup> Though there remains a fundamental allegiance to the idea of the formal system, there have been developments in Chomsky's thought that this outline, in its schematic nature, has ignored. It has also been, necessarily, somewhat selective in its interpretations. Many of Chomsky's terms are not well-defined: in the sense of being provided a definition at the outset of a work which alone guides its subsequent use. This in itself is not a fault. But it points to the fact that Chomsky's "science" has not yet been formalized, that it remains at the "suggestive" phase. It is as a consideration of these suggestions that the remarks following the outline are offered. Furthermore, there has been no mention of the "deep structures" for which Chomsky is perhaps most well-known. Apart from the fact that Chomsky himself has advocated avoiding the term - as it has proved easily misunderstood (1975, p. 81 ff.) - it has been avoided for the same reason "transformations" do not make an appearance. Both are particular details of the logically prior "generative grammar", and it is with the outline of this idea that I am concerned and not any of its particular refinements.

approach in its own terms, pointing out how many of the reasons for doubt may be traced to the archetype, I briefly discuss, from the viewpoint of an interest in literary language, some of the limitations attendant on any attempt to think of language in terms of formal systems.

Chomsky, in his important early work, Syntactic Structures, offers a neat (and programmatic) definition of language and of grammar:

From now on I will consider a language to be a set (finite or infinite) of sentences, each finite in length and constructed out of a finite set of elements ... [as, for example,] the finite set of "sentences" of some formalized system of mathematics can be considered a language. The fundamental aim in the linguistic analysis of a language L is to separate the grammatical sequences which are the sentences of L from the ungrammatical sequences which are not sentences of L and to study the structure of the grammatical sequences. The grammar of L will thus be a device that generates all the grammatical sequences and none of the ungrammatical ones.

(Chomsky, 1957, p. 13)

I quote at length because this passage remains crucial to Chomsky's thinking, and so provides a useful starting-point to the drawing of the outline. To this end a number of points may be made in comment.

First, there is the explicit statement of the analogy between language and mathematics - more interestingly, a particular type of mathematical product, the formal system. For there are other ways of conceiving of a relation between language and mathematics - as in the statistician's endeavour to quantify the probability of an element's occurrence, or in the idea that math-

ematics is a refined continuation of language (Hockett, 1968, p. 75, ch. 6) or a schematic revision of language in the service of clarity (Quine, 1951, p. 5). But it is an assertion of the analogic relation with "system" (typically Structuralist) that Chomsky chooses to make.

The second point is that he talks of the sentence as being "constructed out of a finite set of elements". The language is that of the branch of mathematics known as "set-theory". It is a feature of this language that its discourse concerns objects collected into sets, or classes, according to a common property. (For example, from the set of all positive integers, one may specify the set of all positive integers that are even.) Objects, which may be equivalent to a complex of properties, and the properties themselves are both considered unitary. While, in the case of language, component units are easily distinguishable at the level of orthography, and, perhaps also, of phonology, at levels less obviously physical problems must arise which may or may not admit satisfactory solution. Can, for example, meanings be thought of as distinctive combinations of component units in the way that written words can? Is there an "alphabet" of semantic properties? This "building-block" idea of language (sentences "constructed" with "units") can be seen to operate implicitly at a higher level as well. A language is defined as a "set of sentences", each of these being understood as units permitting study in isolation. This view, implying language to be a sum of discrete

(albeit systematically related) sentences, has problematic consequences, as will be seen later.

The third point concerns the idea of "generation". The word is used in this passage solely in its mathematical sense<sup>3</sup>. In a formal system, as the preceding chapter has shown, the "theorems" are derived via precisely specified derivation (or transformation) rules from its particular set of axioms. Equally, one might say that the axioms and transformations generate the theorems. And, as was pointed out, since the rules are precisely given and the axioms stated using symbols to be conceived of simply as "counters", simple manipulations of substitution, deletion, etc. are possible, and this generation is, in principle (and ideally), mechanical (hence Chomsky's use of the term "device", which recalls the abstract machine studied by automata theory). Similarly, the numbers 2, 4, 8, 16, 32, etc. are said to be generated by the form  $2^n$  (where "n" is a natural number). That is, giving "n" a value from the natural numbers allows each of the above numbers (and no other) to be calculated. The calculation is, of course, done according to rules precisely specified so as to permit only one answer, and so again may be thought of as mechanical.

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<sup>3</sup> Cf. Katz (1972), who also demonstrates that this use has become orthodox: "... a generative grammar is generative in the sense ...[that]... the grammar itself must be a formal system, and the assignment of readings [in the semantic component] must be computable in the grammar", p. 389.

This notion of "generate" characterizes Chomsky's grammar and the way in which it sets out to order the details of language. A language (for Chomsky) consists of its elements ordered into correct (grammatical) sequences. (Incorrect sequences are, of course, possible, but they, as it were, "fall outside" the language.) If all the correct sequences are collected (assuming for the moment that this can be done) and analyzed on the basis of perceived regularities into various sets of component elements and rules of combination, then beginning with the component elements and operating with the rules, the correct sequences (the sentences) of the language may be said to be generated<sup>4</sup>. The problem of analysis (apart from the methodological problem of how best to go about analysis) is thus of a dual nature: how are the component units best characterized, and what types of rule (as well as which individual rules) are best utilized in the generation? These two questions may be said to have occupied Chomskyan linguistics from

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<sup>4</sup> Cf. Langer (1937): "When a system is completely stated, its propositions may be listed in such a way that each list shows a marked internal regularity", p. 107. This provides an indication of the motivating idea. From the listed propositions (or, in this case, grammatical sentences), one works "backwards", through analysis, to discover the system that generates them. And, cf. Lepschy (1970), p. 29. Of course, Chomsky's grammar is "mentalistic". His system, unlike the system outlined above, incorporates "underlying" regularities (deduced from cases of "sentence-synonymy"). But this does not alter what has been said of the principle of the approach.

incomplete, the appearance of a grammatical sentence not used in the selection will be either confirming or disconfirming evidence (cf. Chomsky (1957), p. 49), depending on whether or not the new sentence is generable within the system. In this sense, then it is understood that the postulated system helps predict the occurrence of grammatical sentences in a language. Any oddness sensed in this formulation is the result of an ambiguity (to be discussed below, pp. 105-106) between grammatical, as generable in a formal grammar, and grammatical, as accepted intuitively as such by a native-speaker. What in fact the linguist "predicts" is the overlap of these two senses.

So Chomsky inherits, and, to a certain extent, has modified, Saussure's idea of language as being constructed from a collection of related elements. He, also, in his later works, makes explicit use of Saussure's langue/parole distinction. His early works had shown traces of the influence of the American "structural" linguists - against whom he was reacting. For example, Chomsky talks of working with a "corpus" of sentences, a body of empirically acquired material that provides the linguist with the sole object of his enquiry. American "structural" linguists, determined to avoid any intrusive psychologizing, were "corpus"-oriented in this sense. (And, it is interesting to note, they thus qualified for "excommunication": European Structuralism regards these so-called "structuralists" as a temporary aberration in

the history of structural linguistics, using, but with different evaluative overtones, the name Bloomfield adopted for the group - the "mechanists". See Jakobson (1971a), p. 716, and Barthes (1964a), p. 39.) But this "anti-mentalist" trace disappears when, in Aspects of the Theory of Syntax, (1965), Chomsky introduces the distinction between "competence" and "performance", and, while doing so, draws the parallel with Saussure's langue/parole. Like langue, competence is pinpointed as the underlying reality of language, and as such has prior claims on the linguist's attention. But, unlike langue, competence is a system of generative rules, and has psychological reality, not in the community, but in each individual <sup>6</sup>.

Accordingly, the linguist's task is no longer to sift through a "corpus" in the search for significant patterns. As competence is not only the system of rules,

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<sup>6</sup> See Chomsky (1965): "The distinction I am noting here is related to the langue - parole distinction of Saussure; but it is necessary to reject his concept of langue as merely a systematic inventory of items [a "storehouse" ] and to return rather to the Humboldtian conception of underlying competence as a system of generative processes", p. 4. Despite repeated assertions that the word "generate" is being used in the mathematical sense alone (see, for example, the sentence, quoted above, from Katz (1972), p. 389, and also Chomsky (1965), p. 9), ambiguities involving a sense of psychological process are definitely noticeable. The passage just quoted is an example; further evidence can be found in Chomsky (1972), pp. 28-31 and p. 38, and (1975), pp. 36, 41, passim. Moreover, I have been unable to find any statement that sets out to clarify the relation between the two senses, and between the two contexts, the mathematical and psychological, from which they are derived.

but also (as the name is intended to suggest) the ability to produce grammatical sentences and recognize them as such without deliberation (that is, intuitively), the linguist, manifesting this ability as a native-speaker himself (but perhaps more sophisticated than most), can act as his own informant. There is now no need to talk of having to collect a "corpus" of sentences for study; the linguist has, in the form of his own grammatical intuitions, a considerable body of data at his disposal. And the system of rules constructed will, it is asserted, be a representation of this "inner" (and generally shared) competence.

Appropriately, performance classifies observable features of the speech-act, of the way sentences are distorted and limited by the normal conditions of utterance. Thus, while competence is identified with an implicit knowledge of a language, performance is concerned with "such grammatically irrelevant conditions as memory limitations, distractions, shifts of attention and interest, and errors (random or characteristic) ..." (Chomsky, 1965, p. 3). Like parole in its relation to langue, performance is a secondary phenomenon, one that provides insight (once the "irrelevant conditions" are abstracted away) into the underlying competence that makes performance (in its grammatical aspect) possible. It is this grammatical aspect, and not the shape of actual utterances, that ought to occupy the linguist's professional attention, when faced with the data perform-

ance provides. Of course, "performance" as an object of study is not ignored; but Chomsky sees it as best done against the background of a prior study of competence (cf. Chomsky (1965), ch. 1.2).

Perhaps it would be an advantage if at this point I recapitulate on the general trend of what has been dealt with so far of Chomsky's thought. To this end, I will use a "quilt-quotation" constructed from Chomsky (1965). "A grammar of a language purports to be a description of the ideal speaker-hearer's <sup>REP</sup>[an idealized figure with perfect knowledge of an idealized uniform language whose knowledge is not distorted by the other factors that contribute to "performance"] intrinsic competence [[p. 4] ... [which is] the underlying system of rules that has been mastered by the speaker-hearer [ p. 4 ] ... a system of rules that in some explicit and well-defined way assigns structural descriptions to sentences [p. 8]."

With the introduction of the competence/performance distinction, a number of other related distinctions follow. There was certainly a need for a change in the ideas on grammaticality. In Chomsky (1957), he wrote of utterances being "actually grammatical, i.e., acceptable to a native speaker" (p. 13). This is obviously inadequate if "acceptable" is understood (as is reasonable) as something like "playing its part in the various forms of

linguistic behaviour, countenanced by the community" <sup>7</sup>. And of all the sentences "accepted", for example, in special contexts (such as poetry), or in the context of the immediate contingencies (sometimes critical) of social co-operation or other forms of personal interaction, not all will find their place in the grammarian's list of "correct" sentences. So Chomsky draws a distinction between grammatical and acceptable, and characteristically: ~~in~~ the same way that competence is just one of the many factors involved in performance, grammaticality is but one of the factors influencing an utterance's acceptability (Chomsky, 1965, p. 11). (That a sentence can be acceptable without being grammatical, yet that there can be no performance without competence, Chomsky would not deny and is of no importance here.) At the same time, Chomsky, significantly, made the requirement a successful grammar would have to meet less rigid as well. Instead of having to generate all and only the grammatical sequences (see the passage from Chomsky (1957) quoted above, p. 77), it need rather

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<sup>7</sup> This is a wider definition than the one Chomsky gives (1965, p. 10). His definition is determined to an extent by his idea of performance, and to that extent is not atheoretical (or, pretheoretical). The same might be said of Chomsky's idea of grammar. It is not unreasonable to conceive of a grammar as a guide to the use of a language - indicating model sentences and the rules of construction generalized from these, exceptions to the rules and idiomatic expressions. Chomsky, of course, uses "grammar" in a more ambitious (and certainly questionable) sense of something a native speaker has internalized, of a representation of his linguistic competence, an actual mental possession of a speaker.

"correspond to the linguistic intuition of the native speaker ... [only] in a substantial and significant class of crucial cases" (Chomsky, 1965, p. 24; my emphasis).

More important though is that with this emphasis on competence, Chomskyan linguistics becomes overtly a type of psychology (cf. Chomsky (1972,1975), passim); and the distinction that may best elucidate this transition is the one he makes between descriptive and explanatory adequacy. Considering the model of grammar presented so far, it is conceivable that the sentences of a language may be "broken up" into elements in different ways, that different rules could be employed in the systematic "reconstruction" of the language. Obviously, a principle of economy would be at work; but beyond that there would be no external constraint (apart from "descriptive adequacy") in the design of the system (cf. Chomsky (1965), p. 37; and Hockett (1968) makes a similar point when discussing pre-Chomskyan linguistics in America, p. 35). Of two such "descriptively adequate" grammars, both more or less equal in economy of conceptual resources, is there any way of deciding which is "truer", which is the most accurate representation of the native-speaker's competence?

Chomsky's answer is to establish a criterion in knowledge of "the form of language as such" (1965, p. 35). And it is his claim that this form is revealed by a search through the grammars of particular languages for the properties they have in common. It is important to

remember that Chomsky thinks only in terms of generative grammars: for it is only they that explicitly demonstrate a language's coherence, the interrelationships of its sentence-structures. The properties will be those of generative grammars, and these Chomsky calls "linguistic universals" (1965, p. 28). (Thus "linguistic universals", whatever other associations it may call to mind, does have, in Chomskyan linguistics, a clearly delimited meaning - "general properties characterizing generative grammars for all languages".) These universals may logically, if one bears in mind the underlying idea of the formal system, be of three kinds. They may be statements about the "vocabulary" - expressible formally - of a generative grammar. An example would be the claim that the "verb" category may be found in grammars for all languages. These are called substantive universals. They may also be statements concerning the types of rules used in the manipulation of this vocabulary. An obvious example is the requirement that the grammar contain rules of a type known as "transformation" rules. These are called formal universals. And finally, there is the possibility of a third kind: organizational universals, which specify the order the rules may have to be applied in. And as the grammar consists of a number of components (see above, p. 81, fn. 5), they also specify the way in which those components are to be related. (For a fuller discussion, see Chomsky (1965), pp. 27-30, and Katz (1972), pp. 29-34.)

With common properties such as these discovered, a start has been made in constructing a positive criterion for the selection of one grammar over another (where both account successfully for a language's grammatical sentences). The grammar that conforms most with the system of linguistic universals (known as a "universal grammar", and equivalent to a "theory of language"; see, for example, Chomsky (1972), p. 126) is the grammar truly descriptive of the language. True descriptive adequacy is only possible if the grammar is at least in part defined by hypotheses about the "form of language as such"; that is, if it provides, as well as correspondence with the set of grammatical sentences of a particular language, a measure of explanatory adequacy. Thus, for Chomsky, the linguist's task is to give content to this idea of a universal grammar, to search for linguistic universals; for till this is done, no grammar is entitled to claim true descriptive adequacy (see, for example, Chomsky (1965), pp. 6, 35, 36, 41, and 46).

One important link in this outline remains to be made. For the question arises: "In what sense can discovered details of the form of language provide an 'explanation' of the phenomenon of language?" This may be put another way: "What ontological status can be granted the universal grammar?" For until questions such as these are answered the taint of arbitrariness remains. Chomsky's answer is of an intricate complexity which can only be suggested here - but I refer the reader to

Chomsky (1975), which is, in the main, a development of this aspect of his thinking.

The answer is contained in Chomsky's idea of competence. If the competence of a native-speaker is understood as being specified by a system of rules he has internalized, by the generative grammar for his particular language, then universal grammar, or the schematism that defines the form of all particular grammars, must specify features of a competence that all humans share. Universal grammar thus specifies a uniquely human possession, the faculty of language, and in so doing "... contribute[s] to the study of human mental processes and intellectual capacity" (1965, p. 46). (That the ability to use language suggests a separate faculty of mind which operates alongside other separate but interacting faculties suggested by other mental activities, is something Chomsky claims repeatedly; see, for example, (1965), p. 56, and (1975), ch. 1, and pp. 43, 54, 142-143, and 159.) Linguistics becomes concerned with accounting for one faculty of mind, while, at the same time, being part of a general "science of human cognitive structures" (1975, p. 143).

Of course, his thought does not rest there. The regularities pointed to by universal grammar require to be accounted for. Analysis of competence is "followed by attempts to determine the nature of systems capable of attaining these states under given conditions of time and access to data, and investigation of the physical

basis for these achievements, whatever it may be" (1975, p. 160). This indicates the linguist's further concern in the attempt to achieve explanatory adequacy - the attempt to provide an explanation for language acquisition. Chomsky's hypothesis is that the regularities indicated in universal grammar are the product of innate mental properties. This idea is argued for not only on the basis of such regularities, but also as this idea alone seems to allow for the fact that the complexity of competence acquired is achieved rapidly, uniformly, and in spite of the "degenerate" nature of the language the learner is exposed to. "In other words, we can ask the question, What initial structure must be attributed to the mind that enables it to construct such a grammar from the data of sense?" (1972, p. 79). And support for the idea that such "initial structures" are actually a natural endowment of the developing human mind, or, to use Chomsky's own term, the "mental organ" (1976, p. 36) that is the language faculty, is supplied by his "naturalism". He quotes approvingly a remark by Gunther Stent that "Darwinian considerations offer a 'biological underpinning' to a kind of Kantian epistemology" (1975, p. 124), and elsewhere quotes a passage in similar vein

by Konrad Lorenz <sup>8</sup>.

Of course, the introduction of biology to linguistics does not relegate linguistics to being a mere sub-branch of biology. The facts of language cannot be deduced from facts of the brain. But it seems possible, and remains the ideal, that a detailing of a correspondence between brain structure and linguistic structure could be made. The neurophysiologist is in this sense another potential supplier of evidence confirming the hypothesis of the innate schematism. To conclude, the paths Chomsky has been led along in the search for explanatory adequacy (and thus, descriptive adequacy) may be succinctly indicated in the following two quotations from Chomsky (1975).

Linguistics is simply that part of psychology that is concerned with one specific class of steady states, the cognitive structures that are employed in speaking and understanding.  
(p. 160)

And

... psychology is that part of human biology that is concerned at its deepest level with the second-order capacity to construct cognitive structures that enter into the first-order capacities to act and to interpret experience.  
(p. 38)

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<sup>8</sup> "Adaptation of the a priori to the real world has no more originated from 'experience' than adaptation of the fin of the fish to the properties of water. Just as the form of the fin is given a priori, prior to any individual negotiation of the young fish with the water, and just as it is this form that makes possible this negotiation, so it is also the case with our forms of perception and categories in their relationship to our negotiation with the real external world through experience." Quoted in Chomsky (1972), p. 95.

As will have been noticed, the ideal investigator of Chomsky's thought would have to have a range of interests and information matching Chomsky's own - in linguistics, philosophy, mathematics, and current science and philosophy of science. And ideally this background knowledge would be used in interpretation<sup>9</sup> and criticism<sup>9</sup>. Yet it is possible, I believe, to locate without distortion a crucial problematic area in the use of the Structuralist archetype (or, in Chomsky's case, model). Hence, in what follows, the first section points to the problems faced in seeing language as a system, specifically, in constructing a generative grammar. The second deals with a few of the problems confronted when the grammars, for reasons mentioned in the outline above, are attributed with being representations of a mental reality. And as Chomsky uses the idea of the formal system not merely as a means to a useful perspective on

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<sup>9</sup> Because of the number of disparate areas that form a background to Chomsky's thought, misinterpretations - and consequent flawed evaluations - are not uncommon. Witness, for example, the strange ideas about the role of intuition in science in Botha (1968), pp. 69-78; and the failure to take into account the submerged mathematical model in Chomsky's notion of grammar in Hiorth (1974). Robinson (1975), perhaps for similar reasons, appears to misinterpret what Chomsky means by "language-independent". A "language-independent" explanation of a particular language is not an explanation in terms of another discipline. "Language-independent" in Chomsky's work is shorthand for "independent of any particular language". Such an "explanation" is thus carried out in the terms of universal grammar, of a set of hypothesized linguistic universals. The link with biology, say, remains potential and inessential.

language, but as revealing the underlying reality of language, the ultimate concern will be with the validity of the claim that Chomskyan linguistics is entitled to the designation "scientific". For the question, as will become apparent, is not "merely" terminological - Searle (1975), following Chomsky (for example, (1965), p. 20) would have us believe.

But first, following from the adoption of the basic metaphor, there is the defining assumption that language can be represented without loss as a formal system; that the sentences of language may be dissected into constituent segments and then reconstructed according to a finite set of explicitly stated rules, thus revealing language's prime reality. Now this is by no means obviously the case; as is shown in a comparison with an activity which is defined by rules which can be explicitly stated - chess (the comparison is suggested by Hockett (1968); for Hockett's criticism of Chomsky's idea of language as a well-defined system - a criticism closely related to the present one - see Hockett (1968), ch. 3 ff.). The rules of chess are such that they can "generate" a vast number of possible games. But each variant is played according to rules that have been set down in advance. If a move is made that appears illegitimate (if there is a "failure in communication"), there is recourse to the available explicitly-stated rules. Thus guided, a game may progress to its clearly-defined conclusion. As Hockett (1968) points out, the

game is, in this sense, mechanical. The moves of the game are computable: hence the ability of computers to "play chess" - or at least run through the moves that constitute possible games. Moreover, these explicitly-stated rules are usually deliberately learnt. Both in this, and in the fact that the rules remain accessible guides to the performance of the game (and are changed, if at all, on the decision of a select group of experts), and in the fact that a move not taken according to these explicitly-stated rules is not "chess" and would need to be retaken before the game could proceed, it seems that the parallel between linguistic activity and chess is slight indeed. Whereas this is not the case in a comparison between chess (and other games) and certain aspects of mathematics. There is nothing lost in the translation of chess into mathematical terms - as the successful operation of "chess-playing" computers suggests.

Thus, intuitively, one feels there is something wrong with the approach and the basic metaphor that guides it. And these intuitions may be refined. To this end, a different version of the chess analogy will be illuminating. Consider an investigator (analogous to the linguist) presented with, say, a series of films. In each of these films is shown a game in progress from its initial state through to its end-state: it is the investigator's task to discover the rules that allow each performance. It is likely that with patience he

will be able to sort out behaviour that is essential (functional) from behaviour that is peripheral and idiosyncratic (though he may have difficulty persuading a fellow investigator that exactly where he has drawn the line is correct). The investigator will, surely, with skill and perseverance produce a set of rules adequate to accounting for the procedure of the game. And the guess can be made with a certain amount of confidence because we know beforehand (unlike the investigator) that the essence of the game is amenable to that sort of description. Whether language is, is open to doubt. Moreover, methods used in the attempt to ascertain whether or not it might be, reveal inherent difficulties <sup>10</sup>.

But before these are discussed, there is an inaccuracy in the analogy as so far told - the investigator is not Chomskyan. To make the conversion, however, one need only redefine his task as attempting

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<sup>10</sup> I ought perhaps, at this point, emphasize that though I question the plausibility of believing that language has an essence that may be represented as a system of generative rules, I am not suggesting that language is not in some sense "rule-governed". "Rule" is a word with a number of crucially differing shades of meaning - as Black (1962, pp. 95-139) has exhaustively demonstrated. There is surely a sense in which linguistic usage is "rule-governed"; but the search for exactly what sense is not helped by assuming (I believe, implausibly) that the rules are those associated with a formal system. This point is related to the point made concerning the different senses of "grammar", p. 86 below.

to describe the "chess-playing competence" of the players. But again, we are entitled to presume that (in one sense, anyway) he will succeed, and for the same reasons. We know that the "knowledge" that allows the player to make "grammatical" moves is grounded on his having learned explicit rules. The player's "competence" is clearly-defined to begin with - which allows it to be "clearly-definable". His "grammatical intuition" is firm: each move is to be assigned one of two values - correct or, incorrect - and there is no ambiguity in the rules governing the assignment. (Evaluations of strategy are, of course, a different case: what is important to note is that in games like chess the line between the two types of evaluation is clearly, uncontroversially drawn.) One would expect, then, were language a clearly-defined system, that a similarly clearly definable competence would be indicated by intuitions of grammaticality equally firm.

Such intuitions, however, show a marked lack of uniformity <sup>11</sup>. A number of linguists have pointed to the

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<sup>11</sup> Chomsky would, of course, agree that the sentences of a language cannot be divided simply between two categories (cf. the quotation on p.87 above). He has proposed a formalized (necessarily, considering the model) theory of "degrees of grammaticalness" to account for sentences acceptable, comprehensible but not strictly grammatical (cf. Katz's "semi-sentences"). However, the introduction of these ideas does little to solve the initial problem; for "semi-grammatical" sentences (or "semi-sentences") are in both theories defined in terms of deviation from the strictly grammatical. Whatever problems there are in accurately locating grammaticality are automatically transferred to the notions dependent on it. See, for example, Chomsky (1961) and Katz (1964).

"mistakes" in Chomskyan literature, mistakes made, when, in arguing for the existence of a particular rule, the status "grammatical" or "ungrammatical" is "incorrectly" assigned to a sentence (see, for example, Bolinger (1968a), Hill (1961), Lightner (1976). Robinson (1975) too has a section devoted to "Chomsky's mistakes"). What the differences signify, of course, is that even among those who devote their time to study of language, intuitions of "grammaticality" remain irregular. By way of illustration, Hill (1961) records testing Chomsky's claims on the (un)grammaticality of a number of sentences on a select group at his university. One of his findings was that two of the ten informants accepted "furiously sleep ideas green colourless" as grammatical. This I do not find surprising. In Chomsky (1957, p. 17) this sentence was compared with its "mirror-image", "colourless green ideas sleep furiously". The latter was found grammatical, while the former was not. It seems that the grounds for the distinction were based on the idea of sentence-forms (or, more accurately, sentence-structures); the one being English, the other not. For example, "colourless green, etc." is matched by, say, "portly old men wheeze heavily". Yet with not much ingenuity, a bit of verse can be concocted:

Silently swim stars, bright, serene;  
Shoaling at the feet of the deep sky's queen.

That one would not want to say anything like it is beside the point. What is important is that it can be said,

that the sentence is part of the English language. It is a stylistic variant of the "plainer" sentence, "bright serene stars swim silently", but no less English for that. (I refer to the question of stylistic variation below.) Not all the examples are as bizarre. Bolinger (1968a), for example, cites "the girl was turned to" as qualifying for ungrammatical.

Bolinger, in the same article, points to an important reason for this irregularity.

... Differences in opinion are generally ascribed to differences in dialect, but other factors weigh more heavily. One is allied to literary imagination; many people are unable to conceive of what they might say except under the most banal circumstances. A sentence such as "It wasn't dark enough to see" is put down as semantically deviant without considering what things lead to visibility...  
(1968a, p. 35)

The idea of "context" is important here: context in the range of senses suggested in Chapter One. Situational, verbal, and cultural context all contribute to making a sentence acceptable as English. And literary imagination is, among other things, the power to conceive the potential use of a sentence in possible contexts. That linguists do not always exercise this power is evident; and, as Bolinger puts it, "parsimony with context leads to error". The attitude that leads to these errors is, moreover, not accidental (cf. Lyons (1968), p. 420); it is rooted in the assumption (noted above, p. 78) that sentences are "units" (from which a "language" is constructed) that are capable of being studied in isolation from not only the larger verbal context, but

also the situations in which they are likely to occur as utterances. That this assumption does lead to a situation in which errors can be made is crucial. In short, if sentences can only be wholly understood by reference to actual or possible contexts, in what sense can the "units" the linguist studies comprise language? (I will return to this point when mentioning Katz's semantics.) Or, to return to the chess analogy, chess may, after legitimate abstraction, be identified with the rules that govern the moves, for in isolation each move is clearly defined. Granting for the sake of argument the legitimacy of the linguistic "competence" abstraction, can one still talk of identifying this competence with a system of rules, if, as appears to be the case, the units, on which the construction of the system is based, are not clearly defined in isolation?

Nor do I think it possible, given obvious differences in literary imagination and experience, linguistic and otherwise, that a band of "ideal" linguists could take into account considerations of context, and arrive at some unanimity regarding which sentences do belong in English. For could this happen, the idea of a clearly-defined grammatical intuition would be reasonable, and the archetype plausible. Yet, were it possible, this would entail accepting a large number of hitherto excluded forms. For instance, the forms embodied in "silently swim stars, bright, serene" and "Adam walked to the door and Adam trembled in his shoes" would have to

be accounted for. Katz (1972) invokes the idea of "stylistic variation" (which seems intuitively acceptable), and suggests adding a fourth component to the grammar, the "rhetorical component" (pp. 417 ff.). Apart from the feeling that the grammar is being over-complicated, there are reasons for suspecting this theoretical distinction. Transformational rules (such as passivization) which transform semantically interpreted base strings into surface structures, are traditionally understood as being semantically neutral, or meaning-preserving. But Katz introduces the idea of the component simply because he wishes to account for the fact that speakers, when faced with the choice of two in some way synonymous sentences, choose one, for the sake of a certain "effect" or "emphasis", rather than the other. Which means that, in his own terms, the "rhetorical transformations" too are meaning-preserving. The sharp distinction between the syntactic and rhetorical transformations (and components, and, therefore, "grammatical" and "stylistic variant") appears to fall away - which seems good sense. For one chooses, for example, the active or passive (without suggesting that one is "derived" from the other) mostly for the sake of "effect" or "emphasis" <sup>12</sup>.

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<sup>12</sup> The difficulties Katz experiences stem from the problems inherent in attempting a definition of "style". Moreover, his "component" is unable to clarify the distinction between what is style and what is not any further, because it is derived solely from a particular way of making the distinction. It can only do as much as the prior definition allows it.

If one ignores as artificial this distinction Katz introduces, and combines the components, it would appear that he has taken Chomskyan linguistics a significant step towards that ideal state mentioned above - in which all sentences acceptable as English would be accounted for by the system of rules. But there is an obvious obstacle to any formal statement of this "extended" grammar - complexity. Even in the present "limited" grammar, with the "gaps" in its description<sup>13</sup>, the syntactic component (not to mention the other two - three), when stated with formal accuracy, is enormously complex (as a glance at the literature will show). Progress towards complete inclusiveness can only mean a corresponding increase in complexity - and there is the danger that, under the burden of continued qualification, systematization would become either impossible or irrelevant<sup>14</sup>. But this is not the goal Chomsky has set

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<sup>13</sup> For the syntactic component alone, descriptive adequacy is far from achieved, even when only rather ordinary and obviously grammatical sentences are dealt with. See, for example, Jacobs and Rosenbaum (1968).

<sup>14</sup> Chomsky's retort to complaints about the present state of complexity is: can one expect a faculty of mind to be any less complex than, say, a little finger? See Chomsky (1975), pp. 43 and 92. But to give an idea of the sort of crippling complexity that may be required, I refer to the work of M. Gross (cited in Lightner (1976), p. 189 fn.). Working with a corpus of obviously grammatical simple sentences only, he studied a sample of 3000 French verbs in terms of a hundred syntactic properties - of which no two verbs were found to share the same set. There are, he found, 2000 different verb-classes for the 3000 verbs. And as generative rules operate on word-classes, there are going to have to be sufficient rules to reflect the behavioural properties of each class. One has to seek assurance from the grammarians that their complete grammar will not be forced to contain one rule per one word and a half.

linguistics. For as has been pointed out (p. 86 ,above), he maintains the distinction between grammatical and acceptable. And this raises the initial question of whether "grammatical" is clearly-defined, whether it can adequately (for the purposes of a formalized science) be "factorized out" from "acceptable".

Reasons for being sceptical about a positive answer have been indicated. Contexts, in their contributing to the acceptability of sentences, cannot be ignored - contexts that are ill-defined, not capable of being described with mathematical exactitude, and which certainly contribute to the irregularity of intuitions of what is to be considered as belonging to a language. Given this irregularity and unpredictability it seems impossible that the "acceptable" sentences in a language could ever be systematized. But more important, there do not seem to be any non-arbitrary criteria for distinguishing sentences grammatical from acceptable - and intuitions are no guide, as these are again not clear. But leaving problems associated with context aside, there is a related question - how are exceptions to be treated? - that appears to undermine from within the attempt to represent a language as a formal system.

I quote a revealing statement of Chomsky's:

If someone says of my description that this doesn't fit, and this, and this, I would say that it is not a very interesting comment. If on the other hand, he says that the exceptions can fit into a different pattern without sacrificing a corresponding degree

of coverage elsewhere in the system, that is of the highest importance.

(Quoted in Derwing (1973), p. 39; for a similar statement, see Chomsky (1964), pp. 54-55)

The idea here is that the discovery of an exception is to be the spur to finding a different and more complete pattern. The goal appears to be the formulation of one that is totally comprehensive in its embracing all the syntactic facts of a language. Even if the influence of contexts is ignored, given what is known of the development of languages, a development to a certain extent haphazard and influenced by "extra-linguistic" factors (suggesting that a language at any one stage of its existence is not homogeneous or autonomous), this goal appears unlikely. And Chomsky may never have meant it. For in Chomsky (1964), he does admit it most likely that there will always be exceptions to a grammar (any grammar). But this admission exposes a further weakness that has an important bearing on the notion of evidence so important to linguistics as a formalized science.

He writes: "It is necessary to distinguish between exceptions to a grammar, and counter-examples to a proposed general theory of linguistic structure" (1964, p. 54). The "theory of linguistic structure" is, presumably, the "universal grammar"<sup>15</sup>, to which I will

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<sup>15</sup> Chomsky uses the term "theory" in a number of ways that may at first be confusing. The theory of a language is its generative grammar; the theory of lan-  
guage is universal grammar; the theory that proposes those two theories is ...? I have called it above Chomsky's "metatheory", though he nowhere uses that term. Perhaps "linguistic theory" would be adequate, though not all linguistic theory is, of course, Chomskyan.

be returning below. But what needs also to be mentioned, is that any exception to a grammar is, if the ideas of "evidence" and "prediction" (see above, pp. 81-82) are borne in mind, a counter-example to the grammar. If exceptions are to be countenanced (as, no doubt, they ought), then some precise statement of the distinction between exceptions and such counter-examples (at the level of grammar) must be made. In other words, at what point is the linguist to stop searching for further patterns? It is difficult to conceive of any line of demarcation that is not arbitrary - which indicates a crucial flaw in the crucial notion of "evidence". And, if this is the case, then the same point may be made about the dependent distinctions between "grammatical" and "acceptable", "grammatical" and "stylistic variant", and "grammatical" and "semi-grammatical".

To conclude, the root of the problem appears to lie in the metaphor; for Chomsky, by attempting to fit language into the mould of a formal system, is attempting to characterize precisely notions that cannot be so characterized. Or, in other words, formalization makes the notions traditionally used in talking about language sharper than they are in fact. This recalls the main point suggested by the chess-analogy, a point which Itkonen (1976) has detailed explicitly. As was mentioned above, there are two senses in which "grammatical" is to be understood in formal grammar. The following sentence may be used to illustrate the difference: A formal

grammar is to generate as "grammatical<sub>1</sub>" those sentences the native-speaker intuitively accepts as "grammatical<sub>2</sub>". As Itkonen points out, the analogy here is with formal logic. A system of formal logic (on the mathematical model) is constructed to formalize intuitions of logical validity. But, again as Itkonen points out, the analogy does not hold. First, there is a difference in purpose. In formal logic, "it is precisely the purpose of axiomatization to transcend the inevitable limits of intuition: axiomatization offers a way to extend the intuitively known rules to cases where intuition as such is powerless" (p. 193). But there is no sense in which one could say that formal grammars are constructed to extend our intuitions of what is grammatical. The monsters of language that Chomsky occasionally produces and (correctly) claims are "grammatical<sub>1</sub>" are a case in point. In fact, if one wishes to extend one's intuitions of what can be said in a language, one turns to its good creative writers (the stylists: which suggests a useful way of conceiving style - as the escape from, and so development of, the grammatical). But, second, and more important, the notions each attempts to account for are of a different order of precision. In logic, whether or not a formula is a theorem of a system can be decided in two ways. First, it may be checked to see whether it is derivable within the system; and second, and independently, its validity may be calculated by methods independent of the system, yet based on the same

rules of thought the system is intending to formalize. In other words, there are both formal and informal methods (truth-tables, truth-trees, for example) of checking the validity of a formula. What both have in common is a basis in a few self-evident rules of thought. There is no analogous situation in linguistics. A sentence may be shown to be generable in a particular formal grammar; but there is no analogous informal (independent) method of checking whether the sentence generated corresponds to a correct sentence in the natural language (cf. pp. 199-200). All that can be relied on to do the checking is grammatical intuition, and this is imprecise and non-uniform in the speakers of a language. And the reason appears obvious: there is no small set of exact and pre-existent rules (as there is in, say, chess or constructed systems of logic) that governs the production of sentences in a natural language. A third point at which the analogy does not hold (one which Itkonen does not mention) is that formal logic may proceed efficiently because there is no harm in thinking of propositions, predicates and other properties of logical form, as units. And the fact that sentences cannot be so thought of has long been recognized by logicians. It was this "haziness" of language (which is, in some of its uses, its strength) that led them to construct their (for their purposes) more accurate

artificial languages<sup>16</sup>. Logicians are correct when they claim that sentences may often conceal or distort an underlying, unitary logical form. But it is hard to know what anyone would mean if he claimed that sentences concealed their underlying, unitary sentence form (which is what Chomsky by way of the competence/performance distinction in effect does).

What has been said till now in criticism of the attempt to fit language into the mould of a formal system, may be related to questions of descriptive adequacy<sup>17</sup>. And while the crucial notion of evidence has been shown to appear flawed, it is in dealing with problems encountered in the attempt to establish explanatory adequacy, to establish the psychological reality of the system in the form of language, that the plausibility of Chomskyan linguistics as science is most debatable. So I turn now to deal briefly with two points related to "explanatory adequacy". There are, of course, more that could be glanced at. On the other hand, it could reasonably be argued that discussion of

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<sup>16</sup> See, for example, Langer (1937), pp. 52, 61. Quine (1953) has an excellent account of the "dilution" of natural language that the formulation of a system of formal logic entails, a "dilution" that allows precision and control. See especially, pp. 438, 443-445.

<sup>17</sup> What has not been talked of is the semantic component, which, while peripheral to the argument of this section, would not be irrelevant to an account of language in literature. Appendix A provides a brief survey of some problems that are encountered in the attempt to establish this component.

Chomsky's ideas on "explanatory adequacy" is premature if the objections to his conception of "descriptive adequacy" are not satisfactorily answered. For as has been seen, all his further thinking is based on the idea that language is capable of being represented as a generative grammar. Chomsky, however, would not agree. He writes, "although even descriptive adequacy on a large scale is by no means easy to approach, it is crucial for the productive development of linguistic theory that much higher goals than this be pursued" (1965, p. 24). Again I emphasize that this seems highly questionable - if the pursuit is in the form Chomsky has decided on. To illustrate how the "generative grammar" assumption influences his further thinking, his ideas on language-acquisition, which, as has been pointed out, are intended to provide confirmatory support of universal grammar, can be glanced at. (For a full discussion, see Derwing (1973); for further valuable remarks, see Cohen (1966, pp. 47-56), Putnam (1967) and Margolis (1973).)

Chomsky (1975, p. 22) writes of humans that they "construct a complex and intricate intellectual system, rapidly and uniformly, on the basis of degenerate evidence". What first attracts attention is his use of the word "degenerate". Admittedly, the utterances one is in contact with are often not impeccable, and never in any sense "clearly-defined"; a moment's observation would confirm this. But what if they are not much like the sentences produced by a generative grammar? Is this

sufficient reason to call them degenerate? The word only makes sense if one believes that "competence" is a generative grammar. If this belief is disposed of, one is left, as Chomsky recognizes and rejects (see, for example, (1972), p. 118 and (1975), p. 142), with discussing language-learning in terms, for example, of mimicry, gestalt-perception, creative analogy and generalization - ideas which take into account (and accept) the imprecision of the data. But Chomsky would be unwilling to discard generative grammars <sup>18</sup>, and hence the "competence" intended to supply his grammars with psychological reality. So he posits a "universal grammar" - "the system of principles, conditions, rules that are elements or properties of all human languages not merely by accident but by necessity - of course, I mean biological, not logical, necessity" (1975, p. 29). To make the idea plausible, he talks of the "uniformity" and "rapidity" of language-learning. But until the actual conditions and features of language-learning are accurately known, and other alternatives, however slight their success may be at present, are known to be

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<sup>18</sup> I have not touched on the reason why Chomsky believes generative grammars necessary; this may be suggested by his calculation "that the number of word class sequences associated with [normal sentences] is far larger than the number of seconds in a lifetime" (1964, p. 54 fn.). I see no reason, though, why discussion in terms of the manipulation of forms, of analogy and blending, (see Hockett (1968), pp. 88-99, for example), could not account for this. Far more compelling evidence is needed before one is to be persuaded that generative grammars (with their already-noted attendant problems) are necessary to account for the shape of actual sentences.

inadequate, there is no reason to accept the "universal grammar" (with the idea of the generative grammar on which it rests) proposal. For the claims of "uniformity" and "rapidity" have, till then, rhetorical value only. And the same may be said of the similarly supportive assertion, "Language is not really taught, for the most part. Rather, it is learned, by mere exposure to the data" (1975, p. 161). In (tentative) evaluation, the problem may be at root that Chomsky is attempting to deal with one stroke questions that could perhaps be more usefully kept distinct: how a child comes to learn its language (and then, why); the nature of the linguistic ability that is finally acquired; and grammar, the idealized guide to the forms and patterns in use in a particular language.

As the remarks above suggest, the assumption that language is best represented as a generative grammar leads, in the search for explanatory adequacy, to further assumptions, apparently as empirically unjustified, about language, and specifically, its acquisition. Of course, this in itself would be admissible were a measure of real support to be found for the idea of an innate "universal grammar". There is an obvious test, as Chomsky has admitted (1975, p. 208). If "universal grammar" specifies the necessary form of language, then the sentences produced by a grammar that violated that form would be impossible to learn. But, linguistics here (as Chomsky further admits) founders on the moral difficulty faced by

most "human sciences" - that the subjects of any experiments are human. To subject any child to the "experiment" noted above would be morally reprehensible. While this sort of "direct" evidence may be difficult to obtain, Cohen (1966) has suggested a further requirement that a "universal grammar" hypothesis would have to meet; one that would appear to escape the moral problems of experimentation. This is that the hypothesis have "consequences that are testable independently of the language-learning facts it purports to explain" (p. 52). This requirement seems reasonable<sup>19</sup>. Thus one would have no reason to accept an outrageous claim that the water that is gulped, slurped, splashed, that sparkles, quenches and floods was a thin bundle (ninety-nine per cent space) of microscopic molecules, unless it could be shown that there were consequences of this hypothesis outside the "theory of water"; that closely related hypotheses could be used to explain similar phenomena in similar substances. There do not as yet appear to have been any important discoveries in this regard in linguistics, discoveries that would confirm the psychological fact of a "universal grammar".

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<sup>19</sup> Chomsky's reply (1975, p. 207) I find unsatisfactory; it appears to miss the point of Cohen's argument. The fact that "SDP" was not violated in any known language, would tell us (perhaps) about the form of the languages studied, but nothing about innateness; hence nothing about "universal grammar" as he conceives it.

Thus given the problems associated with the notion of "evidence" at both the level of "descriptive adequacy" (problems following from difficulties with the idea of "grammaticality"; see above pp.103ff.) and that of "explanatory adequacy", one may, I believe, rightly question the viability of Chomskyan linguistics as a science.

In other words, how much of Chomskyan linguistics is "knowledge about some aspect of the real world", and how much "supposition and speculation?" (cf. Derwing (1973), p. 3; it is at this point that one feels the lack in the available literature of a careful comparison of scientific reasoning as expressed in linguistics and in the natural sciences, and thus also a study in the differing uses of terms such as "evidence", "confirmation", "empirical", "theory", etc.. Nevertheless I do believe sufficient problems with "evidence" have been exposed to provide reason to doubt the efficacy of the remaining terminology, and thus Chomsky's linguistics as a science. Chomsky has conceded that "it is unfortunately the case that no adequate formalizable techniques are known for obtaining reliable information concerning the facts of linguistic structure" (1965, p. 19). Yet this, as we have seen, has not in any way deterred Chomsky, or his associates; nor does it seem important to him on the question of whether linguistics is a science). His answer (which Searle (1975) echoes) is that the question is "essentially terminological ...

[having] ... no bearing at all on any serious issue" (1965, p. 20). Regardless of the force with which this is stated, there are, I think, sufficient grounds for disagreement. The most important derives from the special status bestowed, by present culture at least, on scientific knowledge. The natural sciences have, successfully, developed techniques that allow for the claim that they have "discovered facts" about the natural world in which we discover ourselves, techniques which can be reasoned as countering scepticism about the claim. And this knowledge is characterized by its being more confirmable than debatable. Of course, at the level of selection and modification of interpretations true to phenomena, debate plays an essential part. There is nothing mechanical about scientific creation. But it is the criterion of a good theoretical concept that it is provided, via the notion of "evidence" (where what is to count as such is agreed on), clear indication of how it may be confirmed<sup>20</sup>. To use the designation "science"

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<sup>20</sup> Derwing's point is relevant here. "What is more, given the proliferation of uninterpreted theoretical apparatus associated with any generative grammar, it is clear that a great deal of manipulation of the model need not affect the output appreciably ..." (1973, p. 287). One may cite the continuing disputes among transformationalists as to the best internal organization of the grammars, and the claims that differing proposals are merely notational variants" - which is usually denied by the proposer. We here touch on problems that talk of "explanatory adequacy" was meant to solve, but it seems instead that matters of internal organization are decided on the grounds simply of what makes sense to the investigator; that is, that reasons are adduced from reflection on language rather than from empirical

in any area of enquiry is to imply the adequacy of science's terminological apparatus (evidence, etc.) to deal with the phenomena in question. And so is to imply the special status of knowledge so acquired - that it is knowledge of confirmable facts, and not knowledge (metaphysical) which is the product of an insightful interpretation of experience or of dialectic, and nor is it knowledge (wisdom) which is the product of accumulated practice and reflection on the experience it has provided, or any other kind of knowledge one might care to distinguish. Without wishing to evaluate these various kinds, one may insist on the necessity of maintaining distinctions that have been found culturally valuable.

Thus, in reply to whether it matters what label is given a discipline, so long as it "delivers the intellectual goods" (cf. Searle (1975)), one is entitled to insist that it does. If there are problems in applying the defining terminology of science to an aspect of experience under inquiry, then one is entitled to question the status of the knowledge provided. And apart from a concern for "honest advertising", there is a deeper reason. If the knowledge provided is not of the confirmable scientific type, then one may ask the

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investigation. One wonders whether once the scientific style of presentation is removed, there is much difference between Chomskyan linguistics and, say, St. Thomas Aquinas' theory of cognition, which involves a similarly ingenious and elaborate complex of concepts to account for what is after all an "empirical" fact that people "know", "hold in memory", "make mistakes", etc..

point of any accompanying scientific paraphernalia. If it is the task of language-study to provide insight into language (rather than objectively verifiable knowledge - cf. Chomsky (1965), p. 20; though careful empirical work in the form of case-studies does have its place in the fields of language-acquisition, language-disorders, etc.), then surely a neatly-turned aphorism, a telling metaphor, may serve as well, if not better. In thinking of language, it seems that it is this sort of thought, whether it be carefully reasoned or brilliantly insightful, that is fundamental <sup>21</sup>. One appeals persuasively to reflected experience, not to a body of available facts, when drawing theoretical distinctions. Even the "facts" that underly grammatical classification are argued for, and not defined according to characteristics under observation. There seems little reason to believe that the "intersubjective space" that language occupies is susceptible to analysis in terms of the sort of algebraic "language" that forms the backbone of reasoning in the sciences.

Finally, if it is doubted that Chomsky's grammars tell us anything significant about the natural world

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<sup>21</sup> Pettit (1975) makes a similar point when he remarks "that the framework of concepts underlying [sic] the linguist's empirical or scientific analysis is the product of philosophical argument ... [which] is not the appeal, typical of science, to what the facts are like" (p. 3). Though Pettit does, as this statement indicates, accept the scientific validity of Chomsky's work.

(anything more than a sort of freewheeling speculation could), then it might be asked what function, as "intellectual goods", the grammars it supports serve. For they certainly are not pedagogically useful: there is little point to presenting a language-learner with "laws" and techniques of an abstraction that would be kept from those beginning to learn physics. Their extraordinary complexity, too, counts against them, a complexity that is to be expected to follow from an ideal of total explicitness. And on this ideal, it is perhaps worth pointing out that, as mentioned above (p. 64), formalization for its own sake is of no interest or value in mathematics. So unless some task other than merely "making explicit the native-speaker's intuitions" is made convincing, the need for formalized grammars is certainly debatable <sup>22</sup>.

I have discussed Chomsky's thought at length because it seems to represent the most advanced attempt to reveal an actual structure in language, to place Saussure's "system" uniquely in the natural world. The

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<sup>22</sup> For reasons I have not space to go into, I do not believe the ideas of "deep structure" or "transformation" to be of much value to pedagogical grammars, even if they are imported without their formalized notation. Formalized grammars are, of course, necessary tools for research into machine-translation and data-retrieval systems, research which does not, though, concern itself with the more ambitious task of devising a "theory of language" or achieving empirically accurate description of a language.

desire to escape the charge of arbitrariness, the desire for completeness in the description of the believed uniformity of language, together with the conceptual tools to make the desires seem feasible, make him the most interesting of the structural linguists. With Chomsky, it seems, Saussure's ideal of a "science of langue" could be realized - modified certainly, but not altered essentially. That there are grounds to suspect the possibility of success is of interest. It suggests that perhaps all that is possible in linguistics is the accurate but relatively informal presentation of regularities perceived in each of the many aspects the phenomenon of language reveals <sup>23</sup>; and that the search for an over-arching system of language, able to be described in the way the archetype demands, in unitary terms, explicitly and completely, is unrealistic. This is not to deny the value of Saussure's insights - or the value of much of the work of subsequent linguists. "System", as outlined roughly above (pp. 70-75), has proved, in many ways, a fruitful idea, and, with its associated notions, has helped sharpen intuitions about language. But adopted rigidly, or as refined in mathematics, it does not appear to be, if the criticisms of Chomsky's work are kept in mind, an altogether appropriate import into the field of language-study. The

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<sup>23</sup> This tentativeness can be found reflected in the work of two prominent linguists; see, for example, Hockett (1968) and Bolinger (1968).

description of language in its terms does not fit well with our intuitive understanding of how language works - which would not matter were it possible to ground the idea of language as a formal system in fact, but this, as has been suggested, does not appear to be the case.

Of course, it is possible that, in time, a more or less adequate formalized description of the syntax and semantics of language will be achieved and agreed on. The objections that have been raised are not, as I have said, conclusive; and the current research programme appears to be extensively and vigorously participated in. Yet, even if the modest goal of description, approximate but true at a significant number of points, is arrived at, this will not mean that all aspects of language as it is used will be accounted for. The following paragraphs point briefly (as Chapters One and Four deal with them more fully) to aspects, of particular interest to the study of literature, that formal grammars could say nothing about - or deliberately would not.

Firstly, language would be viewed as "static" - in the sense suggested in Chapter One above. That is, its history would be viewed as successive transformations of synchronic states (presuming that these last may be successfully delimited - cf. Bohnert (1969), p. 268, and Hockett (1968), pp. 83-85), and its syntactic rules and its meanings would, for each syntactic state, be clearly-defined. But, as was pointed out earlier (Chapter One above), words in use, especially in creative use, are

involved in a complex interplay with the words that form their context. The meaning a word, ~~by virtue of~~ of its place in a semantic component's "dictionary", may well be clearly-defined on entering a context, but it is unlikely that it will remain that way. A comparison will illustrate this point. In formalized discourse, as mentioned above (Chapter Two), a word is assigned an unambiguous meaning at the outset of the discourse. It is this meaning that it carries with it to contexts outside its context of definition. But as the words it contracts new relations with are themselves clearly defined, and as those relations are understood in terms of a given logic, the word, no matter how far its use is extended within the discourse, will remain clearly defined. This is obviously not the case in non-formalized contexts. When a word enters into relations with the words in its contexts, it does not do so according to the rules of a formal logic. And, as, no matter how clearly defined the initial meaning of each word is believed to be, there is no way of charting precisely its relations with its neighbours, there can be no way of determining the influence they would have on its meaning. All that could be relied on would be what has to be relied on anyway when words are recognized as being naturally imprecise of meaning - a developed intuition, a sensitivity for the potential that senses

have for interaction <sup>24</sup>.

Related is the fact that no indication could be provided by a grammar of the "weighting" a word would have on its use in a particular context. Each meaning, on arrival into the context, would have, as in formal discourse, an equal status. There would be no guide as to which words were a merely supportive background, and which were to dominate and provide the focus of interest in the discourse. For this again, intuition (of which the analyses in Empson (1951), for example, provide excellent evidence) would have to be relied on, an intuition fed by the memory of actual daily discourse, of the ways, for example, rhythm is used in emphasis, but, more important, of a literary tradition that provides a store of themes, of central attitudes and evaluations of experience. Such a grammar would, too, have nothing to say about rhythm on a larger scale. For sentences, like individual words, are not given equal "weight", or serve the same function, in discourse. There could be no guide to the way sentences are used in the expansion, modification and conclusion of a topic; nor to the effects of juxtaposition and similar devices. Simply, it would not have anything informative to say about the rhetorical forces at work in a passage.

Perhaps more important than its inability to

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<sup>24</sup> Chapters One and Four do, I hope, provide some sense of what I mean here.

illuminate the creative interplay of unit and context, is the inadequacy of any idea of language as a formal system to deal with language as a specifically cultural phenomenon. Perhaps the best way of approach to this aspect of language is by pointing out that a language is lived, that it is inextricably a part of the experience it organizes. Learning a first language (and to a lesser extent, subsequent languages) is equivalent to entering a culture, learning the discriminations and evaluations it makes, the attitudes it maintains, and, among all these, the choices it offers - and none of these terms belongs in the vocabulary of "formal systems".

This feature of language can usefully (for present purposes) be regarded from two points of view. First, from that of the language-user, a language may be a cultural inheritance, but it is only breathed life into by an individual's spiritual existence, by his participation, enforced by life, in the distinctions bequeathed by previous generations. Language (working in collaboration with immediate experience and memory) is thus the shaper of "the content of consciousness" (Jørgensen, 1962). And it is also the field of its activity in its personal, and other, encounters, and, of course, the prime means of its expression. It is this relation of the physical manifestation of language with the individual's "content of consciousness" ("e.g. a feeling, a need, a perceptual content, a thought, an attitude, etc." -

Jørgensen, 1962, p. 29) which indicates that one is dealing with language as patterns of symbols rather than a system of signs <sup>25</sup>. Symbols are, as Mrs. Langer has neatly phrased it, "repositories of experience" (1942, p. 288), more or less replete with the traces of both "sensuous and emotional" experience (p. 283) - an experience of both object or event and the response or attitude towards it. Learning to understand these symbols, living through them, selecting from the conflicting evaluations they may offer, is to situate oneself within a culture, to take a stance against the "background of closely woven multiple meanings against which all conscious experiences and interpretations are measured" (p. 285). From this point of view (one undoubtedly relevant to the study of literature, to the study of an art-form devoted to the verbal organization of experience and therefore indexical of personal evaluations and cultural expression), language is, rather than a system of signs (abstract entities outlining the form of language in its material and psychological aspects), more accurately understood as the crucial means, to be explored with delicacy, of personal orientation in life which, for humanity, cannot be correctly conceived of but as characteristically culture-created.

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<sup>25</sup> Barthes, interestingly, admits this distinction and the limitation that the current emphasis on signs implies. See Barthes (1964), p. 207.

Second, there is the view-point of the analyst of cultural history - or the history of literature. Language, from this view, rather than an object of clear formal definition, is a densely patterned tapestry of symbols, each a vaguely-defined gestalt of meaning capturing all the elements of the related experience. These symbols are, of course, not private (though they may have private elements) - or communication would not take place. Charting the relations between these symbols, entering into the experience they give form to, is to discover the intellectual and moral life of a culture. And as received ideas, received attitudes are continually transformed under the pressure both of changing circumstance and the creative mind's perception of as-yet-unseen connections in experience, these changes are recorded in the language. Language thus provides an index of this change, and the means to its study. The same may be seen in the language of a creative writer - his transformation of the interpretations and evaluations derived again from the differing features of his historical circumstance and his particular genius. And as these "languages" with their implicit interpretations, assessments, and attitudes confront the reader as possible languages with which to organize his own experience, the differences in them, the different circumstances from which they grew (and which in turn they helped to mould), and the quality of mind they signify, all make this aspect of language an important aspect

worthy of the closest attention. And again it is one that a grammar, whether formal or not, or any view of language through the filtering idea of "system", is not designed to deal with.

Of course, this aspect of language as a cultural phenomenon can be viewed in terms of context - cultural context, in the sense suggested in Chapter One. Language-learner and cultural analyst alike are concerned with the cultural meanings of words, and, in the quest for understanding, it is the experiential backgrounds giving words their meaning that needs to be searched through. And as this background is certainly not discovered "raw", but is rather experience as filtered through the discriminations created in a culture, understanding of language is effected in the exploration of the discriminations the language embodies. (The essay cited above, p. 96 - Black (1962, pp. 95-139), is an excellent example, on a seemingly unfruitful topic, of the sort of sensitive exploration understood here, illustrating the dependence of analysis on considerations of related words and the events and institutions that give this portion of language life.) On this view, then, it is the "tapestry of symbols" (with, as has been pointed out, dimensions not only obviously "linguistic", but experiential as well) which provides the contexts for understanding - which is reasonable, as poetry is not understood without reference to life, and a branch of the sciences is only understood thoroughly when the

language is supplemented by work in the laboratory (or its equivalent).

This leads to a point that may be made in conclusion to this chapter, before the effect of the use of the analogy in the study of literature is described. While the obviously physical manifestations of language may be understood as organized as a system, and so represented formally, it seems impossible that meaning, dependent on fluid, indeterminate contexts of experience (an indeterminacy heightened by the fact that language lives in different experiencers) can be organized in the same way. And having seen the extent to which syntactic acceptability is conditioned by context, the same may also be said, with the above criticisms of Chomsky's attempt in mind, of syntax. This point can, of course, be related to the criticism made of Chomsky's attempt to construct his over-arching system representative of language, and the charge that the commitment to the idea of system also makes language seem more precise and clearly defined than it in fact is. As is to be expected, and as the next chapter will demonstrate, both of these problems recur with the Structuralist use of system in literary studies; along with the fact that accent on system ignores the important aspect of language as a confrontation with the intelligence, a confrontation that demands interpretation and, perhaps more important, evaluation.

## CHAPTER FOUR

### SYSTEM AND STRUCTURE IN LITERARY STUDIES

When Roland Barthes writes: "I think that the name of structuralism should today be reserved for a methodological movement which specifically avows its direct link with linguistics. This would be to my mind the most precise criterion of definition" (quoted and translated in Culler (1975), p. 255), Culler rightly comments: "The definition is apt, but ... is scarcely precise. The approaches which it might include are extremely varied, both in their conception of criticism and in their use of linguistics". It must be conceded however that Barthes is perfectly aware of individual variations - and that the definition (or criterion of definition) that he provides is perhaps as precise as can be made under the circumstances. Whichever way one decides however, it will be agreed on that Structuralist writing on literature (as on other subjects) is far from homogeneous; nevertheless, that amid the somewhat bewildering variations, certain features in common can be detected - if not with perfect clarity. What follows is not concerned with examining these variations; this has been done (in English) in a number of recent studies (Culler (1975), Pettit (1975) and Scholes (1974) are comprehensive). The point is rather to state what I believe to be the most important "common factor" in Structuralist writing and then to suggest grounds for believing that any study of

literature that is centred on it is either inadequate or mistakenly limits the nature of its subject.

As was suggested at the beginning of this essay, in turning to linguistics for guidance or inspiration from its methods or its concepts, the idea that is invariably absorbed in some form or other is linguistics' prime assumption that language is a system. As has been pointed out, this is Saussure's legacy: that the essence of language is a system, autonomous and underlying the multiform phenomenon, constituted by interdependent units, where each relation between them is differential and each difference is functional. It is here at this high level of generality, that the most important link with linguistics is made. For, put very briefly, the Structuralist endeavour is the analysis of literature according to this predication of language. In other words, the use of "system" is extended from its "literal" domain in linguistics to the domain of literary studies in the belief that it will prove useful and illuminating, or more strongly, that it will reveal, as it is supposed to do in the case of language, the essence of its subject.

But to invoke linguistics and talk of an ~~underlying~~ "underlying system" is to raise at least two important questions; for the relation between langue (or competence) and literature is not immediately obvious. Is linguistics to provide a scientific model (in the sense described in Chapter One above) for literary studies? And second,

what aspect of literature reveals the "system"? In answer to the first, it must be pointed out that Structuralism has not yet adequately (as the chapter on Chomsky is intended to indicate) established linguistics as a science. Chomsky does appear to represent the most advanced thinker involved in the attempt to "discover" the system of language; and there remains reasonable doubt as to his success. Even were he eventually to succeed, it would be at the price of an abstraction that deliberately ignores (or, perhaps, in some cases, "leaves till later" ... but when? if, as now, the first step is not successfully taken) the mental processes involved in interpreting and creating language in actual situations, and the life of language in a community of active and reflective individuals. Thus, even in the original domain the idea of "system" is not totally convincing. The matter is further complicated by the fact that the concepts and techniques of analysis used in linguistics in the attempt to establish the "system" stand even less chance of successful application in literary studies. There is no "discovery procedure" (of any kind) that will lead investigators to the same revealed essence of literature, or of a group of works, or of a particular work (cf. Culler (1975), pp. 20-24, 53, 57, 94-95). Nor

is there (pace Culler <sup>1</sup>) a "competence" to be investigated

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<sup>1</sup> Culler (1975) suggests the usefulness of the idea of literary competence. The analogy is with Chomsky's "linguistic competence", but, as Culler admits, is inexact (p. 114). One is not dealing with competence in the technical sense of an abstract system of formal rules; there seems little point to talking of "construct[ing] a model to account for ... the facts of interpretation in reading" (p. 128). But though Culler's emphasis ("Reading is not an innocent activity", p. 129) is important, little seems lost if "reading strategies", for example, is substituted for "competence" - which suggests that the credibility of his ideas is afforded by the non-technical sense of the word, gaining little by association with Chomsky's. The same might be said of Culler's use of "explicitness". Explicitness is, no doubt, a professional virtue - in the sense of carefully making one's meaning clear, bringing connections to the surface and employing a measure of self-awareness (though perceptive and creative thought may be equally successful in aphoristic form). This is a sense which Culler continually employs. But he also invokes "explicitness" as understood in the context of formalized scientific discourse, of formal systems; and this is unconvincing and unnecessary, as he does not show himself concerned with attempting to develop the idea of a system of explicitly stated rules constituting literary competence. This invocation of linguistics is, however, not altogether harmless. No doubt as a result of the analogy, he posits a distinct literary competence, an idea that suffers from the same faults as Chomsky's original. Is there a distinct literary competence apart from the general modes of interpretation? When he writes, "The identification of sunset and death is further justified by the convention which allows one to inscribe the poem in a poetic tradition" (p. 115), he is surely wrong. Meaning-shifts, metaphors, "mythic correspondences" (such as the one he is pointing to), all such phenomena poetry makes use of are used and understood outside of poetry - though in poetry they are of course in relief. The relation between literary and non-literary language (and experience) is no doubt of interest (and importance, if the value of literature is to be affirmed), but to postulate a specifically literary competence, without first clarifying the complexity of this relation, is to invite oversimplification. Similarly, resort to an abstract competence in understanding reading processes turns attention from the role played by ideology and its implicit values. Why is it not "acceptable" to comment on the lines Empson has quoted: "Swiftly the years beyond recall. / Solemn the stillness of this spring morning." by beginning, "I see a river, willow trees

analogous to the object of Chomsky's study. Without going any further into this question, it would seem that linguistics provides (most reasonably and most often in fact) an archetypal analogy rather than a model - as, in the past, biology had already done.

However, whether one attempts a "pure" Structuralist study, rigidly applying the concepts and techniques of the linguistic model, or whether one uses, with greater or less emphasis, ideas drawn from linguistics as a means of creating a perspective, there (still) nevertheless remains the choice of what in literature involves the underlying system. Put briefly, three choices seem to be open. All literature may become the object of study - as can be noticed in the work of Todorov, Barthes (in one of his phases), and Culler. For example, Todorov writes: "Literature itself has to become the subject of an autonomous scientific study", where "scientific" indicates the use of a "coherent body of concepts and methods aiming at the knowledge of underlying laws". Another alternative is to seek system in a grouping of works - according to criteria of classification such as authorship, either personal, or, as in the case

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trailing their branches through the rippling water, a man stands, head bowed, etc." - a style of explanatory fantasy that school-children, for example, are prone to. It seems that in "analysis", "objectivity", "moral stance", etc., we are dealing with a cultural imperative that discussion of literary competence on the Chomskyan analogy does little to illuminate. Different styles of reading are entangled with different cultural values, and any account of reading processes would have to take this into account.

of Goldman, "societal", and genre. Barthes' and Goldman's studies of Racine, Todorov's study of Henry James' short stories, and the Structuralist studies of narrative fall into this category. Finally, there remains the option of searching for system in particular works. Greimas' research into methods of discovering the semantic coherence of a text and Jakobson's grammatical analyses fall into this last category. But to enter into a discussion of these variations in exploiting the Structuralist idea of the relevance of linguistics is, as has been noted, not of concern here. If it is the case, as is suggested, that the link between linguistics and literary studies is most commonly the appropriation of the idea of "system", then it matters little how the idea functions in an analysis, or to which facet of literature it is applied. What is important is the body of associations the notion "system" brings to the understanding and analysis of literature, and their adequacy in the face of an undeniable complexity in the phenomenon. Thus it is of little importance what emphasis a particular writer gives the notion - the implications will always be there, only more or less prominent. Similarly, whether a writer chooses to think of one work, a group of works, or all literature as a "system" is irrelevant at this level of criticism - the commitment to a particular mental stance remains more or less the same. In brief, it is the set of implications, the network of associations, which travel with the notion

from its original contexts and which contribute to the definition of an attitude towards the literary work, that will be the focus of attention. These associations, as they have been refined in mathematics, have been traced in Chapter Two, and how they characterize an approach in the study of language has, I hope, been sufficiently demonstrated in Chapter Three. This chapter, then, will be concerned with sketching the manner of the archetype's involvement in literary studies and with drawing out and criticizing some of the consequences.

To give substance to the comments that will be made, I have chosen, as illustration, an analysis by Roman Jakobson (and Lawrence Jones). An entry into the arena of Shakespeare criticism, it is an obvious choice (but, as it has understandably attracted attention in the English-speaking world, little can be said of it that is new). Further reference will be made to other works, both by Jakobson and by other authors, but in the main this work will be focused on.

As has been mentioned, Jakobson specializes in the analysis of individual works, usually poems. In the theory that he has developed to govern his analyses, perhaps the prime distinction is between literary studies, "the objective scholarly analysis of verbal art", and criticism (Jakobson, 1960, p. 352). With the accent on "verbal art", attention is thus turned to verbal structure, the formal properties of the poem's language, and their artistic arrangement. Jakobson is fond of making an

analogy between poetry and painting - particularly the geometric aspects of pictorial composition. He writes: "Poetics deals with problems of verbal structure, just as the analysis of painting is concerned with pictorial structure" (1960, p. 350), and, developing the analogy in Jakobson (1968): "There is ... a remarkable analogy between the role of grammar in poetry and the painter's composition based on a latent or patent geometrical order or on a revulsion against geometrical arrangements" (p. 605). What is significant in these passages is the formalist attitude: in the way that the analyst of painting is to reveal compositional configurations (the necessary skeleton of the work), their type and relative density, so the analyst of a poem is to reveal its artistic manipulation of grammar - where "grammar" includes word-classes, classes of the various subdivisions of the word, and their types of arrangement.

It is at this level of the formal features of the poem's language that Jakobson locates the system. For he maintains that the fundamental characteristic of poetry is its reliance on a distinctive function of language (the "poetic"), which manifests itself as language controlled by "similarity ... superimposed on contiguity", by "equivalence ... promoted to the constitutive device of the sequence" (1968, p. 602). Of course, with the idea of similarity, of equivalence, enters that of contrast; the reiteration of a grammatical unit serves to mark a contrast between that unit and

other units similarly reiterated. Thus ideally, the unit on its own is unimportant; it is only in reiteration that it gains functionality. But Jakobson makes a necessary but damaging (as will appear more fully later) admission when he writes: "However effective is the emphasis on repetition in poetry ... a phoneme that appears only once, but in a key word, in a pertinent position, against a contrastive background, may acquire a striking significance" (1960, pp. 373-4). This is surely so, but with the introduction of "pertinence" the domain of the purely formal is left. Either the system is constructed from units located purely distributionally or its claim to being "underlying" and determinate (operating subliminally on the reader - quoted in Culler (1975), p. 68) is pointless. The admission can be seen as an inconsistency (but a significant one) when the following statement of the aim of the analysis is considered. The analyst is to engage in the "unbiased [= uninfluenced by questions of pertinence?], attentive, exhaustive, total description of the selection, distribution and interrelations of diverse morphological classes and syntactic constructions" (1968, p. 602). As is evident from his analyses, this statement is incomplete. To remedy the deficiency, it can be said that the Jakobsonian analyst is to take into account a further set of "interrelations": those holding between relations on the grammatical level and those on the level of the formal units of versification - line (and hence metre),

stanza, etc.. Thus his vision of a poem can be summarized as language organized into a balanced, symmetrical system of relations holding between a selection of the language's formal properties and a selection of versification's traditional units.

This "Euclidean" understanding of poetry (that there exist determinate essences expressible schematically) is neatly captured in the following statement: "The abstractive power of thought, underlying ... both geometrical relations and grammar, superimposes simple geometrical and grammatical figures upon the pictorial world of particular objects [in painting] and upon the concrete lexical 'wherewithal' of the verbal art ..." (Jakobson, 1968, p. 606). That the status of "content" is relegated to a subordinate role is obvious. And to an extent, Jakobson's emphasis is valid: the how of expression is what sets poetry apart (Culler's setting out as poems of two sentences, one from a newspaper, another from an essay by Quine, the logician, is a minor indication of how a statement is taken differently when cast as poetry (1975, pp. 161-163)). But there are problems with the way Jakobson develops this truism, as will become apparent in the following analysis.

In the approach to Sonnet 129 (Jakobson and Jones (1970); the version used in their analysis is reprinted in Appendix B below), it is immediately obvious that the expected mental attitude has been brought to bear - an attitude defined by acceptance of the original

Structuralist analogy. There is the initial definition of the constituent units, the naming of the existent relations, the drive toward precision and explicitness (the accent on formalism), towards the comprehensive description of the object and the demonstration, via this description, of its (underlying, essential) coherence. Briefly, an attitude that aims at the reduction, via that comprehensive description, of surface differences to a network of relations holding between the chosen units. The obvious question is whether a literary work is either successfully or fruitfully approached in this way. Certainly difficulties and inadequacies can be pointed to relating to each component of this attitude.

The choice of type of constituent unit in Jakobson is relatively uncontroversial. The grammatical units are familiar - for example, adjectives, finites and substantives abstract and animate. Syntactic groupings and functions too are singled out. Being categories, they are typically understood as units; there is no unconvincing straitjacketing as occurs in Greimas' attempt (similar to Katz's - see Appendix A below) to segment the semantic level of language (for a detailed exposition and criticism, see Culler (1975), ch. 4). Nevertheless, though this is perhaps slight criticism - recourse to grammatical categories entails a dependence on contingencies within the discipline of linguistics, a discipline far from settled at present. Rival termin-

ologies, resultant from the linguistic phenomenon being sliced in different ways, would, when applied to the same poem, produce different structures. (It is perhaps significant in this regard that Jakobson uses for the most part a "neutral" terminology, one that would be at home in traditional grammar.) With this possibility of a plurality of structures, gathered from co-existing linguistic systems, the interest in any one structure revealed by a single type of grammatical analysis can only be slight. With the larger formal units - hemistich, verse, distich and strophe - Jakobson is on safer ground, for the concepts and terms are relatively stable. But still, the incorporation into the structure of solely formal features must raise the question: What of "content" (as traditionally understood)? And perhaps the further question: What is the validity and usefulness of maintaining the distinctions as rigidly as Jakobson's analyses do? The emphasis on grammatical analyses is usefully apprehended against the background of Wetherill's warning that "words are much more complex than the grammatical categories to which they belong ..."  
(Wetherill, 1974, p. 72).

Again the choice of relations is apparently innocuous. In the attempt to grasp the nature of any complex object, perception of similarities and differences among the component elements is the obvious procedure. And if the poem is identified at the level of grammatical texture, it is a perception of these

relations that will reveal the particular constitution of the poem. So the method (if the nature of a poem is not reflected upon too deeply) is plausible. A description of the method might be as follows. The larger units of verse-form are isolated and sub-divided. Each is potentially functional in the poem, that is, each may be potentially distinguishable as similar or contrasting with another unit of the same order. What brings their function into play, are the grammatical forms these units contain. Thus the next step is a description of the grammatical features of the poem and their location, or, to put it another way, their distribution with relation to the units of verse-form. Thus, in the analysis of "Th'Expence of Spirit", Jakobson can write: "The terminal couplet[one of the verse-form units which may be distinguished from the rest of the poem] opposes concrete and primary nouns to the abstract and/or deverbative nouns of the quatrains" (p. 27). Similarly, the functioning of hemistichs within the lines is marked by a parallelism of features about the caesura. Further, he finds such parallelism in all lines of the sonnet but the central two - thus noting the central distich as set apart from the six lines on either side of it (p. 29).

But this sort of approach to "discovering" the structure of the poem is not without its inherent weakness, as has been pointed out. And this is compounded by a more serious weakness that Culler has described

well. He is worth quoting and at length.

One can produce distributional categories almost ad libitum. One might, for example, begin by studying the distribution of substantives and distinguish between those which were objects of singular verbs and those which were subjects. Going one step further, one might distinguish between those which were objects of singular verbs and those which were objects of plural verbs, and then one might subdivide each of these classes according to the tense of the verbs. This process of progressive differentiation can produce an almost unlimited number of distributional classes, and thus ... if one wants to show, for example, that the first and last stanzas of a poem are related by a similar distribution of some linguistic item, one can always define a category such that its members will be symmetrically distributed between the two stanzas.

(1975, p. 58)

The point is damaging. For though the method itself is quite clearly specified, it is not sufficiently restrictive, allowing patterns to be found wherever looked for (as Culler's reductio ad absurdum demonstrates - p. 63) and thus calling into question the essential nature (and hence interest) of whichever patterns are found.

Quite beside this internal weakness in the approach, there remains reasonable doubt as to whether relations between words in a poem are usefully conceived of in this way. Wetherill's point is relevant at this level as well. The complexity of the word naturally effects the relations it contracts, a complexity that surely involves what Jakobson has separated out as the "where-withal". While an emphasis on the formal may provide a semblance of precision, it is precision gained by ignoring the effective role of "content".

This point becomes urgent when the drive towards

demonstrating structure via comprehensive description is considered. As has been suggested, this concern with exhibiting coherence by focusing on abstracted internal (and functional) properties is an important hallmark of considering the investigated object as a system. Jakobson thus begins his analysis by abstracting the functional units of verse-form. The poem is an English sonnet, comprising three quatrains and a concluding couplet. These four strophes organize the poem by entering into contrastive relations with each other in four different ways. The inner two are linked in opposition to the outer, the even are linked against the odd, the first two are linked against the last, and the couplet is opposed to the quatrains. These oppositions can be represented as:

abba, abab, aabb, aaab.

Presumably it is intuitively recognized that oppositions represented by

abaa, baaa, aaba

are not functional - for the question that they might perhaps be so is not considered. Similarly, there is no mention of a possible opposition between octave and sestet - a point that is important. He discovers instead that the central distich is a functional unit, distinguished texturally from the six lines that lie on either side of it.

In the chapters following, he sets out to demonstrate how the system of oppositions is actualized in the language

of the poem. For example, in the chapter entitled, "Odd against Even", he writes: "The odd strophes in contrast to the even ones abound in substantives and adjectives: seventeen (9 + 8) substantives versus six (2 + 4), as well as ten adjectives (8 + 2) versus one (1 + #) .... Only in the odd strophes do substantives occur as modifiers of other substantives or of adjectives (6 + 4)" (pp. 19-20). And, in "Outer against Inner", "The inner strophes are devoid of finites, but comprise ten (6 + 4) participles. On the other hand, the outer strophes are deprived of participles, but each of these strophes contains one finite which occurs twice in the coordinate clauses linked by a conjunction ..." (p. 23). Observations of this sort are collected until most words are assigned a function, and a complex of interrelations between the formal units is developed. But the lure of comprehensive description can result in the detailing of somewhat uninteresting patterns - laying the analyst open to the charge of what Pettit has dismissingly called, "pattern-picking" (1975, p. 41). An example is the following: "The anterior strophes show an internal alternation of definite and indefinite articles, one the followed by an a in I and one a followed by one the in II, whereas the posterior strophes contain only indefinite articles (four in III) or only definite (two in IV)" (p. 25). A fair portion of Chapter Nine ("Couplet against Quatrains") is of this sort. Jakobson would no doubt reply that while such details might appear uninteresting

to the critic, "objective scholarly analysis" reveals their role in filling out the design of the poem. And this may be so.

However, it does call into question the value of the design so discovered. Leishman, in another but related context, has remarked:

There are ... literally hundreds of places in Ronsard where he is imitating particular passages in particular poets, ancient and modern, but I doubt whether he carried in his head and habitually tried to exemplify all the innumerable classifications of formal rhetoric. It seems to me much more likely that he said something like: "Here I'll do the sort of thing that so-and-so does at so-and-so"  
...

(1962, p. 152)

The point seems obvious, but it nevertheless seemed necessary to Leishman to make it. And it may be adapted to fit this present context. For while the poet certainly carries in his head, along with a general sense of design, both a sense of his language's potential to make patterns and a particular sense of poetic design provided by tradition, a poem is not - except when pattern is obviously the poet's subject - written to exemplify a pattern. Without developing the subject at this point, patterning surely functions in the service of a communicative intention. And it need not be deliberately utilized; poets have never felt the need to asterisk those that they consciously intended. All that is necessary is that it appears functional, that it provides a sense of supporting a meaning that plausibly fits in with the meaning of the work in its rather ill-defined

totality. Of course, (as Jakobson's analysis inadvertently demonstrates) not all patterning need function in this way. Phonetic or syntactic correspondences do not in themselves give value to a piece of language (and may belong as much to discursive prose as to poetry - as Culler has demonstrated (1975, p. 63)). Jakobson, thus, by following lines of thought provided by the "system" analogy, appears to approach the topic of formal patterning from the wrong direction. Rather than constituting the essence of the poem, independently of the "wherewithal" it organizes, functional patterning is more sensibly conceived of as dependent on prior questions of significance.

But I do not wish to give the impression that Jakobson ignores questions of meaning; for he does not. Yet the way he treats them is symptomatic. In an early chapter (entitled "Interpretation"), before setting out the system of formal oppositions, Jakobson provides a "tentative explanatory rewording [of the sonnet], literal as far as possible" (p. 14). It is worth quoting in full.

- I In action, lust is the expenditure of vital power (mind and semen) in a wasting of shame (chastity and genitalia), and until action, lust is deliberately treacherous, murderous, bloody, culpable, savage, intemperate, brutal, cruel, perfidious;
- II no sooner enjoyed than at once despised, no sooner crazily sought than crazily hated as a swallowed bait that has been purposely laid (for fornication and trapping) to make the taker mad.
- III Mad, both in pursuit and in possession, intemperate after having had, when having, and in the quest to have a bliss while being tried and a

real woe after having been tried, beforehand a proposed joy, afterwards a phantom;

IV All this is well-known to the world but nobody knows well enough to shun the heaven that leads men to this hell.

And the chapter continues by justifying the assignment of two meanings each to "Spirit" and "shame", pointing to the commonly recognized practice of the Elizabethans to pun with these words. The method he has adopted appears obvious. Literal "equivalents" are provided for each of the words separately; then these "lexical units" are strung together to provide the literal paraphrase. That this is an inadequate and artificial approach to the language of a poem has been indicated in Chapter One above. A sense of the usual meanings of the words is undoubtedly necessary, but is solely useful as an entry, as a guide to the exploration of the unique semantic world the language of the poem (with the contexts it carries) creates. As has been noted, the "literal" does not provide a restingplace for understanding. It is no criterion of a poem's having been understood that literal equivalents can be found for words that strike the reader as "odd". If "Spirit" is to be understood as "mind [?] and semen", the question to be asked is why is "Spirit" used in this way in this context? What is the effect? And if "lust" is its "expenche ... in a waste of shame", why is it so described? Does the rest of the poem provide any indication? Does the rest of the poet's oeuvre? Does the cultural milieu he inhabited? These are questions, necessary in the quest for understanding,

that Jakobson's method is not equipped to answer.

Criticism can also be levelled at a lack of consistency in carrying out the literal paraphrase. If two meanings are assigned to "Spirit" and "shame", why is the same not done for "waste"? That "waste" may not have been generally used in this way is of little interest and of no importance. The context allows "waste" to be understood both in the sense of "expenditure without compensatory, equivalent gain" and of "desert", senses which act as illuminating commentaries on each other (especially if Shakespeare's use of "husbandry" in some of the other sonnets is held in mind). There seems, moreover, no reason for limiting "lexical ambiguities" to obvious instances of punning; as there is none for limiting ambiguity to simply lexical ambiguity. The first line of this sonnet is in fact a wealth of significance; which Jakobson's "translation" does nothing to capture. To begin with, "Spirit" (in one of its senses) cannot be understood simply as "mind". Certainly, something like "intelligent being" is intended; but this meaning is fused with that of "affective being". "Spirit" (in, for example, its conventional opposition to "the flesh") is the centre of moral life, the location of "humaneness"; and along with this significance from the language of morality, there is no doubt an overtone drawn from the language of religion - "spirit" as "soul". Rosen (1971, p. 37) has pointed out that "expencc" can mean not only "expend-

iture" but also something like "loss" (see Sonnet 30, "And moan th'expence of many a vanish'd sight"). "Waste", as has been noted, admits of two readings: one that involves "expenditure" but denies any equivalent gain, and one that may be stated as "desert". "Shame", as Jakobson points out, has the sense both of emotional experience and the "parts of shame", the genitalia. And the complex of significance the line as a whole has on the textual level may be suggested by the following (taking the line as it functions in the sonnet, as the predicate of "lust in action"): that lust is the expenditure (carrying the idea of intention)/the loss (carrying the idea of the consequence of spending) of both the best in man (the seat of his nobility, his reason, emotions and affections)/the seminal fluid, in an arid, unfruitful atmosphere of shame/ in a wasteful use of the genitalia; that (for this is implied by the manner of statement) there is an "expence of Spirit" which is fruitful, where there is gain equivalent to the loss, and that this is something other than "lust". Deepening this significance, but not developing it in any way, is another possible reading of the "th'expence of Spirit" as "the moment of death" ("the loss of the spirit/soul at the moment of death"), which brings into play the common Elizabethan (and it is not only theirs) identification of the moment of death with that of ejaculation (death as "expiry" and as the emission of "spirit"/semen). It is this complexity, this semantic

resonance that (along with its sonority and lack of verb) gives the line its force, and the sonnet, with its loose syntax, its momentum. And it is from this awareness of semantic complexity (rather than from an artificial "literal paraphrase") that, in the development of understanding, further questions are asked of the text.

But Jakobson does, in later chapters, make observations of interest. Even so, he studiously avoids drawing conclusions that might affect his interpretation.

It [no. 129] is the only one among the 154 sonnets of the 1609 quarto which contains no personal or corresponding possessive pronouns. In Sonnets 5, 68, 94 only third-person pronouns occur, while the rest of the sonnets make wide use of the first- and second-person pronouns

(p. 16)

is offered baldly. This point could be profitably used, in parenthesis perhaps, to underscore a comment on the impersonality sensed in the poem. But this sort of detail on its own is worthless, gaining worth, as has been pointed out, only in support of some judgement of significance or effect. The same might be said for another linguistic detail he notices:

Both animates of the sonnet, the two which pertain to the personal (human) gender, function as direct objects ...

But here he does continue:

Both personal nouns of the poem characterize human beings as passive goals of extrinsic, nonhuman and inhuman actions.

(p. 20)

The exact statement of the interpretation may be disagreed with, but at least there has been a move

beyond the mere listing of linguistic detail.

In assessment, the major fault of Jakobson's work (in this essay - which is not, however, inconsistent with his analysis of "Les Chats" and his theoretical writings) lies in the impression offered that he believes a poem to be merely meaning - a "semantic layer", unproblematically reducible to simple literal statement - "dressed up" in albeit splendid symmetries of form. One seems to be returning to a variant of the Literalist idea of form as decoration - as against complication <sup>2</sup>. With this idea of an arbitrary relation between "form" and "content", Jakobson is ill-equipped to enter the critical arena - as his last chapter ("Concluding Questions") demonstrates. He takes Ransom to task for complaining that this is no true sonnet, that it is merely a fourteen line poem with a concluding couplet, that it has "no logical organization at all" (1938, p. 535). His reply that it is a true sonnet because it possesses "amazing external and internal structuration palpable to any responsive and unprejudiced reader", (while containing an element of truth) misses Ransom's point. For Ransom bases his claim on a perceived feature of the traditional sonnet - its argumentative structure, its sense of controlled, logical movement; and the presence of grammatical design

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<sup>2</sup> This is not entirely fair if Jakobson's (inconsistent?) invocation of pertinence is borne in mind.

in language certainly does not imply the presence of logical structure. A proper reply might be that Shakespeare has usefully exploited just that fact, that he has filled out the sonnet form with grammatical design alone, but that that is no fault. For the lack of logical structure is appropriate to (or rather, supportive of) the significance of a poem exploring a force of life that exists "past reason". A similar criticism can be made of all Jakobson's "answers" to Shakespeare's detractors. And when he writes, "And is it believable that 'collapse recurs when a very wo fades into a dreame for the rime's sake' (Robertson, 1926, p. 219)", one is entitled to retort that according to Jakobson's style of analysis, every word is chosen "for the rime's sake". Weakness is again apparent in his criticism of Graves and Riding for their "surmise of the free and infinite multiplicity of semantic load attributed to Sonnet 129". Some of their readings are certainly far-fetched; but reference to "poetic texture", as Jakobson understands it, can neither corroborate or deny their "surmise". Only an attention to language in its potential to create meaning in more or less controlled fashion can do that. It is this last chapter of the essay that reveals best the impotence and manner of irrelevance of Jakobson's approach.

And it is to the primal analogy with "system" that much of the inadequacy in Jakobson's analysis can be traced - and, I suggest, the same might be said of any

sensed inadequacy in the work of other Structuralist writers. The defects can be related to the two main points in criticism of the use of the analogy in language-study. Conceiving of language as a formal system cannot account, first, for the creative play within language that takes place in the grasping and production of meaning, and, second, for language as a cultural (as opposed to a merely social) phenomenon. While it may be argued that this is not of serious consequence to linguistics - in that its objective is scientific, and hence its procedure is necessarily selective - the same case cannot be made for the study of literature. If there are problems with conceiving of linguistics as scientific (as I believe there are), the idea of attempting to fit the conceptual apparatus of the successful sciences onto the study of literature is immediately absurd. The search for a "system of laws" underlying the phenomenon of literature cannot result in anything convincing - and the claim that any tendencies discovered are "laws" is to use language too loosely. Thus, there is all the more reason to stress any features of the full experience of literature that are ignored in the process of conceiving it as "system".

As I have suggested, the first stage in thinking in terms of "system" would be to isolate units in terms of which the system and its structures are to be "reconstructed" (cf. Barthes (1964), pp. 214-215). This would amount to the abstraction from the experience of the

literary work of properties usually of a single type believed essential, that is, in terms of which it is believed the internal coherence of the work can be revealed. This process has been pointed to in the work of Jakobson, and the price of abstraction noted. The approach of Greimas is similar (cf. Greimas (1970) and, for criticism, Culler (1975), ch. 4), and can, on similar grounds, be criticized. Though he does concern himself with the "semantic layer" of the work, the definition of lexical units, as has been suggested a number of times above, tends to be arbitrary and limiting, disallowing words their potential for interaction. Barthes' analysis of Racine's plays in terms of "mythic forms" (Father, Sun, etc. - though he is not single-minded in his approach), while being in many ways different, still categorizes (using terms of the same kind), and then observes the interrelationship of these categories. In each procedure, the mind is drawn from the "surface" of the text by way of classification according to a single scheme, which thereafter becomes the focus of interest.

Motivation is thus the desire to find categories of a type that will relate the largest possible number of details of the text(s) - and then to set about "reconstruction" in their terms. But once categorized, a detail is "fixed" to a single significance. Words, however, and the larger non-linguistic elements that can enter a literary text (such as action, event,

characters and their utterances), do not enter the text with a single precise meaning. As has been pointed out, this is one crucial difference between a literary text and formalized discourse. And, were words thought of (unrealistically) as such, there would still be no way of charting precisely their transformation within the linguistic context. On both counts, to "fix" the significance of a detail with a single category is to misrepresent the true state of affairs in which words (and the larger non-linguistic elements) enter a text "trailing clouds of meaning", which, once in the environment of the text, interact and fuse in ways that are not precisely specifiable. To this, the Structuralist might reply that he is not interested in this sort of meaning - that it is the functional significance of a detail that he concerns himself with (cf. Todorov (1970), p. 130). Details enter a text and become significant by reference to the role they play in contributing to the coherence of the text. It is this role that gives the detail meaning within the work. But, at worst, this accent on functional significance can result in the sort of irrelevancies noticed in Jakobson's analysis; and, at best, the sort of partial study evidenced by Barthes' analysis in terms of mythic forms. Elements of a literary work have, in general, the potential to function multiply. Primarily though, their function is to recall the contexts from which they gain their intelligibility. And any reader, before he

seeks to determine what other functions they may have, has necessarily to take this one into account. To consider any element solely in terms of its function in contributing to coherence is to limit its significance. The result is, of course, a simplification of the literary work. In the case of Jakobson's analysis the simplification is obvious and serious; in Barthes' and the narrative theorists' (who seek unity at the level of plot) simplification is less drastic, but still noticeable.

For the question that must be asked is: What value or interest have the patterns or structures that are revealed if they are based on a deliberately restrictive approach to the language of the work? The analogy with "system" invites a procedure that combines systematic abstraction from the numerous aspects of a work with the work's reconstruction in terms of the formal properties chosen. In mathematics, as indicated in Chapter Two above, this mode of thought has proved extraordinarily enlightening and fruitful. The same may be said of its role in the physical sciences, where methods of confirmation validate the abstraction. But in the study of literature it would appear to be of dubious value. The literary work is accessible only through language (obviously), but more importantly, through a reading of its language. And the reading of any text involves, from the outset, the exploration of any significance its language permits. At all times in

an attentive reading, one is engaged in relating any potential for significance details of the text might have. The process begins with the very first sentence, with the tentative grasp of its possible meanings, and then continues through expectations of how the meanings are to be developed, and, when those expectations are denied or confirmed, through a modification or consolidation of significance already discovered, till at the end of the work a sense of gestalt is achieved<sup>3</sup>. The movement of attention is always, under pressure of a continually changing context, moving backwards, forwards through the text, retaining details that fit the emergent gestalt and, more or less unconsciously, discarding those that do not. Yet these details, especially in larger, more complex works, retain their potential to signify, a potential actualized perhaps by an alternate reading. As Iser remarks: "The semantic possibilities of the text will always remain far richer than any configurative meaning formed while reading" (1971, p. 290). And this would appear to be so because the significance of any detail of a literary work is not precisely definable, because in literature one is dealing with an accumulation of nuances, of suggestions of meaning that may be validly organized in different ways. An approach, viewing the work in terms of "system", that, while operating at a

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<sup>3</sup> It is necessary at this point to acknowledge a debt to an excellent analysis of the reading process in Iser (1971).

sufficiently high level of abstraction, "fixes" a detail (thus terminating the process of suggestion<sup>4</sup>) in terms of what it shares with other details in the work, must necessarily ignore this fact of literary language. And an approach that searches for structure in this way may in this regard be considered inadequate.

The second type of objection can, as has been suggested, be related to the inability (or, more accurately, the argued policy of ignoring) of structural linguistics to account for language as a cultural phenomenon, as a richly textured world of symbols, and not merely a system of signs. See pp. 121-126 above.) This objection is not altogether distinct from the one just detailed. For thinking of a work (or "corpus" of works) in terms of "system" bases a discovered coherence on a systematic limitation of the significance of individual details. In this sense, it is untrue to the language and signifying power of the work. At the same time (and as will be seen, partly for the same reason),

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<sup>4</sup> Not all Structuralist writing can be criticized in this way. For example, in that most interesting of developments in Structuralist thinking, S/Z, Barthes turns his back on "the first analysts of narratives ... who sought to see all the world's stories ... in a single structure", complaining justly that "the text thereby loses its difference" (1970, p. 3). The notion of internal coherence too is modified somewhat. Details of the text are admitted to function multiply in terms of a limited number of codes that interlace, and thereby give a sort of coherence to, the text. A detail may, and most do, function within more than one of these codes at a time.

the concern with a purely internal coherence, with the purely functional role of its elements, isolates the work from the cultural context (in the broadest sense) in which it gains life. Questions of the way in which it uses language in the evaluation of experience are ignored; as are questions of its particular relations to its author, to tradition (including both a specifically "poetic" tradition of literary forms, and also modes of thought and evaluation made available in a culture to an author), and, perhaps most important, to its reader. For, in taking up a Structuralist stance towards a work, the reader (as "analyst", isolating essential, formal "properties", revealing the constitution of the work in terms of these with their invariably abstract, categorizing names and the relations that hold between them) adopts the acultural pose of the natural sciences (and the mathematics on which they are based), a pose which has, in the past, been the source of their strength (and ability to threaten, since this strength inheres in knowledge ideally beyond cultural control). That this attitude is acknowledged - and valued - is apparent from the numerous claims to "objectivity" and "being scientific" (cf. the quotation

from Jakobson above (p. 133), and Todorov (1969, 1973) <sup>5</sup>. However, if, on the other hand, the reader turns his attention from the "objective" search for a purely formal, internal coherence, and, in the process, allows language its full signifying power, it is difficult to imagine how questions of the work's cultural "situation" - and equally the reader's "situation" in response to the complex experience the work provides - can be avoided. An illustration of this point will be the concern of what follows, with, for convenience, the language of Sonnet 129 providing the point of entry. There will be no attempt to develop a comprehensive statement, as the intention is merely to suggest aspects of one way in which the Structuralist vision limits the nature of the literary work.

As was suggested earlier in this essay, language gains intelligibility from its use in all the various facets of experience, in the ways of living out, and coping with, existence. It is by reference to these

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<sup>5</sup> That I believe this is an attitude merely, I have indicated elsewhere. It seems impossible that "poetics" or the analysis of single works can provide anything like the confirmable knowledge ideally provided by the natural sciences. It is at this level of acultural attitude that criticism would apply to someone like Goldmann, who does appear to relate the literary work to its background. But perhaps not only at that level. For his "methodology" (reducing the work to a structure "isomorphic" with the social structure of its background) seems to inhibit the statement in any subtlety of the particular relation a particular author might have with his historical circumstances and express through his work. See, for example, Goldmann (1970); and for criticism in general valid, Doubrovsky (1966), ch. 8.

contexts of use, and the relative place they occupy within them, that words gain their meaning. The involvement with life is intimate, so that language, in the various forms it may take, naturally expresses the language-user's (in both the normal sense, and the extended sense of "community") discriminations and choices. Even the language of science contains an implicit evaluation. But the language of the individual, in his attempt to organize and understand experience, in his use of language to guide and justify his actions, is more or less overtly evaluative. Evaluation is built into the very substance of this type of language; as, in scientific language, it is deliberately excluded. But whether evaluation is overt or covert, it remains an element (which may or may not be relevant) of a piece of language's meaning, and in any full understanding of the language has to be taken into account.

This becomes immediately apparent when, in the second line of Sonnet 129, one encounters the word "lust". First, to underline the relation of language to life, it is extremely doubtful whether anyone who has not experienced sexual desire or the possible complexities, emotional and moral, involved in human sexual relationships, will gather the full force of the word. The linguistic context (which is a series of predications on "lust") and a dictionary may help towards forming an idea of what is meant, but without that experiential meaning, its significance will be thin. More important,

"lust" is not simply "sexual desire". It is sexual desire as seen by a culture at a particular time (the word is singularly "un-twentieth century"). It is one way of understanding the phenomenon of sex, a way which can be understood in turn by searching out its common associations ("merely animal", "belonging to the flesh, and so opposed to the spiritual", "excessive, unrestrained", etc.), and by seeing it in contrast with words related to the same phenomenon (for example, "love" and its associations), and by arriving at a sense of its evaluative content by seeing it in its place in the network of cultural meaning so discovered<sup>6</sup>. In this, the immediate linguistic context is of little assistance. The word on arrival in the context is already permeated with cultural meaning, a meaning that it is the context's task to elucidate, develop or deny.

That the meanings of words may be transformed by their context does not need to be stressed. But perhaps what does, is that this transformation is itself significant. For, as in the case of metaphor, the original meaning is not altogether lost; there remains a "tension" between old use and new. "Heaven" and "hell" in the last

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<sup>6</sup> And the question of the value of this way of responding to the phenomenon cannot be ignored, as, by its very difference, it calls into question contemporary attitudes. What is the relation between the positive and negative aspects of the response? What is the difference between this polarizing attitude and one typically contemporary? What has been lost/gained in the historical transformation? These are all questions a full response to the language sooner or later demands.

line of the sonnet recall the original context of Christianity; but the use to which they are put in the poem is far from customary - indeed it verges on the blasphemous. "Heaven" in the poem refers solely to the "blisse", the "joy" in consummating the sexual act; and "hell", similarly stripped of its otherworldly connotations, not only to what feelings of disgust and degradation follow immediately after, but also to the experience of acute mental turmoil and instability in the clutches of "lust" in all its stages, and the sensed loss of human dignity this implies. And ultimately, "hell" refers to the "world", characterized by a treachery, savagery, cruelty, etc., for which, it is implied, a part of the cause can be found in men's slavery to the sexual impulse. But the original context of "heaven" and "hell" is not forgotten, thus raising questions of Shakespeare's relation to Christianity<sup>7</sup>, and, in general, to the thought of his time. For certainly, one interpretation of this transformation of meaning is that for Shakespeare as he expresses himself in this sonnet, Christianity with its ascetic ideals, its call for the "renunciation of the flesh", is (bitterly) without hope of efficacy, without meaning in a world of men irredeemably "savage" (can the meaning "natural" via that of "wood" be ignored?), incapable of

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<sup>7</sup> Questions that have, for example, been provocatively raised in Kaufmann (1959), especially ch. 1.

sexual restraint (or any other kind? for sex works here as something of a symbol for general baseness). And plausibility could be increased by discovering similar attitudes in other works (on the assumption of a certain coherence in Shakespeare's thought - King Lear and Hamlet, for example, would be relevant). At the same time, contrast with the particular attitudes of, say, Herbert, Donne and Milton (and, of course, Dante) would help in clarification and particularization.

The language of the poem naturally invites questions and investigations such as these. There is, in the process of understanding, a continual movement from the immediate level of the text, from the surface of dictionary meaning. And because understanding moves via the ill-defined suggestive power of language, because, in literature, even choice of form is significant and calls to be interpreted, and because, ultimately, both language and literary form are pressed into the service of an interpretation of aspects of existence (which has meaning only through such interpretation), there is no point at which one can say understanding is complete (though there are obvious degrees of incompleteness). The situation is further complicated by the fact that no work has significance on its own - understanding can only be gained in a consideration of its "notness" (Leishman, 1971, p. 174). And, of course, none of this significance is clearly defined. Yet it all plays its part in qualifying the language of the work as it

appears at the surface. And here lies an important difference between the language of literature and that of the "exact sciences". In mathematics and in the formalized natural sciences, the meanings of terms are precisely intelligible, and their suggestive power (except in the context of research, of attempted meaning-extension) is nil. Understanding operates completely at the surface, gathering the meanings of the terms and the precisely defined relations that link them. It is when one stops being a scientist and searches for the larger significance of the language-form, of the activity of the scientist, when one attempts an encompassing understanding of science itself, that one leaves the realm of "two-dimensional" language and enters the world of interpretation that the reader of literature (by virtue of its language) inhabits. For the language of literature demands this response in the way that the language of the exact sciences, with their controlled contexts, do not.

Given the multiple and ill-defined signification of the details of a literary work, and that a full response to these details leads to questions of what might be called the "cultural situation" of the work, the case for "internal coherence" appears slight. Rather than a "system", the literary work might more accurately be considered a junction of relations (and certainly, none of them "precisely definable") converging on the linguistic level of the text - relations between work

and author, and other works by the same author <sup>8</sup>, between the work and similar works by different authors, between its effects and its form, etc.. The list does not attempt to be conclusive; for it seems that the factors can be permuted in, if not innumerable, certainly a large number of different ways, and then, even if the same permutation, combined with different emphasis. While each of these "aspects" of the work may provide the subject of fruitful study, and would find its relation to the work in perceived "patterns of coherence" <sup>9</sup>, any revelation of the "internal coherence" of the total work (or collection of works) would be artificial, based on a limitation of the nature of the work.

As has been noted, the other limitation (though perhaps it is more than that) that the analogy with system encourages is that between the work and its reader. This finds expression in the claims to being "objective" and "scientific". But it is in some of the writings of Barthes that it is most eloquently developed. (See, for example, Barthes (1963, 1964).) Barthes talks

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<sup>8</sup> For example, L. C. Knights has interestingly argued that as a group "the Sonnets yield their proper significance only when seen in the context of Shakespeare's development as a dramatist" (1946, p. 65); and, as has been pointed out, a fuller understanding of "lust" in Sonnet 129 can be gained by examining the exploration of "love" in the other sonnets - and the plays are not irrelevant either.

<sup>9</sup> For a development of the idea of "aspect", see Jones (1975), ch. 5.

of criticism as functioning as a "metalanguage". This is a term borrowed from logic, where it marks an important distinction. Very roughly, it means "language about language". Having constructed a system of logic, say, one would need a terminology with which to understand it, in which to discriminate its properties, and, perhaps, to prove theorems about it in turn. Criticism then (as metalanguage) faces the work (as a coherent system) and seeks out the functional meaning of its elements and their rules of combination, thus "reconstituting" the "language" of the work in its (criticism's) own terms. This metalanguage is not specifically technical, "scientific". A critic may use any of the "languages of the day" (Barthes lists Existentialism, Marxism and psycho-analysis). All that is needed is that it be "homogeneous" and that it "saturate the entire object of which it speaks". And he bolsters this idea by somewhat loose talk of the critic's "absolute freedom" (though he does remark that the work itself may suggest which "language" may best reveal its coherence). It is not clear whether Barthes intends his analysis of criticism to be a statement of how things are, or of how they ought to be, but on either count it can be found wanting. Problems with regarding the work as a system have already been suggested (what value or interest is a coherence "established" by the mere fact that one has imposed a "homogeneous" language onto as many details as possible?). What is of

concern now is the natural corollary of regarding criticism as "metalanguage".

The attitude is clearly limiting in two ways. It simplifies the relation of the reader to the past, and also, as a consequence, his relation to the present. To begin with, talk of "applying" a language-of-analysis to the work as object-language (with implications of the approach being a more or less mechanical technique, a "methodology") is, whatever other objections one might feel are pertinent, to ignore the complex relevance of "extra-literary" experience (and the interpretation of it) to the understanding of any work of literature (a relevance that reflects the intimate involvement of language with the complexity of life). The work does more than just "suggest which metalanguage to use". The reading of literature opens up successive visions of how life could possibly be interpreted and evaluated, each work leaving its mark on a reader's interpretation of his life, and thus, potentially, on the stance he may take in the face of each new literary work. The point becomes clearer when one considers what Barthes has called the "languages of the day". Like works of literature, these suffer no "virgin-birth". Each is born out of a sensitive and no doubt arduously achieved response to the present in a modification of terms from the past. And certainly Existentialism and psycho-analysis would have been inconceivable were it not for the prior insights of

imaginative literature <sup>10</sup>.

Ignoring the mode of genesis of such "languages", ignoring their relevance to the perplexities of existence, Barthes asserts that all that is needed for them to be "valid" is that they be "coherent". But this is surely a misinformed borrowing from the realm of mathematics. As was pointed out, "coherence" became the prime value in mathematics when it was realized that mathematical thought need not be tied to an experience of the physical world, that it could generate significant thought independently of such experience. But apprehension of facets of human existence can never be considered "valid" without considerations of truth. The fact that there are different ways of perceiving, different "languages" in which to describe, the same phenomenon does not invalidate this claim. The value of a "language" (whether it be the language of a work - for example, Shakespeare's interpretation of sex - or the language used in a work's interpretation - for example, a particular style of sociology) does not lie primarily in its coherence. To assert this is to rest too easily in relativism, a relativism that Barthes with

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<sup>10</sup> It is significant that both modes of perception can be traced back to Nietzsche, who continually acknowledges his debt to writers such as Goethe and Shakespeare - and of course, the Greek tragedians. This is, of course, not to say that Sophocles is a proto-Nietzsche, proto-Freud or proto-Sartre; but that cultural knowledge, if not cumulative in the sense that scientific knowledge is, is historical, in the sense of its having a history which is part of its significance.

his talk of the "equal value" of different languages and the "absolute freedom" of the reader, happily espouses. But this is to ignore the fact that the choice of a language is of cultural moment, that particular languages, because of their involvement with particular styles of living, are open to criticism <sup>11</sup>.

In combating relativism in another context (the philosophy of science), Mary Hesse has, after adapting Habermas' idea of "historiography as dialogue", written:

What is required is a sympathetic attempt to enter into seventeenth century thought forms and problems without abandonment of the criteria provided by subsequent developments. History of science, like all history, is in principle written anew in every generation. Historical interpretations are irreducibly relative to the historian and his time, but it does not follow that they are relativist, if by this is meant that there are no external criteria for the evaluation of past science. On the contrary, there are our criteria as they have emerged in the course of history.

(Hesse, 1972, p. 287)

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<sup>11</sup> It is significant that when Structuralism was charged during May 1968 with being a reactionary force in French intellectual life, Lévi-Strauss (rather damningly) replied that this was untrue, for Structuralism lacked any political relevance whatsoever - that it was a scientific method that could be used by any political persuasion in the study of another (cited in Gardner (1972), p. 223). Equally, of course, it could encourage the sort of fatalism that Barthes' talk of "equal value" implies, and that the following remark by Lévi-Strauss (made during an interview later published) exemplifies. In response to the question, "What significance do you attribute to your research?", he replied, "... one can only hope for a little improvement in our understanding of things... still knowing well that neither we nor anyone else will ever understand them. After all, the only way to reduce life's boredom lies in our pursuit of knowledge" (Lévi-Strauss, 1971, p. 44).

This passage as it stands is pregnant with thought relevant to the criticism of literature. But restricting attention to the matter at hand, one might say that criticism is a "dialogue" between, on the one hand, an interpretation of a literary work (based on a cognizance of the full signifying richness of language and literary form) and the reader's interpretation of experience on the other (which too is a kind of "dialogue"). And even though each interpretation is "irreducibly relative" to the critic and his time, there do remain grounds for "external criteria". The language of the work, in a full response, naturally involves the reader in questions of interpretation and evaluation of life - unlike the languages of mathematics and the sciences <sup>12</sup>. The selection of a "language" with which to elucidate a work thus becomes more than mere selection according more or less to whim or personal taste (languages pre-packaged and labelled "Existentialism", etc.). For the reader does not exist, act and interpret in isolation

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<sup>12</sup> Hence ideas of the subversiveness of literature. See, for example, Kaufmann (1959); and the following remark of Trilling's is relevant. "... Structures of words they [authors] may indeed have created, but these structures were not pyramids or triumphal arches, they were manifestly contrived to be not static and commemorative but mobile and aggressive, and one does not describe a ... howitzer or a tank without estimating how much damage it can do" (1963, pp. 26-27). Of course, this estimation of the effect of literature is particularly modern, but this in itself does not invalidate the point that effect is relevant in discussion of literature.

("integrity" is not the prime moral value). The choice of a language is a matter for responsible and reasoned thought, for its dissemination necessarily has its effect on the intellectual and cultural life of the community. And it is in this responsibility to the cultural needs of a community that, ultimately, "external criteria" for the choice of a critical language are to be found.

## CONCLUSION

With each of the previous chapters being to a certain extent self-contained, each devoted to subjects (and ways of treating them) usually kept distinct, there is perhaps the need to draw together the connecting strands. Only a summary which is simply schematic will be necessary, as the topics in each of the chapters have (I hope) been treated sufficiently exhaustively.

As was suggested, many of the reasons for whatever dissatisfaction may be felt with the products of Structuralist analyses of literature can be traced to the basic metaphor of system (and thus also structure). The "system" here, of course, is the system of language; and many dissatisfactory features of this metaphoric extension may be seen as already inherent in the original predication. For, as problems attached to Chomsky's attempt to establish linguistics as a respectable science indicate, the use of "system" (and "structure") in language-study can not be accepted as literal. As a basic metaphor, it may provide some illumination of a part of the phenomenon; but then what remains not illuminated may well be of equal interest, and perhaps more deserving of attention (as, I suggest, for the study of literature, it is).

The idea of the basic metaphor, apart from providing a framework within which to understand the use of the "system" idea in the Structuralist study of literature,

brings with it as well an ideological history which suggests what those unaccounted-for aspects of language (and hence literature) might be. For it is at home with a view of metaphor that is, in turn, the most compatible with the distinctively modern ideas of language as naturally fluid, ideas that accept as natural, and account for, the continual process of meaning-change (amongst other sorts of change) in a language. Crucial to this view is the idea of "context" (all its different types) for the role that it plays in helping to account for this continual transformation and extension of meaning. And it is largely against this background of a recognition of the fluidity of language and the role the various ill-defined contexts play in maintaining this fluidity, that the inadequacy of the basic metaphor can be viewed.

A glance at the way "system" is used in mathematics shows that to treat an object of study as a "system" is to search for a description of the object's internal coherence, a description that is as comprehensive as necessary or as possible. More important, according to the procedure of mathematical thought, this description is made after a process of abstraction in terms of a limited number of formal properties which, it is assumed, will reveal the essential "design" of the object. In an empirical science, the particular abstraction chosen is either confirmed or disconfirmed experimentally. Problems with the notion of evidence in Chomskyan linguistics

indicate that what might, following the natural sciences, have been called a "legitimate idealization" of the object, is perhaps after all only a rough approximation. And in the case of literature, it might well be asked what the value is of the sort of abstraction so important in mathematics and the mathematically based sciences. Surely it is the "burdensome and irrelevant detail" so fruitfully avoided in mathematics which constitutes the complexity and value of the literary text. A claim that any detail is "burdensome or irrelevant" in an effective work must surely be misguided.

The concern with "system" invites as well a description of the properties and relations, of the internal coherence, that is completely explicit. The value of comprehensive and explicit description in language-study is dubious (that is, if its achievement were ever to be possible, were it to escape collapse under the weight of its own complexity); and is even more certainly out of place in literary studies. If a telling phrase can express an intuitive grasp of the work, what is the point of making explicit the grounds of that intuition in the structure of the work? In mathematics, "systematization" served, and still serves, a purpose beyond mere "making explicit". It is hard to imagine what that further purpose might be in literary studies.

Related to this concern with a purely internal

coherence is the lack of concern with questions about relations to an "external reality" (a lack of concern understandable, as was demonstrated, in the context of mathematics). This has been shown to manifest itself in an interest in language as constituted by signs rather than symbols; and what is left unaccounted for has been suggested. Put perhaps over-succintly, this may be described as the meaning an ill-defined but all-important experience of life infuses into language, a life, of which, to make the matter perhaps inextricably complicated, language in its discriminating power is a crucial part. In the study of literature, this limitation manifests itself in ways more pronounced, and I believe, tends to make the products of the use of the basic metaphor less than interesting. Questions of the reader's situation are ignored, as are those of the author with relation to his culture, to both his specifically literary tradition and the more general bodies of thought available to him at his time, and also to the prominent and perhaps universal features of human experience. It would seem unlikely, moreover, that these contexts (pace Goldmann) could be precisely specifiable, so that the search for a definition of these relations in particular instances is a question of delicate judgement, rather than a description of "isomorphisms". The part played by "context" in making this seem the case is of obvious importance.

But apart from turning attention from questions such

as these, the use of the metaphor also invites a limitation in the response to the language of the work (though, no doubt, the larger limitation is a result of the limitation on the level of language). This point may again be made by referring to the idea of "context". In formal systems, meanings may be considered unitary (with the result that only formal aspects need be examined), since semantic ambiguity and all vagueness of outline have been removed by deliberately and rigorously controlling the context in which any element is to be understood. This is obviously not parallel to the situation of language in the literary work, where words bring ambiguities they have developed in past use and which the new context may well add to, rather than limit. Put very briefly, the contexts which any element of language in daily use or in literature may enter into or evoke are far from being clearly-defined.

Finally, as this essay has concerned itself solely with the limitations and inadequacies of the "system" metaphor in literary studies, perhaps something ought to be said to relieve this sense of absoluteness. There is, no doubt, a place for thinking of a literary work in terms of "system" and "structure". Any mental grasp of a work will be in terms of patterns perceived, and any gestalt so formed will have its skeletal structure. And detailing this structure (for which the language of the formal system is admirably suited) is no doubt a useful aid to both understanding and memorizing. But

hypostasizing what is merely a record of a temporally contingent attempt at understanding, or what is an ad hoc device useful in the search for a fuller understanding of the work, seems to be of little value.

Related would be an answer to questions about an envisaged alternative. Black has written on the subject of analyzing metaphor:

I have no quarrel with the use of metaphors (if they are good ones) in talking about metaphor. But it may be as well to use several, lest we are misled by the adventitious charms of our favorites.  
(1954, p. 286)

And the same, I believe, may be said about the language best used in referring to a literary work. A work surely does have its "structural" aspect, along with its "organic" aspect and others. But the error, I believe, comes with treating one aspect as true of the work to the exclusion of others. Which amounts to treating one metaphor for the work (to the exclusion of others) as providing a literal vocabulary with which the essence of the work can be revealed. Perhaps, with regards to this language of referring, what is best, in the last analysis, is a language sensitive to the inadequacies of each of its metaphors, a language which does not take its metaphors solemnly as literal truths, one, in other words, which does not let any one of its metaphors "harden" into implying serious ontological commitment.

## APPENDIX A

A few points can usefully be made concerning the semantic component of a generative grammar - in this case, as conceived of by Katz. (See especially Katz (1972).) The approach is in harmony with the general approach characteristic of Chomskyan linguistics. A language comprises a set of (unitary) sentences. These are in turn composed of what can in the last analysis too be conceived of as units. In the case of Katz's semantic component, the constituents immediately involved in the formation of a sentence are meanings, which can in turn be analysed into senses, which in turn can be analyzed into what are represented as semantic markers (cf. for example, Katz (1972), pp. 36-37). The meaning of a sentence is thus (ultimately) simply a function of these basic units of which it is composed. Of course, it would be unlikely that there would not have been objections to this account; and certainly the following questions (among others) are going to have to be answered satisfactorily before the idea of the "semantic component" becomes credible. Is it possible to avoid verbal context in an account of a word's meaning? On this count, Cohen and Margalit (1972) provide a neat and exact argument demonstrating that according to the componential analyst's view of language, metaphor is impossible. Second, is it possible to ignore situational context in an account of a word's meaning?

This can be related to the question: What non-arbitrary distinction can be made between "knowledge of a language" and "knowledge of the world"? Martin (1975, especially ch. 5) gives a good account of some of the problems involved here. To illustrate, one might ask what semantic features, apart from the most obvious (such as "human", "female", etc.), are to be assigned to "woman" in order to ensure that the following sentence is, in Katz's sense, "anomolous": "That woman over there - she swam 120, 000 miles this morning". And while on the subject, one cannot help noticing that none but the most banal words are used in illustrations of componential analysis: an analysis into semantic features of the phrase "semantic features" would perhaps be revealing. And in the light of the problems pointed to in these two questions above, one might ask the third: In what non-arbitrary way may meanings be precisely defined? Bolinger (1965) asks this question and criticizes (reasonably, I believe) some of Katz's theoretical vocabulary as upholding impossible distinctions. Weinreich (1966) is quoted in Katz as making a similar criticism. Katz's reply (p. 60) is as unsatisfactory as it is extraordinary. He writes, "By parity of argument, one might hold that the distinction between virtue and vice, truth and falsehood, beauty and ugliness are of rather dubious theoretical usefulness since these are notoriously difficult to validate empirically". While "beauty" and "ugliness" may be the objects of

theoretical (scientific?) discussion, it is surely absurd to think of them as ever being employed as terms in the body of a theory (scientific!) attempting to account for some or other phenomenon.

## APPENDIX B

Following is the modified version of the 1609 Quarto text of Sonnet 129 that Jakobson uses in his analysis. The two important emendations are marked, as in his text, with square brackets.

Th'expeuce of Spirit in a waste of shame  
Is lust in action, and till action, lust  
Is perjurd, murdrous, blouddy full of blame,  
Savage, extreame, rude, cruel, not to trust,  
Injoyd no sooner but dispised straight,  
Past reason hunted, and no sooner had  
Past reason hated as a swallowed bayt,  
On purpose layd to make the taker mad.  
Mad[e] In pursut and in possession so,  
Had, having, and in quest, to have extreame,  
A blisse in prooffe and proved a[nd] very wo,  
Before a joy proposed behind a dreame,  
    All this the world well knowes yet none knowes well,  
    To shun the heaven that leads men to this hell.

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