# Towards a Sensible Semiotics

PETER GODFREY-SMITH*

## I - Introduction

The structuralist movement thought that many diverse aspects of social life could best be understood by viewing these phenomena as comprising certain kinds of systems. I will call these systems autonomous differential systems. (This term will be explained shortly). The first type of social phenomenon to be analysed as an autonomous differential system was natural language, originally by Ferdinand de Saussure. His methodology came to dominate twentieth century linguistics, and later many other phenomena came to be analysed as autonomous differential systems, including myth, fashion, food, music, films, kinship systems, and literary works. Structuralist methods also guided economics, sociology, and other social sciences. For sometime everywhere we looked there were autonomous differential systems. Today, however, people are much more wary. Instead, we are urged to de-construct our thinking. We live in the age of post-structuralism.

The thesis of this essay is that a considerable amount of what the original structuralists said was true. There are a fair number of autonomous differential systems, or interesting approximations to them, in the world. There are social phenomena, including aspects of language, structured very much as Saussure and his successors thought. Further, facts about the structures of these systems are perfectly objective and open to scientific scrutiny. However, the structuralists made many mistakes too. They should never have seen their ideas as having direct metaphysical consequences, for instance. They also went wrong on a central matter: many aspects, especially the central communicative aspects, of natural language don't comprise autonomous differential systems. Language is, for the most part, a different sort of system. The much-maligned 'naming' approach to the semantics of natural language is correct.

The following section explores the idea of an autonomous differential system and looks at simple examples. Section III takes on a more complex case, in more detail - low-level analysis of music. Section IV considers, in the manner of Section II, some systems which aren't

* *Peter Godfrey-Smith graduated in 1987 with first class honours and the university medal in Philosophy. He is now reading for a Ph.D. at the University of California at San Diego.* *An earlier version of this paper appeared in a Sydney undergraduate journal in 1986.*

autonomous differential systems. This introduces Section V, which argues that language is also a different kind of system. These arguments are not supposed to attack many of the central guiding ideas of structuralism. There are even ways of modifying parts of the structuralist corpus to take care of some of the problems I raise. The essay ends (Section VI) with a discussion of these.

## II - Systems

Structuralists and semioticians are famous for their fascination with systems. The system-seeking strategy is a simple idea - that some things operate in our lives not as independent things, but in groups of interrelated things. There is an immediate problem, of course; anything can be related to anything, if we choose to look at it that way. We could devise a 'system', that included Cicero and Australia II as its elements, if we chose. But this would be a particularly uninteresting and second-rate system, because the strategy of viewing its elements as linked has no explanatory power. We should not posit structure gratuitously, only where it helps us to discern a pattern, to formulate the laws governing otherwise incomprehensible phenomena. Modern critics accuse the structuralist enterprise of vacuity, on the grounds that one can find structure anywhere if one looks hard enough. The right general reply to this is the methodological principle just expressed. Indeed there are systems anywhere you look, but only the ones with explanatory power are respectable. The problem, of course, is to tell real explanatory power from bogus - the problem is more relocated than solved. But progress has been made in such a relocation. The problem about explanation is one we had already.

The idea that many diverse aspects of social life are systematic has taken us part of the way to the structuralist idea. The next important idea is that of an (explanatorily) autonomous system. An autonomous system is one that is self-contained, or, to use Piaget's word, 'self-regulating' [1]. The system is governed entirely by its own structural laws, principles which make no refernce to items outside the system. Some clarification is needed at this point. No structuralist, or at least no sensible one, would deny that there are some links between elements of systems like language and music, and things outside the system; for it is part of the structuralist programme to investigate how systems like language affect extra-systemic things like political and economic life. There are no real autonomous

1. J. Piaget, *Structuralism*, London, 1971.5-16. T. Hawkes, *Structuralism and Semiotics*, London, 1977, p.16.

systems in society if autonomous means causally isolated, or some such notion.

What must be meant by autonomous is something narrower. Systems are explanatorily autonomous if understanding how they usually and normally operate - under assumptions about the context of the system - involves only knowledge of internal structural laws. Perhaps the right way to express it (suggested to me by Fiona Cowie) is to say that external factors affect which system is manifested, and how the system affects other aspects of our lives, but the functioning of the system itself is autonomous.

A good first illustration is the notion of a formal system, as understood in logic, mathematics, and computer science. A formal system is simply a set of symbols and a set of rules which prescribe how to get from one string of symbols to another. These systems can have all sorts of physical realizations; they can exist on paper (in many different notations), in the circuits of computers, and in people's minds. According to Claude Levi-Strauss they are realized in myths. Despite this diversity in realization, an understanding of a formal system only requires that one understand structural rules which are internal to the system.

The last key concept of this section is that of a differential system. Again formal systems are a good illustration. We saw that these systems display great diversity in their realization. This prompts the question: what makes something a particular element of such a system? In all the differently realized instances of, say, a simple predicate calculus, construed as an uninterrupted formal system, what determines that all the "Ex"'s are the same part of the system? The answer is that this is a differential system, a system in which elements have no independent, positive identify or status, but get their identity from their relations to the rest of the system. The elements of such a system are:

> ...defined not by their positive content but negatively by their relations with the other terms of the system. Their most precise characteristic is being what the others are not.

What makes something the letter 't', to use Saussure's example, is just that it is distinct from the other letters. A 't' can be on a page, on a screen, or in a sequence of short and long flashes or beeps, as long as it is known not to be an 'a', not to be a 'b', etc. These are systems in which there are differences *'without positive terms'*[2].

2. Ferdinand de Saussure, *Course in General Linguistics*, intr. J. Culler, London, 1974. 117-20.

In summary, what makes a system autonomous is the fact that understanding it requires finding principles which make reference only to items internal to the system, and what makes a system differential is the fact that the identity of an element of the system is a matter purely of its relations to other elements. The notion of an autonomous differential system is the central theoretical idea in structuralism, as far as I can see. The structuralist methodology in social science is, centrally, the location and description of autonomous differential systems.

Saussure's favorite, and now famous, example of an autonomous differential system is the game of chess. Almost anything, no matter what material, can be used to play chess. Chess is a form, not a substance. Chess is autonomous, in that to understand the game it is sufficient to know the principles of chess only, principles which make reference only to the (differentially identified) elements of the chess system. Notions like 'check' and 'castling' are defined purely relationally, and by internal relations only. Chess, like language, has syntagmatic and paradigmatic dimensions. It is syntagmatic in that a game unfolds linearly, through time, and this progression is governed by chess's own structural principles. Chess is paradigmatic in that each move involves a choice between a definite range of admissible alternatives.

The autonomous and differential nature of systems like chess can be well illustrated by looking at examples of things which aren't autonomous differential systems. Saussure uses the example of suits, and of what determines the identity of a suit - 'Here we have a material entity that consists solely of the inert substance... Another suit would not be mine regardless of its similarity to it'.[3] A more sophisticated example, this time of a genuine system which is not autonomous and differential, would be the system of chemical elements, and the periodic table. To a non-chemist like myself, this system can initially look like an autonomous differential system. But what makes something an atom of hydrogen, or sodium, is not its relation to the rest of the system, it's what it is made of. Hydrogen atoms have one electron and one proton, and we don't need to take the other elements into account at all. Unlike an autonomous differential system, new elements can be - and have been - added to the system without affecting the identity of the other elements. This can't happen to an autonomous differential system; one can't put new pieces, or new squares, on a chessboard and leave the original system intact.

We will now look at a case in which the structuralist strategy yields genuine insight into a complex system. I will also try to show that structuralist methods are often most applicable at a somewhat lower level of analysis than is often thought.

3. Ibid., p.109.

## III - Music

One of the surprising things about structuralism is the fact that although Saussure, Jakobson, Barthes and the rest didn't seem to intend this, and although it still doesn't seem to be fully appreciated, almost all the central claims structuralism makes about language are exactly true of most western music. There are plenty of uses of musical analogies in the structuralist literature, and concrete analyses of music within the structuralist framework. But there doesn't seem to be an awareness that, especially on low levels of description, the classical Saussurian picture of language - synchronic/diachronic, langue/parole, syntagmatic/paradigmatic, language as form not substance - applies more, in fact, to certain music than it does to language.

This is particularly clear at one of the lowest level systems of music, the scale. Almost all western music is based on one of a handful of different types of eight-note scale. A lot of twentieth-century music has tried to break out of this framework, and there has also been music less self-consciously written outside it - notably some American blues. But the standard scales, especially the major scale, still form the tonal basis of most mainstream western music, both serious and popular. So let us now ask: what is a major scale? A major scale is this:

(tonic)

1st → 2nd → 3rd → 4th → 5th → 6th → 7th → 8th

T T ST T T T ST

A major scale is a pattern of relations. You can start on any note (any frequency) at all, and if you build up the successive notes according to the pattern above, the result is a major scale. 'T' (tone) and 'ST' (semitone) designate units of difference between notes. The 'T' gap is twice as big as the 'ST' gap. The pattern can be realized by many series of notes:

C, D, E, F, G, A, B, C,
F#, G#, A#, B#, C#, D#, E#, F#
B♭, C, D, E♭, F, G, A, B♭,

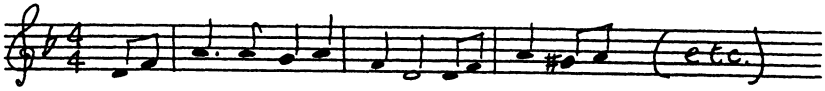
- all they have to do is fit the pattern.

The major scale is an explanatorily important structure, because the pattern is psychologically salient. All major scales have a distinctive sound. The vast majority of people couldn't tell you which major scales

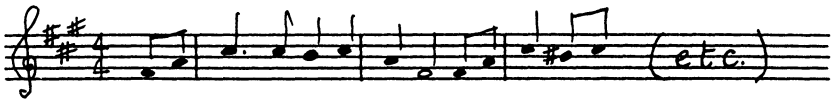
they hear, though many could identify the distinctive major pattern. If we want to understand how music operates and affects us, it is not the particular notes, the particular frequencies that matter, but the relations between them.

This is true when we view music at higher levels, as well: at the levels of the chord sequence and the tune. Two instances of the tune 'St. James Infirmary' can have entirely different notes in them. What makes them the same tune is the fact that the mathematical relations between the notes are the same:

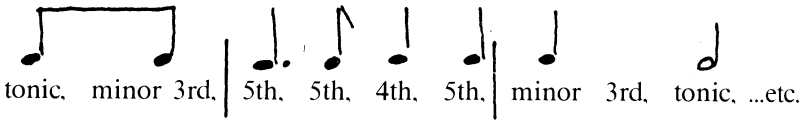
St. James Infirmary in D minor




St. James Infirmary in F# minor




Here is the real transcription of 'St. James Infirmary', the pure pattern of relations laid bare:




This is the 'deep structur'e of 'St. James Infirmary'. Whatever note you start on becomes the tonic, and the other notes are specified in terms of their mathematical relations to the first.

Music has a paradigmatic dimension in that the significance of each actual note in this tune is a matter of its relations to the other possible notes that weren't chosen. If you are told that the second note of a tune is an F, without being told what key the tune is in, you know nothing about how that note works in the tune. If you are then told that the tune is in D, you can work out what the F is doing; it's a minor 3rd, and will most likely give a 'sad', characteristically minor, sound to the first phrase. But you don't need to know the actual notes to know this. If you are told that the

second note is a minor 3rd, or that the second note is three semitones above the tonic, you can know how it will sound, whatever key the piece is in. And if you want to analyze what the second note is doing, you go about this analysis by contrasting the actual note, the minor 3rd, to the other possible notes that could have taken its place. You contrast it to alternatives specified in terms of their relations to the tonic.

## IV - Systems with Hooks

One of the more important mistakes of the structuralist movement is the tendency to assume that its success in linguistics and anthropology assures that *everything* is an autonomous differential system. This mistake seems to be behind structuralism's frequent excursions into metaphysics. For instance,

> [Structuralism] claims that the nature of every element in any given situation has no significance by itself, and in fact is determined by its relationship to all the other elements involved in the situation. In short, the full significance of any entity or experience cannot be perceived until it is integrated into the *structure* of which it forms a part. [4]

According to Hawkes, the structuralist achievement in certain social sciences shows that everything must now be understood on that sort of model. People like Saussure are supposed to have hit on a universal feature of reality - '...the nature of every element in any given situation...'. But what reason is there for thinking this? Why should success in linguistics and literary studies have anything to do with the other sciences and the nature of reality? I have encountered some structuralists who have rejected Hawkes' ideas on this point. They regard him as an overenthusiastic and oversimplifying commentator, and propose a more limited domain for structuralism's application. This view is more plausible, but many semioticians must reject it, because were they to accept this, they would have to turn in their licence to practise metaphysics. Clearly, for the claim that structuralism vindicates some relativistic metaphysics to have any chance of being true, structuralism must be applicable to more than the social sciences.

We have already seen that chemistry, at least, of the 'natural' or 'hard' sciences, seems to be the very opposite of an autonomous differential system. The same seems true of the bulk of physics. Reference is often made to twentieth century physics as a vindication of the structuralist outlook. [5] I can't imagine how this is supposed to work. Even granting

4. Hawkes, p.18.
5. Ibid, p.17.

that Heisenberg's Uncertainty Principle, Bell's Theorem, or the Two-Slit Experiment may have some metaphysical - even anti-realist or relativist - ramifications, it is hard to see how the particular structuralist way into these positions is aided by the physical results. Quantum mechanics is not a language-like or semiological system. The Two-Slit Experiment may be an odd thing but the electrons or photons and the crystal apparatus used in it are nothing like elements of an autonomous differential system. There are no subatomic syntagms, in any explanatorily useful sense. So even if modern physics is a route to some metaphysical position, this has nothing to do with semiotics.

So it is hard to see how structuralism could have the kind of universal application required for it to have metaphysical consequences. The general place of the structuralist strategy within the sciences is plausibly located by Devitt and Sterelny:

> The relational view of the world has some plausibility in linguistics and in the social sciences in general. It is reasonable to think, for instance, that in economic explanations we should abstract from the nature of particular capitalists and workers, focussing instead on the relations between them imposed by the capitalist system. But what about the world of the natural sciences, the *natural* world? The world of stones, trees, cats and so on cannot be merely relational. Indeed, it is this natural world of objects - particularly people and their output - that stand in the relations that are the focus of those social sciences. [6]

Probably, there are lots of phenomena where the structuralist strategy has next to no application. The accompanying deflation of structuralism's metaphysical pretensions is important.

The rest of this essay is more concerned with a kind of system which is something of a hybrid, neither purely autonomous and differential (like chess), nor purely non-relational (like chemistry). In cases of this sort, internal relations are one important factor in determining how the system works, but there are also important links between elements of the system and the things outside it. A particularly clear case of a hybrid is the money system. The next section argues that language is also a system of this type.

What is it to be an Australian dollar? What is an Australian dollar worth? How can we best investigate how Australian dollars operate in our lives? Clearly, part of our strategy for answering these (extremely

6. M.Devitt and K. Sterelny, *Language and Reality*, Oxford, 1987, p.219.

important) questions will involve looking beyond dollars as concrete, material objects to the role of dollars in a complex system. We will then find ourselves looking to the internal relations between elements of the system; we learn something about the place of the dollar when we learn that it is equal in value to 100 cents, for instance, and we learn something about both these notions when we learn that it is equal to $0.64 American dollars. Clearly, facts like $1=100¢ are essential to the concept of a dollar. If $1=500¢ then we are using either 'dollar' or 'cent' in a new sense. If we change this sort of feature of the relations between elements of the money system, the elements themselves change. Part of the identity and value of parts of the money systems, like the identity of the elements of chess, is comprised by internal relations.

But the account of the dollar in terms of relations to the rest of the money system is not the whole story. Dollars have links to things outside the system as well. The 'value' of a dollar is not exhausted by its relations to other money units, it also depends on its relations to bread, beer, and labour. If you want to understand how dollars operate in social life you need to know what a dollar can buy. In exactly the same sense that external relations are unnecessary for knowledge of pawns, nouns, and chords, external relations are necessary for an understanding of money. [7]

These hybrid systems have internal structure, but they are systems with hooks, attached to the world outside.

## V - Language and the World

According to structuralism, all the central aspects of language are best analyzed on the autonomous differential system model. Language is an autonomous differential system with respect to its phonetics, syntax, and semantics. Thus, the phonetic differences that comprise phonemic differences are arbitrary and relationally defined. With syntax, what makes something a noun, for instance, is how it relates to other sorts of words; nouns are what combine with verbs in certain ways. With semantics, the meaning of a word is purely a matter of internal relations - its links to other words within the linguistic system. The application of the structuralist strategy to semantics is a rejection of the referential view of language, the view that language has explanatorily important links to extra-linguistic entities.

7. Jacques Derrida, *Of Grammatology*, tr. G.C. Spivak, Baltimore, 1976, p.57 quotes a passage from the structuralist linguist Hjelmslev which is close to this application of the money example, although a different moral is drawn.

With respect to phonetics, structuralism seems to have been a success. It was the strategy behind the development of the successful 'binary feature analysis' in phonemics. The bulk of transformational-generative grammar has also been carried out under the structuralist banner. Structuralism seems at least partly the right approach to these two fields. But the study of semantics is importantly independent of phonetics and grammar. There is no inconsistency in accepting the structuralist approach to phonetics but rejecting its semantics. Systems can 'realise' or 'underly' systems of quite different kinds. We can ask independently of all phonetic and syntactic questions whether language, from the semantic perspective, is an autonomous differential system or not.

The rejection of objective referential links between words and the world - or at least a downgrading and disregarding of them - is explicit from the foundations of semiotics.

> Some people regard language, when reduced to its elements, as a naming process only - a list of words, each corresponding to the thing that it names.... This conception is open to criticism at several points. [8]

This idea has continued to be a prominent feature of structuralist approaches to language. And the recent demise of many central features of structuralism has not seen any change of mind on this point; Derrida and (late) Barthes are just as hostile to referential relations as Saussure was. I will locate five different reasons for semiotics' denial of reference.

*(1) No Need.* First of all, the structuralist may argue that there is no need to bring in referential relations when explaining how language works. According to the Saussurian, the meaning of a word is perfectly well explained by looking to its paradigmatic and syntagmatic relations, and considerations of parsimony are then ample reason for rejecting reference. As Hawkes put it:

> The word 'dog' exists, and functions within the structure of the English Language, without reference to any four-legged barking creature's real existence [9].

I will reply to this charge below.

*(2) Suspect Psychology.* According to Saussure, the referential view of language comes in a package with some implausible psychological

8. Saussure, p.65 (Part 1, Chapter 1, Section 1).
9. Hawkes, p.17.

assumptions: 'It assumes that ready-made ideas exist before words', when, rather, 'our thought - apart from its expression in words - is only a shapeless and indistinct mass.... There are no pre-existing ideas, and nothing is distinct before the appearance of language.' [10]

This charge can be handled more quickly. There is no reason at all why the referential view of language should make these assumptions. Indeed, many current referential theories of language accept the idea that thought *is* carried out in a language-like code. Formulae of the inner code are the initial bearers of semantic properties, and public language sentences derive their reference from those. [11]

*(3) Denial of Singular Terms.* Somewhat more obscurely, some have denied that there exist such things as singular terms. The referential view of language doesn't strictly need there to be singular terms (on Russell's theory, for instance, singular reference is reduced to general). But it certainly goes most naturally with the view that there are. A singular term is a word or expression that refers to one thing only: one person, one object, one event. Theories of singular terms are these days often the foundations - and always the paradigm and least problematic case - for theories of reference [12]. Singular terms are also important to issues concerning translation.

One encounters the denial of singular terms in Jakobson, for instance:

> Pierce's semiotic doctrine is the only sound basis for a strictly linguistic semantics. One can't help but agree with his view of meaning as translatability of a sign into a network of other signs and with his reiterated emphasis on the inherence of 'general meaning' in any 'genuine symbol... A symbol cannot indicate any particular thing: It denotes a kind of thing...', (*Collected Papers* 2.301).

According to Jakobson, even a proper name has fundamentally a general meaning. 'Napoleon' looks as if it refers to one determinate person, but in fact we could use it to denote any one of a number of stages in a life, and without context determining which stage is meant, the name is at bottom a general term, 'encompassing all the stages of his life and fate'. [13]

10 Saussure, p.57, 111-12.

11. See S. Schiffer, 'Truth and the Theory of Content', *Meaning and Understanding*, ed. Parnet and Bouverese, Berlin, 1981.

12. See M.Devitt, *Designation*, New York, 1981.

13. Roman Jakobson, 'Metalanguage as a Linguistic Problem', *The Framework of Language*, Ann Arbor, 1980, 87-88.

But this is implausible. The fact that Napoleon's life had a number of stages is no reason at all for saying that 'Napoleon' can't refer to the one person, who had a rather varied life. And Jakobson's view has unwelcome consequences. These 'stages' which are supposed to comprise the meaning of 'Napoleon' are contingent features of Napoleon's life. It is quite coherent to say 'Napoleon possibly could have lost Austerlitz', even that he could have died young, and gone on to do none of the things he is in fact famous for. The best explanation of why such statements are coherent is the view that 'Napoleon' refers to a single person, and this reference is independent of things like who won Austerlitz. But on Jakobson's view, where these sorts of events comprise the meaning of 'Napoleon', such statements of possibility come out as nonsense. I can see no reason for the rejection of the idea of a singular term.

*(4) Imperfect Translation.* One very often hears the idea that if the referential view of language were correct, there would be perfect translation across languages, whereas in fact the Eskimos have some astonishing number of words for 'snow', and the French have words for incomprehensibly subtle sorts of pleasure, and so forth. But this is no real problem either. The referential view can accommodate the idea that different languages group things into kinds differently, causing difficulty translating kind terms across languages. The problems for referential semantics only arise if singular terms are hard to translate. But in fact fewer problems seem to arise here; certainly the most notorious examples of translation difficulties all involve general terms.

*(5) Arbitrariness and Naive Views of Reference.* This final idea is the most important one. [14] Semioticians seem to think that the *arbitrary* nature of the sign tells against reference. Jameson, in a revealing quote, says that the structuralist picture of signs as arbitrary composites of signifiers and signifieds

> strikes down... the apprehension of language as names and naming. There can no longer be any question of such an intrinsic relationship once the utterly arbitrary nature of language has been made clear. [15]

According to Devitt and Sterelny, the word 'intrinsic' is the clue here. Arbitrariness only tells against reference if reference is some necessary, acontextual, natural or picturing relationship. If reference had to be some such relation, then it does indeed presuppose that the signifier/signified

14. My discussion here is indebted to Devitt and Sterelny, op. cit.
15. F. Jameson, *The Prison-House of Language*. Princeton, 1972, p.30.

pairing is not arbitrary. And structuralists seem to assume that this is what reference must be. So language's undeniable arbitrariness makes such relations impossible. We are left with paradigmatic and syntagmatic - internal - relations between words as the sole determinants of semantic properties.

But this is entirely mistaken. There is no reason why reference must be a necessary, acontextual, magical, or resemblance relation. Look again at the money system. The sorts of links language has to objects are similar to the links money has to what it buys. There is no necessary natural, or picturing relation between $1.10 and a packet of fettuccini $1.10 has no fettuccini-like qualities. Nevertheless, as a matter of economic fact $1.10 and fettuccini are linked in important ways. The link is contingent and contextual, but essential for an understanding of the economic system. Money is a system linked to labour, to resources, to a great diversity of goods and services. The links are complex, but entirely unmysterious. Similarly, language is linked with extra-linguistic things. The links are contextual, contingent, and have nothing to do with fitness or picturing, but as a matter of social fact, they're there in the world.

The analogy between the hybrid systems of money and of language is not supposed to be complete. The 'internal structure' of the money system has none of the complexity of that of the language system - which is probably why no one mistakes the internal structure of the money system for the whole story about money. But the analogy is better in key respects than the famous chess example. Chess is a game, something we do just for fun. A chess move, on its own, has no great ramifications outside the world of chess. But language, and money, are very different to this. They're not just games. The movements of money are of huge significance to the world outside the money-system. Similarly, the use of language is causally potent in the extra-linguistic world. Very probably, reference is exactly the feature of language that is responsible for the role language plays in social life. It is the capacity of language to be about things that enables it to figure in the history of those things. In recent decades pressure groups have sought to alter the words colloquially used to refer to people like negroes and homosexuals from words like 'nigger', 'faggot', etc. to less derogatory ones. The use of the derogatory words was alleged to have various adverse causal effects on the communities in question. What was all that fuss - and current fuss over non-sexist vocabulary - supposed to be about, if there are no referential links between words and things? Surely this is a clear case of attention being focussed on exactly the sorts of word/world links I have been talking about. Minorities were being affected by the words used to talk about them. The autonomous

differential system model completely fails to account for this aspect of language. On reflection, it seems downright bizarre that contemporary semiotics, a field seeking to enquire into the social role played by language and other signs, into the effects language has on our lives, should continue to disparage and disregard the reference relation. It is as if a Marxist economist sought to sever the money system from labour.

And there are other positive reasons for looking for a theory of reference. All proper names have the same paradigmatic and syntagmatic relations to other words, but all proper names don't mean the same thing. No doubt the differences between them are (partly) referential. Further, the holism resulting from the structuralist model causes problems with the explanation of language-acquisition and lexical change, as Devitt and Sterelny argue. [16] Language-acquisition is a cumulative process, whereby a child starts out (somehow) with a basic vocabulary and syntax and builds on these, while continuing to speak the same language. But holistic systems don't stay the same system across changes of this sort. Vocabulary items are not held constant when new words are learned. The same problems arise with lexical change. We cannot say, for instance, that one language borrows a word from another to fill a gap in the language - autonomous systems don't contain 'gaps'. Nor can we say that as the new word enters the language-system, all the other elements would necessarily change. All this seems very unlikely.

The structuralist rejection of reference is, then, unwarranted and counter-productive. Language is most plausibly viewed as a hybrid system analogous to money. It is a system with rich internal structure, structure which does contribute to the identity and meaning of words. But words also have links to extra-linguistic things. Words are the bearers of reference.

## VI - Semiotics Naturalized

What remains is some discussion of the sorts of factors which could comprise the reference relation, and then of what semiotics would look like if it acknowledged reference and reference-type links between language and other systems and the world.

I have suggested that the relation of reference is a contingent one not based on any necessary fitness or resemblance. The most promising current attempt to explain this relation is with causal theories of reference.

16. Devitt and Sterelny, pp. 213-18.

These theories see the causal links stretching from an object, through the perceptions and thoughts of speakers, to a sign, as the links that determine semantic properties. [17]. There has been a convergence between one version of the causal theory and an important aspect of structuralist thinking. F. Dretske, in his *Knowledge and the Flow of Information* (Oxford, 1981), explains semantic properties in terms of a complex quasi-causal relation called an 'informational' relation. According to Dretske, anything in the world which has a determinate range of possible outcomes is a source of information. A dice is a simple example. If you can tell which of the possible outcomes at a source is the actual outcome, by inspecting some other object, which also has a range of possible states, then this second thing is a channel of information, or message, about the source. The way the correlation between the message and the source is defined by Dretske is epistemic: a written note is a message about what's happened in the next room if you can tell from the note what's in the room, if the actual state of the note reduces the possibilities in the next room to one. But when filled out, the 'informational' relation is essentially causal: the state of the note is caused by the actual state of affairs in the next room.

That sketch is barely even the bones of Dretske's theory, which is an intricate apparatus, with complex kinds of circularity threatening at every stage. The point is this. Dretske, alone among the new wave of naturalistic semantic theorists (Field, Fodor, Devitt, Stampe, Putnam, Searle...) puts as the keystone of his theory the idea of information as the reduction of possibilities. This is something semiotics has been saying for seventy years - that a sign has meaning because of the other signs that could have been used, but weren't. This is the idea of Saussure's paradigmatic relations, Jakobson's metaphorical mode, and all the other notions along this line. According to Saussure, the function of 'hungry' in the sentence 'I'm hungry' is a matter of its relations to other words that could possibly have appeared after the 'I'm': 'thirsty', 'tired', 'happy', etc. But for Dretske the reduction of possibilities that determines content occurs outside the linguistic system, at the source. 'I'm hungry' has meaning because it enables you to tell which of the possible states of the referent is the actual one. It reduces possibilities at some point outside of language. This is a major difference. But the similarity is important as well: Dretske's extra-linguistic reduction of possibilities is correlated with a reduction of possibilities inside language. The 'internal' part of Dretske's theory, the reduction of possibilties at the 'channel', may well be pure Saussure. It is

17. See S. Kripke, *Naming and Necessity*, Oxford, 1980; H. Putnam, 'The Meaning of "Meaning",' *Mind, Language and Reality* (coll. papers vol. 2), Cambridge, 1975; Devitt, *Designation*.

just that Dretske's internal reduction of possibilities is correlated with external facts.

Dretske's theory is also important because existing parts of structuralist research can be restated, or reconstrued, in his terms. I denied autonomy in the case of language; perhaps there are other systems which have come under semiological scrutiny which aren't autonomous, which are better seen as hybrids like language and money. Perhaps some of the arguments of the last section have a wider application than I have given them. [18] Dretske's theory enables a sort of translation of particular structuralist analyses into a conceptual framework that doesn't require that systems be explanatorily autonomous. Barthes' early work on fashion, menus and soap powder, for instance, is an example. Consider clothes. With respect to some aspects of clothes, the wearer isn't presented with an unconstrained choice. Shoe material is an example - it can't be tissue paper. But shoe colour is different, there are no constraints. We can then say, after Dretske, that shoe colour is a source of information. It can tell you about the wearer. If a businessman's shoes are not-black-not-brown but pink, this says something. What's more, what it says depends on what else he's wearing. Just as for Barthes, shoe colour could signify via its relations (syntagmatic) with the rest of the outfit and relations (paradigmatic) with the other possible shoe colours; for Dretske too, shoe colour, taken in total costumic context, tells us about the wearer. The reduction of possible shoe colours to one actual one reduces, because of causal relations, the range of possible states of the wearer. At each point in an outfit where there is a range of possibilities, a relatively unconstrained choice (in the sense discussed above) there is a message which tells us about the reduction of possibilities at the source, the states of the wearer responsible for the choice. The way the haircuts of Romans in films signify 'Roman-ness' [19] is a matter of the other haircuts the actors could have had, and the way this enables you to tell their Roman-ness (rather than Greekness, Africanness, and so on). Many early Barthian analyses - at least, the sensible ones - can be restated in Dretskian terms. Very likely this applies to a great deal of the classically structuralist work in semiotics. Discarding the obsession with autonomous and self-regulating systems need not affect the basic spirit and goal of the structuralist enterprise, though it is a big break from what is usually said about it. [20]

18. Jameson, op. cit., 109-110, hints at this.
19. Roland Barthes, *Mythologies*, tr. Lavers, London, 1973, 26-8.
20. I owe thanks to Bruce Gardiner, Michael Devitt and Fiona Cowrie for helpful discussions on these matters.