Chapter IX

Nature and Culture

THE EMERGENCE OF SYMBOLIC AND IMAGINARY EXCHANGE

En vérité, comprendre le sens
d'un terme, c'est toujours le
permuter dans tous ses contextes.
LEVI-STRAUSS on Propp's
Morphology of the Folktale

1. *Grammar and Gödel*

The general relationship between Lévi-Straussian anthropology, the
Lacanian reading of Freud, and structural linguistics (principally Saussure,
Troubetzkoy, Jakobson, implicitly mediated by Russian formalists like
Propp), is well known. But the movement in France still called structural-
ism, for which Lévi-Strauss is principally responsible, has long since ceased
to reflect much of a direct link to structural linguistics, which in any case is
under heavy attack. In structuralist literary criticism, for instance, with all
its somewhat pretentious claims to becoming a science of literature, we
find writers either rehabilitating well-established literary positions, or
bringing well-known American critical positions into the French corpus,
or redoing Vladimir Propp's *Morphology of the Folktale* without paying
much attention to Lévi-Strauss's refutation of its formalist, context-
independent presuppositions (Lévi-Strauss, 1960a). Fortunately, just as
Marx was never a Marxist, Lévi-Strauss has never entirely been a struc-
turalist.

From the work of Chomsky and the reworking of Chomsky by his
students (e.g., George Lakoff) it seems probable that structural linguistics
has already made most of the significant contributions it will ever make to
linguistics proper. And although Chomsky himself seems to commit the

same epistemological error as many structuralists, that of trying to separate the subsystems of a coherent whole from each other (separating syntax from semantics, for example), his refutation of the strictly structural position seems to have held good (Chomsky, 1957). Significantly enough, this refutation goes hand in hand with his refutation of the position that natural language can be generated by a finite-state grammar (a Markov process). The theory of grammar as a Markov process is derived from the early development of stochastic theory in information science. Information theory as such, like structural linguistics proper, separates syntax (information) from semantics (meaning) as well as similarly separating language from discourse. The question of the artificial or methodological closure of one part of a coherent system and that of the application of probabilistic analysis to such partial systems is worth dwelling on here.

A stochastic process refers to the lawfulness inherent in any sequence of symbols or events. Those in which the probabilities are fixed and independent of the process itself (such as those involved in considering the letters of an English sentence according to their statistically determined frequency of individual occurrence) are described as zero-memory stochastic sources. Meaningful patterns in the sequence are random and accidental; the system exhibits a high degree of information ('surprise') per symbol and a low or zero redundancy. Those in which the probabilities of the symbols (words, events, letters, etc.) are a function of the symbols previously produced (i.e., a function of context or of the previous states of the system) are called Markov chains.

Both types exhibit redundancy or constraint, terms which are synonymous with pattern and organization in information theory. (The higher redundancy of the Markov process should perhaps be called second-order redundancy, however, since it is supplemental to the redundancy applicable to the frequency of occurrence of its independent symbols. Significantly, second-order redundancy results in a lower information content per symbol and a greater possibility of 'meaning'). The opposite of redundancy is either randomness, where any combination or event is assumed to be unconditioned and equiprobable, or strict determinism, where some combination or event is assumed to have a probability of one. Some Markov processes (e.g., the emission of linguistic messages considered statistically) are further described as 'ergodic': if observed long enough, they will emit sequences 'typical' of the ensemble or repertoire from which they are chosen.

But it is important to realize that although samples of language (*la langue*) can be viewed statistically as a Markov process, the methodological assumptions of such an approach mean that there are no actual senders or

receivers involved (whatever ontological status we assign to them in any given context), no referents to be analyzed or acted upon, no context for the sequence of signifiers, no (diachronic) goals for the system outside the manifestation of its own systemic character, no 'work' to be done (MacKay, 1969: 79–93, 95–6). Thus the *langue* of the Markovian analysis is not to be confused with the discourse or the *parole* of the subject, as it seems in fact to be by some contemporary structuralists. The significant point in this context is that whatever the value of the structural method, as method, in linguistics, the methodology of 'structuralism' as such is epistemologically comparable to that of quantitative information theory.

Recent linguistic research, however, seems to show that semantic considerations have repercussions on syntax at deep levels of the utterance (Chomsky also now recognizes this), which makes the isolation of any level of the linguistic system and/or structure methodologically inadequate. Although major aspects of Chomsky's version of transformational grammar are now being revised by both him and his students, he did show that the Markov process is inapplicable to the grammar of natural language. A Markov process (a finite state grammar) will, if it includes recursive loops, produce an infinite number of sentences. But it will either produce ALL English sentences and many non-sentences as well (like the famous monkey and the typewriter), or it will produce ONLY English sentences while not producing an infinite number of other possible English sentences (Chomsky, 1957: 21–5).

In describing the relationship between grammar and language, we can probably say that there is a hierarchy of sets ('languages') and a hierarchy of corresponding algorithms (sets of instructions, grammars). If the grammar and the language are not to be indentical, a valid grammar must enumerate every possible sentence and no non-sentence, and it must also provide a description of the structure and system under consideration. Postal has shown in his "Limitations of Phrase Structure Grammars" (Fodor and Katz, 1964: 137–51) that the equivalent of the algorithm for a higher set, a context-free grammar, is no less inadequate than the Markov process. Natural language is thus at least of a higher logical type than whatever is produced by such a context-free grammar. But there are sets of a yet higher type, such as the set of the theorems of arithmetic or the set of the algorithms under discussion, for which a corresponding algorithm is logically impossible. Thus no material embodiment of the grammar of such a set, no 'machine' – except a human being – can produce those sets. It has not so far been proved that language is not such a set (Fauconnier, 1971). Thus, before we are ready to make any statements about 'structural', 'linguistic', or 'informational' analysis, we must be

aware that all analyses, since they depend on boundaries and on closure, are subject to Gödel's proof, or to what I call the digital paradox (Chapters V, VII).

2. Information, Meaning, and Redundancy

It is important to distinguish information and meaning. The 'information' of information theory is simply a quantitative measure of improbability, pattern, complexity, or organization. Strictly speaking it is a measure of the degree of (semiotic) freedom, in a given situation, to choose among the available signals, symbols, messages, or patterns to be transmitted (the repertoire), many of which may be entirely devoid of meaning. The smaller the freedom of choice from the given repertoire, the lower the possible information. If all the letters in the English alphabet had an equi-probable frequency of occurrence, the information content of each letter taken singly would be about five 'bits'; on the basis of the probabilities of individual letter frequencies, the content is about four. When the redun-dancy, patterning, or constraint induced by the grouping of letters, words, and ideas is taken into account, the quantity of information per letter drops to less than two bits.

In the technical sense 'information' is unconcerned with the status of the sender and the receiver. They are no more than heuristic devices, the TERMINALS in a message circuit, and thus involve the arbitrary punctuation of what is in fact a circular process. Whether sender and receiver are actu-ally capable of using language semantically is irrelevant to the measure of information.

Meaning, or more accurately here, signification, can be defined (tauto-logously) as the significance of the information to the system processing it. The more any given repertoire is analyzed atomistically, and non-con-textually, the more information, and the less signification, the repertoire has. Individual letters in linguistic messages carry high information con-tent, for instance, but practically no signification, for signification, like meaning, depends upon context, and the more context there is, the more there is redundancy (low information content) in the use of the repertoire.

As MacKay explains in detail in the passage quoted below, any system emitting, receiving, or processing information uses the information to organize and direct the energy necessary for 'work' to be done by, within, or outside the system (which may be a human being, a machine, a cell, and so on). Thus whereas information is a necessary condition for signification, it is not a sufficient one. The important similarities between information and signification lie in the processes involved: both depend upon coding

and decoding, and both depend upon the selection of sequences out of a field of possible sequences. (Cf. Crosson and Sayre, 1967: 3–33, 99–136.)

It is in the sense of power or control over ORGANIZATION that 'information' is legitimately used in the Aristotelian sense of *informare*, for Aristotle distinguishes between form (information) and matter(-energy). The related concept of redundancy is defined by Weaver as "the fraction of the structure of the message which is determined not by the free choice of the sender, but rather by the accepted statistical rules governing the use of the symbols [the repertoire] in question" (1949: 13). Redundancy is therefore a function of syntax.

Technically only in a noiseless channel is it possible to eliminate redundancy in transmission. Otherwise every single error in a given message would change the message into another one. But there is a difference between what we might call the statistical redundancy in the use of the repertoire and the higher-order 'existential' redundancy of human communication. Viewed as an ergodic stochastic process of the Markov type, language is highly constrained by statistical rules which make English from 60 per cent to 80 per cent redundant (depending upon the method of determination used). But the precise redundancy is probably not actually determinable because of the higher-order subjective redundancies involved. To a student of Shakespeare, a message beginning "To be or . . ." involves a repertoire which, however meaningful, is completely redundant (or completely determined, which is the same thing here). There is a difference, which is difficult to characterize precisely, between the *a priori* statistical constraints on a message and the *a posteriori* possibilities of restoring a whole when some of its parts have been lost (which is the usual test for redundancy). Without a high degree of 'existential' redundancy – the constraints of the specific code of communication, codes of behavior, particular lexicons, contexts, intentions, the actual relationship between the sender and the receiver, and so on – there is no signification. Signification must involve shared information; the more sharing, the more redundancy.

I have defined the relationship between QUALITATIVE information (as opposed to Shannon's measurements of the 'amount-of-information') and meaning as essentially PRAGMATIC. The distinction between meaning and signification has been elaborated in Chapter VII. In all communications systems (ecosystems), all information is susceptible to both meaning and signification because it is transmitted by real material senders and receivers, necessarily and essentially linked by the message-in-circuit. Thus one can say that semantics is a subset of pragmatics. Syntactics is simply a measure of the relative semiotic freedom (redundancy) of the

system. We must conclude, therefore, that ALL KNOWLEDGE IS INSTRU-
MENTAL. As Spencer Brown puts it (1969: 1), there can be no distinction
without MOTIVE and the discrimination of differing values.

The preceding definition summarizes that of MacKay, whose 'seman-
tics of the organism' (where 'meaning' covers both meaning and significa-
tion, depending on the context) is worth quoting in full (1969: 95–6):

An organism can be regarded for our purpose as a system with a certain
repertoire of basic acts (both internal and external) that in various
combinations and sequences make up its behaviour. In order that its
behaviour should be adaptive to its environment ["the total world of
activity of the organism"], the selective process by which basic acts are
concatenated requires to be ORGANIZED according to the current state of
the environment in relation to the organism. There are various ways of
picturing this need. In its most basic terms, we may regard what is
required as equivalent to a vast constantly changing matrix of CONDI-
TIONAL PROBABILITIES (the C.P.M.), determining the relative probabili-
ties of various patterns (and patterns of patterns) of behaviour in all
possible circumstances. More economically, we can think of it as the
setting-up of a hierarchic structure of organizing 'sub-routines' to de-
termine these conditional probabilities, interlocked in such a way as to
represent implicitly the structure of the environment (the world of
activity) with which the organism must interact. For many purposes we
may reduce it to the filling-out of a world-map, ready to be consulted
according to current needs and goals.

Whatever our thought-model, it is clear that unless the organism
happens to be organized exactly to match the current state of affairs,
WORK must be done to bring it up to date: work not only in a physical,
but in a LOGICAL sense. This 'logical work' consists in the adjusting and
moulding of the conditional-probability structure of the organizing
system: the formation, strengthening or dissolution of functional link-
ages between various basic acts or basic sequences of acts. The total
configuration of these linkages embodies what we may call the total
'state of readiness' of the organism. Some of them will of course have
purely vegetative functions that do not concern us. What does interest
us is the total configuration that keeps the organism matched to its field
of purposive activity, and so implicitly represents (whether correctly or
not) the features of that field. For brevity, let us call this the ORIENTING
system, and the corresponding total state of readiness the ORIENTATION
of the organism.

INFORMATION can now be defined as that which does logical work on the

organism's orientation (whether correctly or not, and whether by adding to, replacing or confirming the functional linkages of the orienting system). Thus we leave open the question whether the information is true or false, fresh, corrective or confirmatory, and so on.

The AMOUNT OF INFORMATION received by an organism can then be measured (in various ways) by measuring if we can (in various ways) the logical (organizing) work that it does for the organism. I have discussed elsewhere some of the different measures that suggest themselves for different purposes, and we shall return briefly to the question later. Meanwhile it is sufficient to note that they are necessarily RELATIVE measures, since they measure the impact of information on the given receiver. 'Amount of information' measures not a 'stuff' but a relation. The MEANING of an indicative item of information to the organism may now be defined as its selective function on the range of the organism's possible states of orientation, or, for short, its ORGANIZING FUNCTION for the organism. It will be noted that this too is a relation. (It must be clearly distinguished from the ORGANIZING WORK DONE on the organism, which is THE RESULT OF THE EXERCISE of this organizing function. Much confusion is caused by attempts to identify meaning with the change produced in the receiver.)

The central question in the semantics of organisms is thus that of goal-seeking. And since goalseeking is not confined to linguistic behavior, but is a property of all open systems – and indeed defines the function of their information processes – we shall have to be very careful about accepting any theory of social systems which is derived solely from properties specific to language alone. A society may depend upon codes and messages, upon metaphor and metonymy, or difference and opposition, but so does DNA, and DNA is not a language.

3. *Structure and Infrastructure: The Question of the Unconscious*

Since all structural, cybernetic, and systemic theories depend on some conception of an 'infrastructure' or 'primary system' or 'primary process', it is necessary to say something about the 'unconscious'. This ambiguous word is often used as a synonym for the primary process, at least in psycho-analysis and in anthropology. Obviously our neural and humoral informa-tion processes are unconscious, obviously the code (or rules) from and through which we choose linguistic messages is unconscious, as is most of the 'body language' we use at every moment of our life. Our theory of knowledge is unconscious, the processes of memory retrieval are uncon-

scious, our habits are unconscious, our ideology is unconscious, our economic, psychological, and academic self-interest is unconscious, our choice of survival value is unconscious, our phantasies are unconscious, our relationships are mostly unconsciously (over)determined, and so on.

What this list illustrates is the wholly unscientific way in which the word unconscious, at least in the psychological sense, is generally used. Without going into the details of the redefinitions which are obviously necessary (since I shall generally use the term primary process), it is clear that if the term refers to a supposedly Freudian category, it usually involves a gratuitous confusion between what might be called the *Ur-Unbewusste* (the domain of the primal repression), the dynamic view of the unconscious (for which the unconscious is the repressed), the preconscious (the domain of memory and language), the primary process, and what is simply NON-CONSCIOUS. Hidden within these confusions are all sorts of other confusions, including that which equates consciousness with knowledge (rather than with recognition), that which equates conscious with the spoken word, and that which identifies the unconscious with the latent or with the so-called instincts (the id). We hear of the 'Kantian unconscious' in Lévi-Strauss, for instance, which was not what Freud discovered, but which is clearly what Freud was trying to talk about in positing a level of the unconscious which was never conscious in any sense (the primal repression). Or the Lévi-Straussian conception of the unconscious is suggested to be a 'principle of intelligibility', which it certainly is. But, whether we take it from the point of view that without the Freudian unconscious there could be no intelligibility (no human language) or from the point of view that Lévi-Strauss is talking about principles of organization in systems and that all such principles or rules are necessarily and by definition non-conscious, this is not an explanation but a tautology.

The answer to this problem of the unconscious, the preconscious, and the non-conscious, is, I think, a very simple one, and Lévi-Strauss pointed most clearly to it in 1949 in his "L'Efficacité symbolique" (Lévi-Strauss, 1958). (This is translated as "The Effectiveness of Symbols", a rendering which effectively reduces the dynamic processes of the Symbolic order to the atomistic interpretation of the symbol which has so long obscured the interpretation of Freud. Cf. Wilden, 1968a: 249–51.)

In this article Lévi-Strauss equates the unconscious with what he calls the "symbolic function", a universal set of laws which organizes the personal lexicon available to the individual and "thus makes of [this lexicon] a DISCOURSE". (The English version mistranslates *discours* by 'language'. Note that a discourse has a subject – a relation between a sender and a receiver – whereas a language does not.) In other words, the unconscious

is described as a set of rules, and we remember that for Freud the dream, the symptom, the slip of the tongue or pen, and the joke are not the unconscious, but the "royal road" to it. Indeed, the dream is generated not 'in' the unconscious, but by the "regression" of word-presentations THROUGH the unconscious to perception (thing-presentations). In the process, the rules of condensation and displacement distort (*entstellen*) the message (Chapter II).

It is a matter of simple logic to recognize that a rule is of a higher logical type than what it governs. The manifestation of the rule in the phenomenal lexicon of the individual or the social system is thus a commentary on a text; it is a communication about the communication expressed in the rule (a metacommunication) and vice versa, depending on how we choose to define the problem. It is only through an understanding of logical types in communication that we can escape the gross reification of the unconscious by the analytic or bioenergetic epistemology, which mistakenly sets 'unconscious' in opposition to 'consciousness'. Any highly abstract and deeply programmed process is necessarily of a higher logical type than less abstract and more manifest processes. Thus consciousness is of a lower logical type than the unconscious (the symbolic function), and the non-conscious patterns and rules of organization in the brain are of a higher logical type than either the primary process or the secondary process. The natural ecosystem is of an even higher logical type. We can put this another way: the epistemology of a culture or the ideology of a class are necessarily of a higher logical type than their manifestation in any particular 'individual' of that culture or class. Thus the only way in which to understand the processes evident in the collective behavior of those 'individuals' – beyond the level of their Imaginary identification with themselves as skin-bound organisms, of course, they are not individuals in the bourgeois sense – is to seek to formulate the logical typing of the various levels of rules (levels of organization) which created them as 'individuals'. In other words, we must look for the abstract structural frameworks and systemic processes, the codes and constraints, which allow only certain messages to be transmitted in the system. The mistake of all atomistic or organicist anthropology and psychology, and the specious barrier separating dialectical thinkers like Hegel or Marx, and, in some senses, Freud and Lévi-Strauss, from their analytically oriented commentators, is simply that, over and over again, the message is taken as the code. The logical typing of code and message is confused, and the relationship between them is reified

To summarize this point: since the code of the class of 'what is secondary system' is a subset member of the class of 'ruled by primary system',

and since both are members of the class 'ruled by the non-conscious', every 'conscious' manifestation, every 'phenomenon', must be dealt with both in terms of its own level of logical typing and in terms of the higher synchronic levels of logical typing which make it possible. The relationship between higher levels of organization and higher levels of logical typing is inverse: the higher the logical type, the lower the level of organization (complexity). Similarly, the lower the level of organization, the more preponderance structure has over system; and the higher the level of organization, the more 'semiotic freedom' in terms of 'characteristic response' the system under consideration may be assumed to have (Chapters VII, XII).

4. *Lévi-Strauss and Systems Theory*

I have never been personally convinced of the methodological adequacy of what might be called the strictly structural approach in either anthropology or psychoanalysis. In fact the current repetition of the word 'structure' all over the place, like a *cheville* in an Alexandrine, begins to sound rather silly. One is led to ask what has happened to the 'system' and why we do not seem to want to deal with the fact that a structure is either a static framework which is predominant at low levels of organization (whereas at all higher levels, system is predominant) or it refers simply to the given code of a system and not to its evolutionary capacities. The term structure is in fact only employed by Lévi-Strauss at the moment that he is going beyond it. The concept of symbolic exchange, for example, which is central to this paper, cannot be properly called simply structural, for it is an attribute of system, a process. The elementary structures of kinship are not so much structure as they are the components of processes of exchange. It is not the structure *per se* that we are interested in, but the code, i.e., the rules which govern the possible selection of messages from the repertoire of 'symbols' available, and the metarules that govern the selection of metacodes.

There are a number of mistaken analogies in the work of Lévi-Strauss, but I do not intend to dwell very much on those problems here. The analogy drawn between language, social systems, and game theory is one of the most significant (one finds it also in the linguist Hjelmslev), for it indicates the same preference for the static and homeostatic rather than for the dynamic and morphogenic that one finds in early structural linguistics and early information theory. The fact that the game theorists state that their theory does not apply to overdetermined open systems is ignored (A. Rapoport, 1959). As pointed out by Dreyfus (1965), a similar

epistemological error appears in the overweening claims of the workers in the domain of artificial intelligence, who assume associationist, discrete-step, heuristic qualities to be characteristic of the actual processes of decision in human beings (rather than of their simulation), and subsequently design programs in which the non-heuristic decisions are surreptitiously fitted into the program by the analog complement of the digital machine, the human programmer.

It is perfectly clear that the structuralist movement in France is not 'another opinion', but an aspect of and a contribution to a much wider reorganization of epistemology and methodology in the philosophy of science. Lévi-Strauss said as much in 1945, in his remarks about Troubetzkoy's work in phonology in the 1930s, and the text he quotes does not depend for its basis on anything specific to linguistics:

> First structural linguistics shifts from the study of CONSCIOUS linguistic phenomena to study of their UNCONSCIOUS infrastructure; second, it does not treat TERMS as independent entities, taking instead as its basis of analysis the [synchronic] RELATIONS between terms; third it introduces the concept of SYSTEM; . . . finally, structural linguistics aims at discovering GENERAL LAWS, either by induction "or . . . by logical deduction, which would give them an absolute character". . . . The evolution of a phonemic system at any given moment is directed by the TENDENCY TOWARD A GOAL. . . . This evolution thus has a direction, an internal logic, which historical [diachronic] phonemics is called upon to elucidate (Lévi-Strauss, 1958b: 31, 32).

Taken with the critique of "individualistic and atomistic interpretation" which follows the passages quoted, it is clear that not one of the criteria cited is specific to structural linguistics, nor is any one of them specifically derivable from linguistics as such. The criteria in fact describe the main aspects of the twentieth-century emergence of an epistemological change which is so profound, so widespread, and so important as perhaps to deserve the label 'revolution'.

Lancelot Law Whyte has given us an overview of the culmination of this long process of changing emphasis, in a book which, although it misconstrues entirely the actual novelty of the Freudian discovery, nevertheless provides a most useful epistemological analysis of the changes in the philosophy of science (1962: 177):

> This [new universe] is a universe of contrasts, grouped into complexes of relations, with aspects of order and disorder, including change and tendency. . . .
> The stress is on complex systems of changing relations displaying

tendencies towards order and disorder, not on simple unchanging entities. For intellectual convenience, it may be necessary to infer an invisible world of immutables: of gods never directly known, or of one or more classes of persisting atomic particles, to account for the stability of the world of appearances.

Some of these inferred 'atomic particles' may well be the 'invariant laws of relation' of 'structuralism', beyond which systems, cybernetic, and communications theory are now taking us.

It would undoubtedly be interesting to dwell upon the specific contributions of all the various disciplines – from physics, mathematics, and logic, to gestaltism, dialectics, automata theory, information theory, and especially biology – which have been part of this epistemological change. But this is a task of historical analysis for another time and place. All that needs to be said is that the criteria 'unconscious infrastructure', 'relations', 'systems', and 'tendency towards a goal' might have as easily come out of a work on cybernetic theory, communications theory, or general systems theory as out of a revolutionary new approach to phonology. We could trace these criteria to Saussure if we wished, but why not to Freud, to Hegel, to Marx, to Clerk Maxwell, to von Bertalanffy, or to Szilard's solution of the problem of the Maxwell Demon in 1929? Obviously, in such a complex epistemological reorganization as we are experiencing in this century, the new territory staked out by any one discipline, science, or movement cannot be comprehended except in relation to all the others.

The direction taken by the explanatory principles of this radical change in the theory of knowledge can be characterized in a number of different but related ways: from stasis to process, from entity to relationship, from atom to gestalt, from aggregate to whole, from heap to structure, from part to system, from analytics to dialectics, from closed systems to open systems, from causality to constraint, from energy to information, from bioenergetics to communication, from equilibrium theory to negative entropy – in a word, from atom to system and thence to ecosystem.

5. *The Symbolic Function*

> The enigma of the prohibition of
> incest is that it is an answer for
> which there is no question.
> LÉVI-STRAUSS: *Discours*
> *Inaugural*

What follows is not strictly speaking an analysis of the concept of the symbolic function in Lévi-Strauss, but an introduction to its interpretation in

the light of Bateson's 'unit of mind' (Bateson, 1970, 1971a), as well as Lacan's conception of the difference between the Symbolic and the Imaginary (Lacan, 1966; Maud Mannoni, 1967), and the ecosystemic notion that the function of analog communication concerns the long-range survival of the whole (Chapters VII, VIII).

The conception of the symbolic function in Lévi-Strauss involves certain major epistemological criteria:

1 It involves a conception of the unconscious as a 'universe of rules' which are empty of content. These rules are assumed to be similar in some way to those which govern language. (Such a viewpoint destroys the notion of an atomistic unconscious and also liberates us from the Jungian archetypes.)

2 It includes a notion of 'system' as a goalseeking unit or ensemble, a conception which parallels that of cybernetics. (Lévi-Strauss has been influenced by cybernetic theory, partly through the Prague School of linguistics.)

3 It also involves a concept 'of structure which is not a phenomenal given. Structure is the ensemble of laws which govern the behavior of the system. The components thus constrained are to a large degree interchangeable with each other, and do not necessarily derive from the same level of organization as the structure and the system which control or permit their various combinations. Structure and system, in this sense, belong therefore to the domain of INFORMATION, and not to that of the FRAMEWORK of organization, i.e., matter–energy.

4 Lévi-Strauss makes the methodological assumption that what he calls 'symbolic thought' emerged out of the continuum of natural analog relationships, thus constituting a system of communication based on the DISCRETE COMPONENT in the macroscopic domain of communication between human beings.

5 The combinations of the various discrete components are assumed to be of an essentially LOGICAL or LINGUISTIC nature, whether the components are the 'signs' of kinship names or the 'mythemes' of the myth. Lévi-Strauss relates or identifies this process with the phonological laws which turn the 'differential elements', derived from the acoustic continuum, into the so-called 'binary oppositions'.

6 The emphasis is on organization and relationship as such.

7 He further insists on the "total social fact", that is to say, on the context of all communication (cf. in particular his critique of Vladimir Propp in "La Structure et la forme", 1960a).

8 Structure, system, law, organization, and unconscious are intimately

interconnected for him: consciousness does not direct the behavior of the system, nor does consciousness know the structure of the system, unless analysis intervenes.

For Lévi-Strauss, the symbolic function and its expression in the structures of kinship is in some way related to the 'unconscious' structure of the human 'mind' (Simonis, 1968: 169 ff.). It is never entirely clear what he means either by 'unconscious' or by 'mind'. But by using Bateson's conception of the ecosystem as a unit of mind – a set of messages in circuit which maintain the relationship between 'organism' and 'environment' – I think we can cut this Gordian knot. The brain exists as an open system in an essential relationship to the complex 'environment' on which it depends. But in relation to the mind – which is a SOCIAL and not a biological or psychological category – the brain is an entity, whereas the mind is PURE relation. The problem of the relationship between brain and mind is of the same sort as that involved when Lévi-Strauss reduces the woman to a sign (thus confusing female, woman, and sister; confusing energy and information; organism, person, and role; entity and relationship) in the *Elementary Structures of Kinship* (1947), of which more later. But as soon as we conceive of 'mind' as an ecosystemic relationship of communication which involves levels of complexity, we no longer have to worry about where the symbolic function is or ought to be. Since information, minds, subjects, and symbolic functions are relationships, they are nowhere. Nowhere, that is, except in the communication of the message-in-circuit which defines the unit of mind.

There is a reason for Lévi-Strauss's problem with modeling the symbolic function, or the myth, or the kinship system, and for his tendency to locate the source of the model in the brain. For Lévi-Strauss, 'model' seems to mean explicitly only two things: the mechanical model and the statistical model (cf. Simonis, 1968: 172–6). The mechanical and statistical models as such are not in question here, only their application. Both are derived from the closed-system epistemology of classical physics. In physics in general, there is no mediating principle between two types of explanation. One can choose between the precision of ORGANIZED SIMPLICITY (mechanics) and the statistical precision of the study of UNORGANIZED COMPLEXITY (e.g., modern thermodynamics), but classical physics lacks an epistemology and a methodology to deal with ORGANIZED COMPLEXITY. This is the domain of biology, communication, and the human sciences (and possibly that of subatomic physics).

In the study of organized simplicity or of unorganized complexity, the elements (or the statistical aggregation of the elements) are naturally

privileged, for this is an atomistic position. But for organized complexity, the structure or the system as such must be primary. The relations in fact constitute the entities. If the world of physics is conceived of as an aggregate of HOMOGENEOUS elements whose sum equals the whole, the world of the more or less open system is to be thought of as a set of combinations which create HETEROGENEOUS elements (Elsasser, 1966). Not only does the question of organization thus become important, therefore, but also that of properly founding the methodological assumption of the homogeneity of the heterogeneous component of (more or less) open systems (the homogeneity which statistics assumes, for example). It is in effect this question which Lévi-Strauss seeks to answer in introducing his conception of system and structure. For, if it is impossible in the study of open systems to guarantee that the observation of the element or of the component isolated from its context (as in mechanics) will yield scientific, repeatable results, then homogeneity must be sought elsewhere: that is to say, in the RELATIONS between components. And in so far as all contextual feedback relationships in open systems defy 'objective' punctuation (Chapter V), one will not waste one's time searching for a positivistic ORIGIN for the system. (As Korzybski's 'structural differential' puts it, we can only know the differences between 'facts', not the 'facts' themselves.)

Thus, although Lévi-Strauss's actual statements about physics (e.g., 1960b: 14), about models, and about the localization of the embodied algorithm often leave much to be desired, his theory itself, like Freud's, is not bound so much by what he thinks he is doing, as by what he does. When he defines the requirements of a structural viewpoint as assuming (1) a system regulated by internal cohesion, (2) the impossibility of understanding this coherence by studying the isolated system, and (3) the necessity of studying transformations which reveal similar properties in systems which are apparently different (ibid.), he is talking about something quite different from a mechanical, statistical, or thermodynamic system as such. Whether or not biological and human systems may be amenable to explanation through some (as yet unknown) form of quantum theory, until such a theory is developed, we are at liberty to pursue the problem of organized complexity in whatever seems to be the most fruitful way. And there is nothing in Lévi-Strauss which compels us to accept his explicit morphostatic prejudices.

The consequence of the relevance or irrelevance of 'origins' is that we must provisionally pursue our researches by accepting the solution offered by the 'myth of the original Event' (cf. Chapter XIII) in the so-called primitive culture. Thus Lévi-Strauss assumes that, like language, kinship, and culture – and at the same moment – the symbolic function is con-

stituted "in one fell swoop". This somewhat cavalier assumption not only saves us a great deal of time we might spend in trying to answer the wrong set of questions, but it is the epistemological and methodological requirement of any systemic theory, as von Bertalanffy (1968: 55) pointed out in 1945: "While we can conceive of a sum [or aggregate] as being composed gradually, a system as a total of parts with its [multiplicative] interrelations has to be conceived of as being composed instantly." This assumption in no way denies or invalidates such speculations on origins as those of Hockett and Ascher (1964), which do not in any case contradict the Lévi-Straussian position. What it does is to allow us to seek out the PRINCIPLES which differentiate nature from culture – rather than remaining caught up in questions of content – and to try to relate them to all the other observable differences between animal communication and exchange and human communication and exchange.

As is well known, Lévi-Strauss bases the distinction between nature and culture on the emergence of the prohibition of incest. I think we can make this an even more general principle, and say that the distinction depends on the emergence of the socioeconomic organization of digital communication and exchange.

6. *Nature and Culture: Anthropology*

The passage from nature to culture as posited by Lévi-Strauss, depends upon two simple principles: (*a*) the introduction of what can be called the 'law of the distinction of difference': the prohibition of incest, and (*b*) the correlative introduction of the discrete, discontinuous, combinatory component into the non-discrete continuum of nature. We have a Bororo myth interpreted by Lévi-Strauss which explains this introduction of the discrete component, the passage of the continuous world of difference into the discontinuous world of distinction and opposition. After a flood, the earth became so full of people that the sun decided to reduce their number. All perished by drowning in a river at his command, except Akaruio Bokodori (who, like Oedipus, limps). Those who were lost in the rapids had wavy hair; those who were lost in the pools had straight hair. Akaruio Bokodori then brought them all back to life, but accepted only those clans whose presents he liked. All the others he killed with arrows. Lévi-Strauss comments:

> It was necessary that men should become less numerous so that neighboring physical types could be clearly discerned. For if the existence of clans and peoples bearing INSIGNIFICANT or NON-SIGNIFYING gifts were

permitted – that is to say, clans whose distinctive originality was as minimal as one could imagine – then there would be a risk that between two given clans or populations there might be interpolated an unlimited number of other clans or peoples which would differ so little from their immediate neighbours that all would end up by being confounded together. Now, in any domain whatsoever, it is only with the introduction of the discrete quantity that a system of significations can be constructed.

(I shall not argue about the word "quantity" here, but read "component".) He goes on to point out that a system made discrete by the subtraction of elements, as in this and other myths, becomes logically richer, even if numerically poorer (1964: 58–63). The point is, of course, that only systems of discrete components are available to COMBINATION and permutation, that is to say, only such systems can properly be said to have anything equivalent to SYNTAX.

The prohibition of incest is to be explained on exactly the same basis. Whatever is assumed to precede the 'magic moment' of the constitution of this primordial law – and with it, language and society – it must presumably resemble what we now find in the animal world. In labeling the natural prerequisite of society an 'ensemble of procreative units',[1] we note that the procreative unit involves exchange processes, communication, and goalseeking. But these macroscopic processes do not involve discrete components beyond the level of the 'skin-bound organism'. These natural 'components' do indeed enter into combinations with each other, but these are combinations of natural differences (e.g., biological sexuality) in which the information (male, female) is not distinct from its organic marker. The relationship between 'organism' and 'environment' – i.e., between the biological 'individual' and that to which he is related, includ-

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[1] This is often called the nuclear family in anthropology. But this is a notion dependent on an atomistic epistemology which assumes what is to be proved, for it denies what is prerequisite to the emergence of the family as a boundary. It denies the relations within the supersystem of the society which actually generate the family. To make the individual or the individual unit the prerequisite of the system is to constitute the system as an aggregate, or in other words to conceive society on the equivalent of equilibrium models derived from classical physics. The relationships between the 'individuals' of a goalseeking adaptive system are not additive, but multiplicative and fractionative. These relationships are not primarily energy links, but information links. To assume the existence of the 'family' before the existence of the 'society' of which it is a subset, requires an epistemological position derived from, or seeking to justify, a belief in a bioenergetic 'human nature'. One notes that in western culture the nuclear family is indeed the significant unit, since it appears to be the socioeconomic unit of consumption and control.

ing other 'individuals' – has been defined as a relationship of difference (Chapter VIII). The most that can be said of the relation between the sexes or between parents and offspring in the animal world is that their biological 'distinctions' and their temporary competitive 'oppositions' are subsumed under the relation of difference, in such a way that a male is simply a male, a female simply a female, a primate is a primate, and so on.

There is nothing in the macroscopic exchange processes of zoosemiotics which goes beyond the kind of boundaries established by the 'skin', by the 'ecological niche', or by the 'territory'. There are no possibilities of the purely informational or logical combinations of discrete components, dependent on the relationships of logical distinction, opposition, and identity, such as we find in phonology, in kinship systems, in language, and in culture. Although all exchange and communicational processes depend on forms of digital communication, digitalization never represents the primary form or the goal of any natural system. In nature, the analog communication of differences is always of a higher logical type than the digital communication of discrete elements. But this is not precisely the distinction we require here. The distinction between differences in the procreative unit and discrete elements in the family is only true in terms of the RELATIONSHIP between nature and culture, or between animal communication and language, or between use value in nature and exchange value in culture. As long as we remember that distinction and opposition are relational, rather than ontological, categories – except in cultures like our own which confuse the categories of the logical and the ontological (or the 'ontic') – we have no difficulty in dealing with the 'distinctions' and 'oppositions' in the animal world.

It is analog difference which allows the informational relationships between sender and receiver in the natural ecosystem to be constituted, for information is in fact simply transmitted difference. It is the information-in-circuit which ignores the skin-bound 'barriers' between organisms and between 'organism' and 'environment'. Although, as Saussure pointed out, difference is a necessary condition for human language, it is not a sufficient one, nor is difference sufficient to constitute a kinship system. As in the Bororo myth and its interpretation by Lévi-Strauss, a system of signs available to signification depends upon the reduction of the number of elements, the introduction of distinct 'gaps' between them, and the resulting possibility of a very high number of combinations. In other words, the members of the procreative unit have to become LOGICALLY distinct from each other in order for them to become signs (and linguistic signifiers require even more complex levels of distinction, for language is more highly organized – and of a different logical type – than a kinship system).

This is quite apart from the obvious fact that in order to know whom to marry and whom not to marry, you obviously need a nomenclature and a word for 'not'.

Thus the exchange relationships of the family depend upon its constitution as part of a larger whole, the society, and it is usually someone fulfilling the function of the maternal uncle who supplies the necessary CONTACT WITH THE EXTERIOR which provides for the advent of the family in the first place.[2] This contact changes the relationships within the family by introducing, not the differential element (which was already there) but the DISTINCTIVE FEATURE, which is a special sort of bundle of differential elements. And one of the changes within the family, after the event,[3] is that the INDIVIDUAL is retrospectively invented. When female becomes 'sister' or male becomes 'brother', we have in effect a difference which is constituted at a higher level of organization, in other words, a distinction. What is especially significant is that the sign 'sister' or 'brother' not only signifies what it is (a female, a male), but more important, IT SIGNIFIES SOMETHING IT IS NOT (a potential sexual partner or spouse). It would be a mistake in levels of organization to equate this sign with a linguistic signifier (a word always signifies what it is not), or to play the facile game of equating 'not' with absence, but the significance of 'something which stands for something it is and is not' is crucial to the understanding of (how we define) the emergence of culture from nature (and their coexistence).

Above all, the 'sister' or 'brother' who marry someone from another family do not receive a sister or a brother, they receive a man or a woman, a husband or a wife. The sister or brother who are apparently exchanged in the kinship system are never in fact exchanged, for at the moment of exchange they enter a new set of relationships and acquire another designation ('wife', 'partner', 'husband'). (Cf. Lévi-Strauss, 1947: 243.)

This is perfectly logical, for if we are concerned to talk about the FUNCTION of the exchange, it is its symbolic rather than its real function that is important. Procreation can continue in nature without the necessity for the symbolic form of digital exchange. There is no biological reason for the incest prohibition, in fact it is rather the opposite. As Dobzhansky, for

[2] As Lévi-Strauss properly points out, the maternal uncle is not an 'invention' or an 'addition' to the 'family', he IS the family. (Cf. Ortigues, 1966: 72, 81–2; or Wilden, 1968a: 303–6.)

[3] Any emergence of a metasystem changes the logical typing of the antecedent subsystems in the referent system. See Chapter XII, Section 9, and Chapter VII, Section 7. Freud's 'theory of deferred action' (*Nachträglichkeit*), and Derrida's *différance* or "post-script" (Chapter XIII), which is derived from Freud's conception, are essential categories here. The emergence of distinctions in levels will change the distinct boundaries WITHIN the system.

one, has pointed out, the evolutionary unit is not the 'individual', but the 'population', i.e., the 'reproductive community'. There is a biological requirement of a certain level of inbreeding (Dobzhansky's bioenergetic 'reproductive isolating mechanisms'), for otherwise a species would disappear in a mass of its own genetic debris. At the other extreme, as Sewall Wright has said, it is necessary for two or three members of any population to go astray and deposit their genes in another 'gene pool' in order to maintain an ideal evolutionary balance. All this operates perfectly in natural ecological niches without the incest prohibition. As Lévi-Strauss says, the prohibition answers a question nobody ever asked. Once constituted in the form in which we know it, however, the prohibition proved, by its survival, to have survival value as simply involving possible genetic advantages. We can posit that the end of oestrus reduced the sexual competitiveness over females and introduced a new level of possible cooperation in proto-hominid groups because of the new order of possibilities of selecting long-lasting male–female relationships. The introduction of forms of incest prohibition – however and whenever its various forms may have appeared, including unstructured forms of exogamy – thus provided for a qualitatively different form of the organization of information-linkages in the group. The 'binding' of matter–energy by information at more and more complex levels proved – after the event – to have a homeostatic value in terms of stability, and necessarily introduced the possibility of ULTRA-STABILITY (Chapter XIII). One of the necessary products of the regulation of variation is in fact variation itself.

The incest prohibition which constituted digital communication in its symbolic form, is thus the NON-RATIONAL (i.e., analog) basis of the supposed 'rationality' of culture. The 'symbolic function' must imply that 'something' is exchanged, but it implies a SYMBOLIC something (information) rather than a real something (matter). Symbolic exchange is the elevation of the information processes of nature, by emergence, to another level of organization. It is thus both derived from nature and entirely 'non-natural'. Like the 'nip', it involves a primary communication about communication: but instead of "This is play", we have the equivalent of "This is culture, man". (See Section 7 below, and Section 8 in Chapter VII.)

If the function of Symbolic exchange in culture is the maintenance of relationships at a level different from the maintenance of relationships in the natural ecosystem, then the 'symbolic' object of this exchange cannot actually be expropriated or possessed – no more than the 'difference' exchanged in the ecosystem can be expropriated or accumulated. All that is ever accumulated in nature is energy for future use and information (in memory) for future survival. Under no circumstances is accumulation for

the sake of accumulation possible in nature. Similarly, in culture, if the 'sign' or the 'symbolic object' were actually possessed by any member or any family in the system, then the Symbolic exchange would cease, to be replaced by Imaginary exchange, without human relational or survival value. It is not the male or female persons who are exchanged, and we are not concerned with their status here. What is exchanged is the SIGN they RE-present. In our analysis, therefore, we must obey the admonition of Wittgenstein (1945–9: 40) not to confuse the NAME with the BEARER OF A NAME. We must not confuse the sign with the paradoxical 'presence and absence' it represents.

It seems to me that this is altogether a most important distinction and provides further insight into what Lévi-Strauss is talking about. For a sign or a name is information, whereas its bearer is matter–energy. In communication systems it is not entities or energy which are transmitted, but information. The transmission of the information is, however, impossible without the matter–energy markers (like the notches in a key) which bear it (cf. von Neumann, 1958). We can thus rephrase Wittgenstein's admonition in communicational and systemic terms: we should not confuse the information with the matter–energy, the marker, that bears it. Since the whole development of communication theory and general systems theory depends upon the distinction between energy and information, we begin to see some important common elements between the Bororo mythmakers' explanation and cybernetic theory in general. For what distinguishes those who will live and those who will die in Akaruio Bokodori's world is the gifts they bear. THOSE THAT DO NOT CARRY THE REQUISITE KIND OF INFORMATION, THE REQUISITE DISTINCTION, ARE THROWN OUT OF THE SYSTEM. Such is the power of what once was called 'prelogical' thought.

7. Nature and Culture: Zoology

Gregory Bateson's theory of play and fantasy (1955) has already been mentioned in some detail in Chapters VI and VII. The communication about communication 'contained' in the emergence of the nip says something of the order of "This is play". Similarly, the emergence of the 'sister' or 'brother' says something like "This is culture". In the same sense that the nip says 'These actions in which we now engage do not denote what the actions for which they stand denote', the emergence of the kinship name says 'This name no longer denotes what that for which its bearer stands denotes'. The nip and the kinship name denote that some component is no longer what it is, but something identical-but-distinct.

Distinct, that is, not only in LEVEL of logical type, but also from other components of the same logical type.

The prohibition of incest thus sets up the paradoxical metacommunicative rules by which denotation can take place (cf. Chapter VI). Only 'after' the evolution of the communication about the FORM of communication implied in "This is culture", can 'objects' receive denotations. And the *sine qua non* for denotation is a rule about identity, i.e., a word for 'not': "Nature, this is not." The emergence of the digital sign 'sister–brother' both precedes and presupposes the emergence of the 'symbol of negation' itself.

The evolution of the particular form of distinction between energy and information represented by the nip or by 'sister–brother' is precisely what is described in the Bororo myth by the term 'gift'. Unlike a bite, which is simply different from various other behavioral acts of the animal, the nip involves a distinction. One can conceive of a nip as having that kind of boundary around it which distinguishes a sign from other signs. Whereas in the bite, energy and information are one (as in the brake pedal of a car), in the nip the information is distinct from the energy. In other words, the sign (the nip) is distinct from its marker (the mouth) in the same way that the information transmitted by the accelerator pedal of a car is distinct from the matter–energy which bears it. The nip signifies the presence and the absence of the bite, just as 'sister' or 'brother' signifies the presence and the absence of female or male. And whereas the bite is always received in a real sense, like the male or the female, the nip is a primordial symbolic object which CANNOT be received in the real (otherwise it would be a bite). The world of communication of the bite is full of real differences; with the nip, gaps begin to appear, something akin to the zero-phoneme or to the space between one and two. And whatever else the nip may be, it is NO-THING. The nip begins as a real metonymy (a part for the whole, related by contiguity) and becomes a symbolic metaphor (something standing for something else, related by similarity).

8. *Nature and Culture: Economic Exchange Theory*

In the Marxian theory of the constitution of exchange value out of use value, the primary necessity is a 'point of contact' with the exterior:

Objects themselves are external to man, and consequently alienable by him. In order that this alienation may become reciprocal it is only necessary for men, by a tacit understanding, to treat each other as private owners of those alienable objects, and by implication as independent [discrete] individuals. But such a state of reciprocal independence

has no existence in a primitive society based on property in common. . . . The exchange of commodities, therefore, first begins on the BOUN-DARIES of such communities, at their points of contact with other similar communities. . . . So soon, however, as products once become com-modities in the EXTERNAL relations of a community, they also, by reaction become so in its INTERNAL communal life (1887: 87).[4]

It is not necessary to take Marx to task over his (or Lewis Morgan's) ignorance of the function of exchange within the so-called 'primitive' society, for we can read 'procreative unit' for "primitive society based on property in common", and still pick out the central idea that external contact at a boundary which is constituted by the very act of emergence itself, brings about internal reorganization AFTER THE EVENT and constitutes a system of a higher order of complexity. And for this system to emerge, it is necessary that 'objects' be created out of continuous 'realities', that is to say that objects be alienated from each other and become distinct 'facts' (cf. Kojève, 1947a: 372 ff.).

The distinct, alienable object with exchange value is of course logically equivalent to the discrete component of the Bororo myth, to the 'sister' or the 'brother', and to the nip in animal play, for it is the passage from the analog use values of nature to the digital exchange values of culture that both Lévi-Strauss and the Bororo are describing. Whereas a female or a male have only biological use value, a 'sister' or a 'brother' are invested with symbolic exchange value, and whereas the bite is used, the nip is exchanged.

But what is exchange value? Since it is not directly connected to use value as such, and since any object of exchange may be valued in an en-tirely arbitrary way, it is clear that exchange value has something to do with the symbolic function. AT THIS POINT, from our perspective here, use value corresponds to matter–energy, whereas exchange value corresponds to information. The special characteristic of commodities, however, is that one particular commodity of the original circulation of use value (in which objects are simply different from each other) is thrown out of the system to become the Marxian "general equivalent of exchange": this is gold or silver or shells, or some such similar commodity. There is no such general equivalent in Symbolic exchange, although there is exchange value. The general equivalent is characteristic only of Imaginary exchange. The general characteristic of exchange value is that it is the SIGN OF A RELATION

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[4] Note the generation of modified subsystems implied here. Freud speaks of the exogamous function of the incest prohibition and of the necessity of external contact very early in his work (Draft N, 1897, *Standard Edition*, I, 257).

(as in language). But in Imaginary exchange, the general equivalent turns all exchange value into the SIGN OF A THING. Marx expresses this by a striking quotation from Revelation (17: 13 and 13: 17):

> These [i.e., the exchangers of commodities] have one mind, and they give their power and authority to the beast . . . that no man should be able to buy and to sell, save he have that mark, even the name of the beast, or the number of his name (1887: 86).

Whatever other processes are involved, the primordial symbolic function of exchange value is self-evident. As in all cases of Symbolic exchange, the value of the 'symbolic object' is that of a symbolic relation. Outside of that relationship, its values are simply real.

The question of money must be historically related to the emergence of alienated labor, for 'money' in the 'cool' society is more nearly a reciprocal gift like other gifts – that is to say a sign of exchange – than it is sign of a commodity. As long as we distinguish Symbolic exchange value – the sign of a relation – from Imaginary exchange value – the sign of a thing – we have no difficulty in distinguishing between digitalization as a necessary FORM for the constitution of exchange value in general (as Marx says, 'individuation' is the product of exchange), and the actual FUNCTION of exchange in different civilizations. Digitalization is necessary, and presupposes no particular function. It allows both for the analog function of Symbolic exchange and for the digital function of Imaginary exchange. We can further distinguish dominant and subordinate functions in various cultures. There is no need to suppose that all 'cool' cultures exemplify only Symbolic exchange, or that Symbolic exchange does not occur, at subordinate levels, in our own predominantly Imaginary culture.

In our culture, money does not represent a relation between people as does the 'symbolic object'. As the valorization of an ENTITY, money under capitalism represents Imaginary relations between things, and the 'things' it represents are the 'clear and distinct' people who are exchanged – as alienated objects – in the system. Money isn't simply 'like' the solipsistic, schizoid entities we call 'individuals' in our culture, it IS those individuals. It is their general equivalent of exchange. In our society, people represent labor time, and labor time – whether energy or organization – is money. This point is obvious, but it nevertheless has to be made: if money can rent people, then money IS people.

We can give a brief historical example of a similar form of emergence, at another level of organization, within the history of our own culture. In his analysis of the alliance against the feudal nobility between the French monarchy and the middle-class 'officers', drawn from the Third Estate, in

sixteenth-century France, Goldmann (1955) asks whether the 'offices' con-stituting the *noblesse de robe* against the *noblesse d'épée* were actually SOLD to the highest bidder or EXCHANGED for services previously rendered. He concludes that the question as such is irrelevant. The sale of 'offices' only becomes a regular economic institution when this institution has developed a POLITICAL SIGNIFICATION. In other words, only when the alliance between the office-holders (jurists, administrators) and the central power is no longer "implicit or natural", can it be called an economic institution, and the Symbolic relation become Imaginary, or the relationship become digitalized at another level.

The same process is repeated in the seventeenth century, when the originally essentially 'homogeneous' class of 'office-holders' splits down the implicit cleavage between the 'jurists and administrators' (the Parle-ments) and the 'functionaries' or 'commissioners' of the central power, with a resulting opposition between the central power and the Parlements. The absolute monarchy plays a 'politics of equilibrium' through its agents, balancing the aristocracy against the Third Estate. It uses the peasant and other popular revolts as the 'common enemy', the 'outside agitators' to maintain the system in temporary but illusory homeostasis. In the eight-eenth century, the positive feedback of this ultrastable system forces a temporary alliance of the upper and middle classes against the central power, taking advantage of the peasantry and the incipient proletariat as its 'agitators', until one ensemble of messages in the system emerges as the new code: the bourgeoisie (see Chapter XII).

Marx pointed to the Imaginary form of the digital relationship of en-tities in a striking fashion when he compared the relationship between commodities, and between commodities and money, as a mirror-relation of 'body-images' (Marx, 1887: 52): The "BODY FORM" of commodity A becomes the "value form" of commodity B, or, in other words, "the body of commodity B acts as a mirror to the value of commodity A". He adds a footnote which makes explicit the connection with the Hegelian desire for recognition and the Lacanian mirror-stage:

> In a sort of way, it is the same with man as with commodities. Since he comes into the world neither with a looking glass in his hand, nor as a Fichtian philosopher to whom 'I am I' is sufficient, man first sees him-self reflected in other men. Peter only establishes his own identity as a man by first comparing himself with Paul as being of the same kind. And thereby Paul, 'in hide and hair', Paul in his Pauline corporality [*Leib-lichkeit*], becomes entirely to Peter the phenomenal form [*Erschei-nungsform*] of the genus Man.

Marx's 'psychological' footnote is a description of the Imaginary relationship between human beings:[5] the paradoxical relationship of identity (autonomy) and identification (with a model or rival) which generates the paranoid opposition of ego and other in our culture, as opposed to the Symbolic relationship of the 'subject'. The ego is an entity, a commodity in opposition to other commodities, whereas the subject in the sense I use it here is a relation.

One can pursue the constitution and the analysis of the Imaginary throughout literature: Montaigne, Rousseau, Balzac, Stendhal, Flaubert, Dostoevsky, Proust, Svevo. . . . In its sense of specular identification, this Lacanian concept is based upon Freud's theory of narcissism.

9. Recapitulation: Symbolic Exchange

On nous fait du langage des
premiers hommes des langues de
géomètres, et nous voyons que ce
furent des langues de poètes.
ROUSSEAU: *Essai sur l'origine
des langues* (1760)

The conception of the Symbolic as that which maintains relationships is very similar to Malinowski's 'phatic communion', as I point out elsewhere. It is also clearly specified at another level in his *Argonauts of the Western Pacific* (1922: 81–104), where Malinowski describes the Kula 'trade' between various islands off the coast of New Guinea. (This book clearly inspired Lacan's conception of the symbol: Wilden, 1968a: 35, 120.) Along the circuit of the Kula, articles of two kinds, necklaces of red shell (*soulava*) and bracelets of white shell (*mwali*) travel in two great circles, in OPPOSITE directions, between tribes differing in language, culture, and even race. Each of these articles meets articles of the other class on its way around, and is constantly being exchanged for them. These exchanges have no objective or subjective economic value. Although the Kula is accompanied by regular trade and barter for use, the symbolic shells involved are not even used for ornamentation, but simply displayed. Many are too big or too small to be worn. Moreover, Kula is specifically distinguished from barter. All exchanges are reciprocal, and no sanctions are involved in the 'debtor–creditor' relationship which occurs when months or a year

[5] J.-J. Goux has developed this relationship, but from a phallocentric perspective which does not transcend the bourgeois ideology, in his "Numismatiques I, II" (1968, 1969).

intervene between a Kula gift from one partner and the reciprocal return of another gift from the other partner. All other economic and related activities (e.g., canoe-building) are subordinated to the Kula. The 'valuables' exchanged are not related to each other by any 'general equivalent of exchange' as they would be if they were a form of currency. The articles involved in the many thousands of exchanges between partners (one man will have several or many partners in the Kula, depending on his rank) never stop moving for any length of time: they are constantly changing hands.

Thus the circuit of exchange consists of two vast circles or channels along which the 'bits' of information move, each 'bit' of one type constantly being substituted for a bit of the other type. Thousands of partners are provided with dyadic links through the exchange, but the dyads are a function of the circuit as a whole, not of any individual connection. The whole process is like a sort of undulating web where everything moves but all stands still at the same time. This highly complex network of relations is governed by strict communicational rules as regards the flow of the 'symbolic objects' (bracelets move from left hand to right hand and from North and East to South and West, and never in the other direction), but the 'value' of an object 'owed' is a matter of unarticulated reciprocity and mutual obligation, not of convention.

Particularly significant for the concept of Symbolic exchange employed in these essays is that the 'objects' of exchange in the Kula are UNALIENABLE: they cannot be accumulated, expropriated, or possessed. Whatever enhancement of status may be enjoyed by the 'holder' of a particularly interesting *soulava* or *mwali* – one with a particularly interesting history of previous 'holders', for example – this enhancement bears no relation whatsoever to our conception of status involving the possession of material objects:

> . . . Every man who is in the Kula . . . receives one or several *mwali* . . ., or a *soulava* . . ., and then has to hand it on to one of his partners, from whom he receives the opposite commodity in exchange. Thus no man ever keeps any of the articles for any length of time in his possession. One transaction does not finish the Kula relationship, the rule being "once in the Kula, always in the Kula", and a partnership between two men is a permanent and life-long affair. Again, any given *mwali* or *soulava* may always be found travelling and changing hands, and there is no question of its ever settling down, so that the principle "once in the Kula, always in the Kula", applies also to the valuables themselves (pp. 81–3).

We can ignore Malinowski's repeated projection of western economic and sociological values onto the Kula. Although he states several times that the 'valuable' cannot be possessed, he speculates that the origin of the Kula lies in a "deep desire to possess". Like the gratuitous concept of the 'instinct' in biology, zoology, and psychology, this tautologous conception of the origin of the Kula has more of an ideological than a scientific value. It depends on the preconceived assumptions of western individualism, which seek to make individual factors (the social 'atom') account for all social behavior.

On the one hand, nothing is possessed in the Kula, not even the status involved in displaying an object, for it must soon be handed on. On the other, it is the system of exchange which generates the 'desire' to be involved in it. The Kula 'trade' is in fact another specific example of the use of digital information ('bits') to cross boundaries between different systems (different geographically, linguistically, and probably ethnically) in order to link them together in an ecosystemic relationship, one which uses digital information for analog ends. In keeping with the distinction between information and meaning, the bracelets and the necklaces are useless – that is, meaningless – in themselves; they derive their meaning and use from the context and the goals of the whole. Conversely, they have SIGNIFICATION only in the dyadic relations of each exchange (cf. Chapter VII).

This said, since the concept of Symbolic exchange involves the use of the combination of digital or discrete elements for analog ends, I can think of no more effective way of presenting it than in the analog mode itself. *Figures 1* to *4* are representations of kinship relations by means of kinematic graphs which 'translate' the accompanying tables of transformations. These diagrams are derived from André Weil's formalization of some of the kinship systems described in Lévi-Strauss's *Elementary Structures of Kinship* (1949: 257–65). The demonstrations are slightly different versions of those given by Warusfel (1969: 166–70). In these diagrams, the broken line m defines the marriage relationship: any man of clan X may marry a woman of m (X). The solid line c represents the filiation of the children: every member of c (X) is the child of a woman of clan X.

The poetic simplicity of these diagrams expresses the symbolic communicative function of the exchange relationships which are involved far more effectively than the written word. The fact that the elementary structures which Lévi-Strauss sought to codify in his first full-length work, appear to be far less common than he at first supposed is, of course, irrelevant to the demonstration. The reader will see at once that the circulation of the digital components, while based on distinctions (or 'oppositions'

as they are usually called), produces a system dependent on the circulation of information as difference: each diagram thus represents an ecosystemic UNIT OF MIND, the domain of the both–and. The 'symbols' involved correspond to the earliest definition of the term in western culture: *sumbolon*: pact, covenant, communication, LINK.

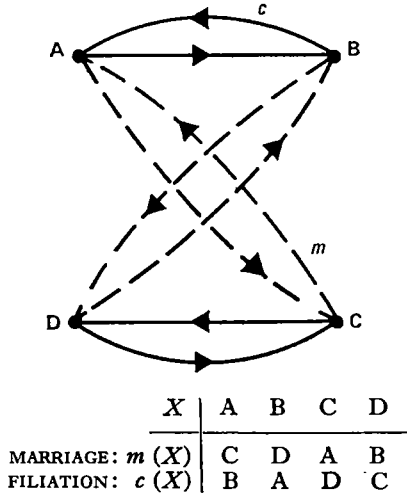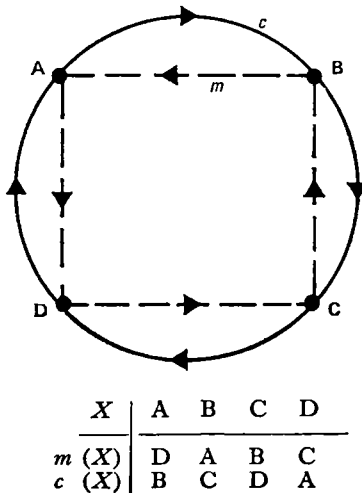FIGURE 1 *The Kariera System (four clans: A, B, C, D)*

X	A	B	C	D
MARRIAGE: $m(X)$	C	D	A	B
FILIATION: $c(X)$	B	A	D	C

FIGURE 2 *The Tarau System (four clans)*

X	A	B	C	D
$m(X)$	D	A	B	C
$c(X)$	B	C	D	A

FIGURE 3 *The Ambrym System (six clans)*

X	A	B	C	D	E	F
m (X)	D	E	F	A	B	C
c (X)	B	C	A	F	D	E

FIGURE 4 *The Aranda System (eight clans)*

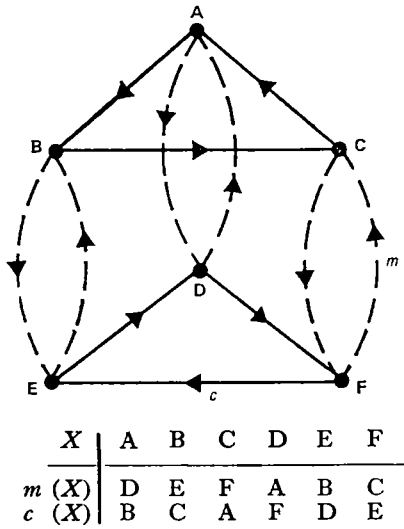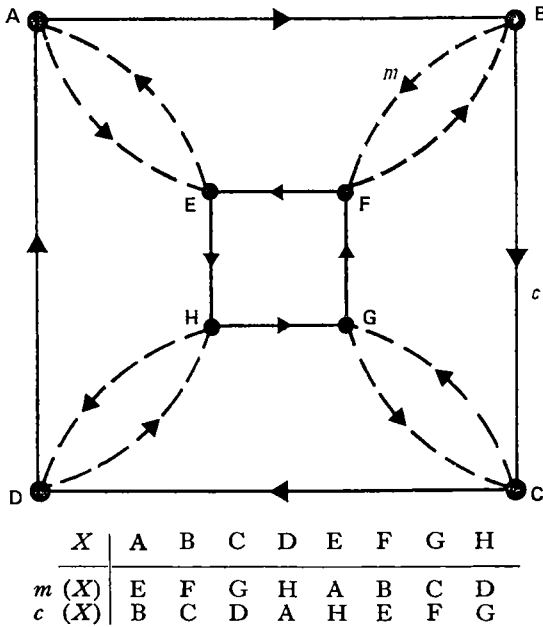| X	A	B	C	D	E	F	G	H
m (X)	E	F	G	H	A	B	C	D
c (X)	B	C	D	A	H	E	F	G

10. *The Imaginary other in Relation to the Other*

I shall deal in detail with the constitution of the Imaginary order by the 'mirror-stage' in Chapter XVII below. In what follows I am employing the term Symbolic to refer both to the analog exchange of difference and to the digital exchange of distinction. The term Imaginary refers to the mirror relationship described by Marx in the digital exchange of capitalism and to the mirror-stage described by Lacan. Thus the categories I am employing are not precisely the same as those called the Symbolic and the Imaginary in the work of Lacan, for Lacan's Symbolic refers only to 'language' (i.e., to a confusion between 'language' and 'communication': see Chapter XVI), and it is grounded on a logocentric and phallocentric epistemology (Chapters X and XIII).

The Imaginary is the domain of dual relationships, the domain of the either/or. In Lacan, the term derives from the mirror-stage which occurs between the ages of six and eighteen months in child-development (Lacan, 1953a, 1966: 93–100, 178–92; Wilden, 1968a: passim, see Index). This results in a specular identification with the image of another, an *alter ego*, which involves the constitution of the ego as an ALIENATION of the subject. The Imaginary is thus constructed on the double bind inherent in the word IDENTITY: identical to what and to whom, for what and for whom?[6]

The overriding symmetries and oppositional dualities of the Imaginary make it a trap from which the subject could never escape without the introduction of MEDIATION. In a developmental sense, the Imaginary order of the mirror-stage is a necessary stage of (desired) symmetry which is constituted in the overall complementarity of the relationship between mother and child. (This use of symmetry and complementarity derives from Bateson's concept of schismogenesis or differentiation in *Naven* [1936: 171–97]. See Chapter VIII.) Symmetrical relationships are questions of 'matching'; complementary relationships are questions of 'fitting'. The relationship of the part to the whole or the dominant to the subordinate is always complementary. All relationships seem to be either symmetrical or complementary or both (and their definition always involves punctuation); pathology arises if and when there is a specialization in one or the

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[6] Laing and Esterson (1964: 6) deal with the alienating forms of the 'problem of identity': the 'autonomous ego', the 'free individual', the 'ego as the unity of the person', and so on, in the following way:

> People have identities. But they may also change quite remarkably as they become different others-to-others. It is arbitrary to regard any one of these transformations or ALTERations as basic, and the others as variations.

other, that is to say, an inability to protect against symmetry by switching to complementarity and vice versa. The child's primordial discovery of his distinction from the world is short-circuited by the effects of specularization in the Imaginary. Difference becomes opposition, essential to the concepts of identity, identification, and projection (Chapter VI). Here the child is alienated from himself in a dual relationship of demand with one or other parent, or both. His 'I' is trapped in the demands of his alienated ego, which he seeks to make correspond with the demands of his *alter ego* (his ideal ego). His 'I' is a signifier in somebody else's discourse; he is spoken rather than speaking. Here he can be only what others desire (or in effect demand) him to be. As a 'schizophrenic' patient puts it (Watzlawick, Beavin, and Jackson, 1967: 89), "In other words, I can't be anything but myself, and if people don't like me the way they am – ah, the way I am. . . ."

It is through the symbolic relationship of the oedipus complex – obedient to the social law of what Lacan calls the Symbolic father, the law of the prohibition of incest – that the child is integrated into a dialectical and triangular relationship, where the mediation of desire protects each component from specializing in either symmetry or complementarity with any of the other components. Here his debts and his gifts – theoretically – begin to be safely transferred outside the family. In pathological families, however, the symbolic function of the oedipal relation will be reduced to a set of dual Imaginary relationships.

Lacan's Symbolic order is constructed around the Other as the "name-of-the-father" in our culture. The Other can only be categorized in relation to a corollary, the other (a particular other). If Lacan's use of the term Other is often ambiguous and confusing, it is nevertheless clear that it is designed to be, not an ontic, but an ontological category (to use a Heideggerean distinction). That is to say, it is not of the domain of the existent, but of the domain of Being. To put the same thing in epistemological terms, whereas the other is a FACT, the Other is designated in the theory as a law or PRINCIPLE.[7]

11. *The Problem of Interorganismic Authority*

Lacan's Other represents the patrocentric ideology of our culture. The Other is only theoretically *ne-uter*, for it is not just 'Otherness'. It is the principle of the locus of language and of the signifier, which for Lacan, is naturally the phallus (Chapter X). It is uselessly idealistic to try to say

[7] The Other in Lacan's theory is, however, simply a cultural Other: the Symbolic Father. In other words, it is not in the final analysis ontological, it is ontic.

that Lacan's analysis of our values in these terms is incorrect. The signifier – and the phallus – are indeed the instruments of exploitation in our culture, and the Other is indeed the locus of the violence of the 'law and order' of the system.

For the creative and truly intuitive therapist – a rare bird – the question of the 'cure' never fails to come up against the double bind of trying to 'save' the patient by being forced to 'save' the system which no individual can change. For the 'average' person in our culture – with house, family, car, children, credit-rating, and job, and without the degrees of freedom enjoyed by intellectuals and the more privileged classes – any true 'cure' would amount to an injunction to 'go crazy', as that is defined by the culture, and you can't feed your children that way.

But the Other as a necessary principle in human affairs does not inevitably imply the oppressive characteristics which it actually manifests both in our society and in the Lacanian theory. Waddington (1968: 29–32) has devoted himself to some speculations about the apparent dilemma of 'interorganismic authority'. At first sight his remarks might easily be construed as supporting the particular version of the function of Otherness espoused by Lacan. Waddington has argued in his *Ethical Animal* (1960) that the inexplicable development of language in evolution, as a way of transmitting 'hereditary' information (in culture), "has inextricably connected it with notions of social (usually parental) authority". Or, in Lacan's terminology: "The primary statement or given word decrees, legislates, aphorizes. It is oracular; it confers on the real other[8] the obscure authority of that other" (1966: 808). The Word is inevitably 'command–report' before it can become 'report–command' or report and command. Obviously, the mere fact that language has to be learned from others, engenders this command relationship between the child and 'authority'. This is Lacan's point in describing the Other as the "locus of the Word". Waddington goes on to ask whether "ethics" would ever have been developed if our communications system had remained analog (although he does not use this particular term): "Could symbol transmission have been married to objectification rather than to interorganismic authority?"

> The attainment of 'objectification' – seeing that the world contains certain things with outlines around them . . . – is an achievement which natural selection would certainly have brought about quite independently of any possibility of transmitting information symbolically [i.e., digitally, in language]. . . . If . . . you happen to light on a method of transmitting information . . . in a different sensory mode from that in which you

8 The 'real Other' (capital O) in the Lacanian theory, is the mother.

learn the process of objectification [analog perception], then you are likely to finish up with information transmission inextricably mixed up with interorganismic authority . . . [and] ethical values (pp. 31-2).

There is a curious jumble of ideas here, some of which seem surprising coming from the pen of a specialist in animal genetics. In the first place, 'authority' must be distinguished from 'authoritarianism'. The teacher, for example, whose function should be that of a catalyst in a learning (rather than in a teaching) process, must be distinguished from 'the Other' as the representative of the subject-who-is-supposed-to-know (a rare enough situation, it is true). Secondly, there is plenty of evidence of 'authority' in analog zoosemiotics (the weaning of puppies by the mother, for example). And thirdly, Waddington seems to be talking at one moment about ethics and, at another, about morality, which are far from being the same thing.

It seems very obvious that only in a culture with deeply programmed ELITIST metarules does the correlation of 'Other' and 'authority' with particular forms of knowledge, behavior, and status, hold good. I would hope that in the future evolution of humankind, this anti-biological elitist programming can be transcended. For if it is not in fact a transitional stage, it will most surely be the end of all of us. 'Authority' and 'mastery' are only equivalent to 'parent' and 'professor' (or whatever) in a culture which employs Imaginary digitalization to turn dynamic differences into static oppositions.

Otherness is a necessary category of human social systems. But only in the Imaginary does the Other necessarily equal oppression. And only in the Imaginary can you set up a theory of 'counter-opposition' based on anarchist illusions about 'freedom' and 'individualism' – whether in this world of mirrors you describe yourself as left (negative identification with the Other) or as right (positive identification with the Other). The 'purity' of 'absolute' opposition is soiled with the illusions of the existential hero (cf. Chapter XVII); the 'altruism' of liberal tolerance of Imaginary opposition is, if anything, more dangerous, still.[9]

The distinction between morality (the ideology of the present state of the system) and ethics (the ongoing critical theory of systems) is significant. All natural systems are ethical in the sense that they do not allow violence – i.e., exploitative accumulation, accumulation for the sake of itself – but all morality is a locus of exploitation. And so long as the law of

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[9] There is a precise elaboration of the sort of values criticized in this chapter and in Chapter VIII, which includes practically every anti-natural and anti-female metaphor I have mentioned, and almost every counter-adaptive, Cartesian, solipsist, elitist, irrational, and Imaginary value one can pack into twenty-odd pages, in Ortega's *The Dehumanization of Art* (1956: 164–87).

incest – the original metaphor of 'No' – is viewed as a MORAL prohibition emanating from the Other, rather than as an ethical injunction to reciprocal exchange, language will indeed remain the agent of violence. Every refusal in the analog and every 'No' in the digital which localize the socially derived aggression of the parent against the child, will necessarily invite the child to internalize it as violence and to re-project it onto others.

12. *The Symbolic and the Veil of Maia*

For Lacan, the Imaginary is related to fetishism, which brings the Marxian perspective on the fetishization of commodities into sharper focus. Lacan refers to the fetishist as clasping the "veil of Maia", and to the castration of the castration complex as a question of what is "beyond that veil" (Wilden, 1968a: 44, 131). Maia is the name of an Italian earth goddess derived from the Greek for "O mother earth". The Greek term also gives rise to the words for midwife in Greek (cf. the Socratic maieutics) and to the appellation 'mamma'. Maya, of course, is the "illusion of entrenched selfhood", and Lacan's conception of the Imaginary is no sense in contradiction with the *Vedanta Sutras* (Thibaut, ed., 1890–6: xxvi) commented by Sankara:

> The unenlightened soul is unable to look through and beyond *Maya* which, like a veil, hides from it its true nature. Instead of recognizing itself to be Brahman, it identifies itself with its adjuncts (*upadhi*), the fictitious offspring of *Maya*, and thus looks for its true Self in the body, the sense organs, and the internal organ (*manas*), i.e., the organ of specific cognition.

The 'enlightened soul' of these ancient texts, for all its apparent mystical apparatus and for all the repressive function of the religious thought in the societies in which these conceptions arose, is a unit of mind. Maya is the Imaginary, in both its essential and its non-essential forms. Ramanuga points out that dreams, as products of Maya, are of a 'wonderful nature' and cannot be brought about by the individual soul alone (p. lxi).

What is essential to Lacan's derivation of the Imaginary order is the confusion of the ego with the body-image, the confusion of the biological 'individual' – the skin-bound organism – with the 'person' or the 'personality'. The dominance of the Imaginary is thus essential to the split between mind and body in western culture (Chapter VIII).

To summarize the relationship which I establish between the Symbolic and the Imaginary orders: The Symbolic is the domain of similarity and difference; the Imaginary that of opposition and identity. The Symbolic is the category of displaced reciprocity and similar relationships; the

Imaginary that of mirror-relationships, specialization in symmetry or pseudo-symmetry, duality, complementarity, and short circuits. Neither Symbolic nor Imaginary can do without the other, and neither can be defined except in terms of and in differentiation from the other. The Symbolic function is collective and the domain of the Law; the Imaginary creates the illusion of subjective autonomy. The Imaginary is the domain of adequacy; the Symbolic the domain of truth. Desire is to the Symbolic as demand is to the Imaginary, as are the subject and the ego respectively. Imaginary debts can never be paid; Symbolic debts can never not be paid. The separation of the organism from the environment is Imaginary; the ecosystem is Symbolic. The *cogito* is an Imaginary 'I'; *loquor* is the next step towards a potential Symbolic 'we'. The being of the Imaginary is either/or; the being of the Symbolic is both–and.

13. C. S. Peirce on Firstness, Secondness, and Thirdness

Peirce's intricate theory of 'semiosis' and communication, seriously misconstrued by Charles Morris's splitting of syntactics, semantics, and pragmatics from each other (cf. Dewey, 1946), is useful in our attempts to establish the levels of logical typing and organization between the Symbolic, the Imaginary, and the Real. On my reading, Peirce's concept of the 'symbol' (the linguistic sign) as having no reference as such to 'objects', does not contradict the essential notion of the intentionality of discourse (its 'referent', its 'goal'). 'Meaning', for Peirce, probably corresponds with 'signification' in these essays (Dewey, 1946: 91, 92). But rather than initiate a critique of Peirce's bioenergetic basis or of his ambiguous category of 'thought', or of his probable confusion of the word 'not' with 'not-I', I shall simply outline his 'levels of being' here.

Writing in opposition to atomistic psychology, Peirce maintained that in so far as thought is cognitive it must be linguistic or symbolical, that is, it must presuppose communication (by means of signs). 'Mental signs', according to him, are inseparable from interpretation by other mental signs; thought is not mosaic or linear, but rather a NETWORK of signs. His lonely phenomenological pragmatism is a typical example of a theory born before its time. Without the benefit of cybernetic and communications theory, his "law of mind", for example, is easily dismissed as idealist anthropomorphism.

Lévi-Strauss has to some extent been influenced by Peirce's semiotics and possibly by his epistemology. Lacan's theory of the signifier corresponds closely to Peirce's 'symbol'. What is of interest here, however, is less the theory of signs as such than the reciprocally related ontology

developed by Peirce. Peirce posed the existence of three modes of being, which he called Firstness, Secondness, and Thirdness (Peirce, 1955: 76):

> Firstness is the mode of being which consists in its subject's being positively such as it is regardless of aught else. That can only be a possibility. For as long as things do not act upon one another there is no sense or meaning in saying that they have any being, unless it be that they are such in themselves that they may perhaps come into relation with others.

Secondness is "a mode of being of one thing which consists in how a second object is" (p. 76). This is the domain of "the actual facts". The First is predominant in the ideas of "freshness, life, freedom" – the free being defined as "that which has not another behind it, determining its actions". But, in so far as "the idea of the negation of another enters, the idea of another enters; and such a negative idea must be put in the background, or else we cannot say that the Firstness is predominant" (pp. 78-9).

> We are continually bumping against hard fact. . . . [The] notion of being such as other things make us, is such a prominent part of our life that we conceive other things also to exist in virtue of their reactions against each other. The idea of other, of NOT, becomes a very pivot of thought. To this element I give the name of Secondness (quoted in Dewey, 1946: 90).

The idea of Second is predominant

> in the ideas of causation and of statical force. For cause and effect are two. . . . Constraint is a Secondness. In the flow of time in the mind, the past appears to act directly upon the future, its effect being called memory, while the future only acts upon the past through the medium of thirds (p. 79). The second category . . . is the element of struggle. . . . By struggle I must explain that I mean mutual action between two things regardless of any sort of third or medium, and in particular regardless of any law of action (p. 89).

The bulk of "what is actually done" is Secondness, "or better, Secondness is the predominant character of WHAT HAS BEEN DONE. The immediate present, could we seize it, would have no character but its Firstness" (p. 91). The third mode of being is related to LAW and to PREDICTION:

> This mode of being which CONSISTS, mind my word if you please, . . . in the fact that future facts of Secondness will take on a determinate general character, I call a Thirdness (p. 77).

Thirdness "consists of what we call laws when we contemplate them from the outside only, but which, when we see both sides of the shield, we call thoughts. Thoughts are neither qualities [Firstness] nor facts [Second-ness]" (p. 78).

> By the third, I mean the medium or connecting bond between the absolute first and last. The beginning is first, the end second, the middle third. The end is second, the means third. . . . Continuity represents Thirdness almost to perfection. Every process comes under that head. . . . Law as an active force is second, but order and legislation are third. Sympathy, flesh and blood, that by which I feel my neighbor's feelings, is third.

Thirdness is most predominant in "the idea of a sign, or representation. . . . Some of the ideas of prominent Thirdness . . . are generality, infinity, continuity, diffusion, growth, and intelligence" (p. 80). Meaning or intention, in so far as they are related, are an "element of the phenomenon or object of thought" which is the element of Thirdness. "It is that which is what it is by virtue of imparting a quality to reactions in the future" (p. 91). "Every genuine triadic relation involves meaning, as meaning is obviously a triadic relation." Moreover, "a triadic relation is inexpressible by means of dyadic relations alone" (p. 93). The three categories are not sensations; they are interrelated; and if it is possible to "prescind" (i.e., abstract, or cut off) First from Second and Third, or Second from Third, it is not possible to "prescind" Second from First nor Third from Second (p. 97).

> A SIGN ["something which stands to somebody for something in some respect or capacity"], or REPRESENTAMEN, is a First which stands in . . . a genuine triadic relation to a Second, called its OBJECT, as to be capable of determining a Third, called its INTERPRETANT, to assume the same triadic relation to its Object in which it [the sign] stands itself to the same Object. The triadic relation is GENUINE, that is, its three members are bound together by it in a way which does not consist in any complexus of dyadic relations (pp. 99–100).

The similarity of the concept of Thirdness – the locus of meaning, desire, goalseeking, project, mediation, and the highest logical type of law – to the Symbolic and the analog function is very striking. Firstness seems to be related to the Real, and Secondness to the Imaginary, for where Thirdness is the domain of mediated triangular relations, Second-ness is ontologically the domain of the apparition of what is other, and psychologically is the domain of reaction, struggle, and duality. As Peirce says, it is in so far as the 'negation' of the other enters Firstness, that

Secondness appears – a conception clearly related to the mirror-stage, to the *Fort! Da!*, to the process of the *Verneinung* in the child, and to the specular opposition of master and slave, ego and *alter ego*, in the Imaginary. I have never met or heard of anyone who understood Peirce's theory of signs, but according to Dewey, the 'interpretant' (another sign) of an 'iconic sign' is an instance of Firstness and the EMOTIONAL; that of an 'indexical sign' is an instance of Secondness and the ENERGETIC; that of the 'linguistic sign' is an instance of Thirdness and of the LOGICAL and the INTELLECTUAL.

Dewey accuses Morris of reducing Peirce's complex triadic theory of meaning, with its integral relation to the world and to other minds, to a binary relation between words and things. We recall that, as Foucault has pointed out (1966: 57–8), the tripartite semiotic theory of the Stoics, for whom the 'sign' included the "signifier, the signified, and the 'conjuncture'" (the *tunchanon*), was reduced to a binary relation between signifier and signified in the seventeeth century. During the Renaissance, however, the relation was ternary, including "the formal domain of marks, the content which they signal, and the similitudes which link the marks to the things designated". "Words and things became separated" in the seventeenth century, which concerned itself with questions of "representation". They continue to remain separated for us, in our concern for "sense and signification" and for the pure taxonomies of "order and classification" (pp. 58, 71) (cf. Chapter VIII). After its binarization by the classical age, says Foucault,

> . . . language, instead of existing as the material writing of things, will no longer find its space except in the general regime of representative signs. . . . Language will no longer be anything more than a particular case of representation (for the classical age) or of signification (for us). The profound kinship of language and the world is undone. The primacy of writing is suspended (pp. 57–8).

14. Nature and Culture: The Phallus in Exchange

Lacan's theory of the phallus as a signifier is dealt with in some detail in my critique of phallocentrism in the chapter following this one. To put the matter briefly, if we substitute the sign 'phallus' for the 'sister' or 'brother' exchanged in matrimony and for the 'child' exchanged in the line of filiation (*Figures 1–4* above), we have a representation of the psycho-analytical theory of the exchange of the 'symbolic object'[10] within and

[10] As the next chapter will show, in our culture the phallus serves as an Imaginary object in an Imaginary system.

between generations. The clinical function of the construct 'phallus' in psychoanalysis need not concern us at this point. In psychoanalytical metapsychology it is a 'symbol' of the child, of the breast, and of the faeces, any one of which can enter into the exchange system within or between generations.

The first aspect of the phallus as an apparently symbolic object which is of interest here is that it represents the advent of exchange value in the family itself. It is a cultural object, dependent upon the prohibition of incest and the introduction of distinction, for, like the other symbolic objects mentioned, it is the sign of what it is not (the penis, which has only use value). It cannot be possessed. The second aspect of interest is that, like the nip, the phallus begins in metonymy and ends in metaphor. Melanie Klein describes the penis as a *pars pro toto* (she means phallus). As a representation of the part-object, whatever is a *pars pro toto* at its origin (the breast, faeces, the thumb, and so on) becomes a metaphor in the same way that the originally metonymic nip becomes a metaphor of (a substitute for) the bite once it has been integrated into a higher level of communication (Chapter VII). Once it has become a sign in a system of communication of a different logical type, WHAT WAS ONCE A MESSAGE BECOMES PART OF THE CODE. The phallus – or its 'familial' equivalent – thus emerges – with language, kinship, and society – in the (mythical) passage from nature to culture.

15. *Nature and Culture: Primary Process and Secondary Process*

We have seen that the so-called 'principle of inertia' regulates the free energy of the primary process in Freud's economic viewpoint. This process has been described as an analog continuum of differences. But the reactions of the primary process give rise to a secondary process which discovers certain paths of discharge other than those available to the primary process to be necessary. The primary process and its free energy thus corresponds to the pleasure principle, regulated by inertia, or by the reduction of tension to zero, whereas the secondary process, whose energy is 'bound' (*gebundene*), corresponds to the reality principle, regulated by constancy, or by the maintenance of enough tension (unpleasure) to deal with the exigencies of life (Chapter VI).

The concept of the binding action of the secondary process (*Bindung*) is clearly related to the discrete element and to the discontinuity in the Bororo myth interpreted by Lévi-Strauss. For Freud, the primary process is FULL (*voll*), the secondary process is full of holes (*lückenhaft*). A related viewpoint in the Freudian metapsychology describes the primary

process and the secondary process in ICONIC and LINGUISTIC–ICONIC terms, respectively. As early as the work on aphasia, Freud had described the thing-presentation as involving something "which is not closed and almost one which cannot be closed, while the word-presentation is seen to be something closed, even though capable of extension" (Freud, 1891: 214; Wilden, 1968a: 238). What he clearly means by "closed" is that the image is not discrete but that the signifier is. From this vantage point, we can perhaps for the first time make some sense of the curious diagram in Letter 52 (1896), for we realize that it is a representation of levels of a psychic or neuronal process dependent on continuity and discontinuity (*Standard Edition*, I), or in other words, on the distinction between analog and digital communication (*Figure 1*, Chapter VI).

Lévi-Strauss (1950: xlvii–xlviii) poses a somewhat similar analog/digital model of the genesis of the secondary process and of its discontinuous nature, using the expression "symbol" for Freud's "word-presentation":

> . . . Language could only have been born in one fell swoop. Things were not able to set about signifying progressively. . . . At the moment when the entire Universe suddenly became SIGNIFICATIVE, it was not for all that better KNOWN, even if it is true that the appearance of language must have precipitated the rhythm of the development of knowledge. There is therefore a fundamental opposition in the history of the human mind between symbolism, whose nature is to be discontinuous [digital], and knowledge, marked by [analog] continuity. . . .

The result of this difference is

> that the two categories of signifier and signified were constituted simultaneously and jointly, like two complementary units; but that knowledge, that is to say, the intellectual process which permits us to identify in relationship to each other certain aspects of the signifier and certain aspects of the signified – one might even say: that which permits us to choose from the set of the signifier and the set of the signified those parts which present the most satisfactory relationships of mutual agreement between them – only began very slowly. . . .

In other words, in interorganismic communication, the digital emerges as an attempt to 'map' the 'territory' of the analog. Digital knowledge, in the sense of the 'symbolism' of language, concerns the possibility of establishing identities rather than simple iconic similarities (cf. Foucault, 1966: 57–8).

Consequently, Lévi-Strauss can say: "The Universe signified long before we began to know what it was signifying. . . ." Moreover, "the Universe signified, from the very beginning, the totality of what humanity

could expect to know about it". The work of equation of the signifier in relation to the signified, he continues, given on the one hand by symbolism (language) and pursued on the other by knowledge, is not fundamentally different in any kind of society, except in so far as the birth of modern science has introduced a difference of degree.

Thus in his attempts to comprehend the universe, man has at his disposition "a surplus of signification". This he divides among things "according to the laws of symbolic thought", in order that "on the whole, the available signifier [signification] and the signified it aims at [meaning] may remain in the relationship of complementarity which is the very condition of the use of symbolic thought" (p. xlix). From these considerations, Lévi-Strauss posits the notion of *mana* as the ZERO-SYMBOL, or the digital gap, in the system of symbols which go to make up any cosmology. It is "a sign marking the necessity of a symbolic content supplementary to that with which the signified is already loaded, but which can take on any value required, provided only that this value still remains part of the available reserve [of "floating signifier"]" (p. xlviii).

One realizes that the concept of *mana* in the 'other civilization' is in effect an informational and not a bioenergetic principle. It is in fact one of the predecessors of what is now called 'information science' (cf. Chapter XI, Section 10).

The relationship between signifier and signified as it is expressed here sounds very much like that between the secondary and the primary process in Freud. Depending on one's interpretation, the notion of a "surplus of signification" may be construed to refer to the free flow of meaning in the Freudian primary process, or it may mean that the logical complexity of the digital aspects of the secondary process allow for a very large number of ways of dividing up the universe "according to the laws of symbolic thought". What is common to both interpretations, and what is common both to the Freudian view and to the Lévi-Straussian conception (no matter how one translates the term 'signified', which seems, however, to mean 'reality' here), is the notion of the binding of an analog continuum by digital discontinuity. A related concept here is Saussure's view of the constant *glissement* or 'sliding' of the signifier in its relation to the signified (Saussure, 1916a: 156–7) – or in the terminology of these essays, the 'sliding' of signification in relation to meaning. (This is also the sliding of 'thought' in relation to 'sound', as in Mandelbrot's theory of the relationship between the phonemes and the acoustic continuum.) In a word, the symbolic function "supplements" the "charge of signification" of the signified, that is to say, through the introduction of the discrete element, it allows analog meaning to come to signification in a context.

A phenomenologist would presumably talk about this passage from nature to culture, or from meaning to signification as these processes are represented here, in the terms of a passage from the 'pre-categorical' to the 'categorical'. But just as many working phenomenologists confuse negation and absence, becoming and communication (cf. Kosok, 1969), they are unable to demonstrate the concrete and material embodiment of these abstractions in the way that the semiotic conception of the analog and the digital is able to do.[11]

16. *Summary: Use Value and Exchange Value*

Analog and digital communication are the unifying concepts which, along with the distinction between energy and information, enable us to make the various isomorphies and relations established here. Analog communication precisely maps Lévi-Strauss's nature, Bateson's animal combat, Saussure's 'sound', Marx's "primitive society with property in common", and the Freudian primary process. The digital, as the domain of the discrete element, precisely maps the notions of distinction, identity, and opposition – all dependent on a form of negation – in culture, in psychoanalysis, in exchange, in language, and in epistemology. It describes the genesis, the form, and sometimes the function of the exchange value of the 'nip', the 'brother–sister', the 'word-presentation', the 'phallus', the 'sign' and the 'signifier'. And it enables us to conceive of the projection of messages from the axis of combination into the axis of the code at a second level, through the process of emergence (Chapter XII).

The distinctions between use value and the two forms of exchange value can be summarized as follows:

1 The exchange and communication processes of the natural ecosystem are both analog and digital in form, but invariably analog in function.

[11] In spite of Husserl's tendency to speak in terms of an autonomous 'I', the deficiencies of contemporary phenomenology cannot entirely be laid at his door alone. The following passage on his conception of *Einfühlung* (empathy) can be read in two ways: as an expression of a bioenergetic and Imaginary duality and symmetry, lacking any concept of mediation, and as an attempt to talk about the communicational relationships of the unit of mind:

> The first thing constituted in the form of community, and the foundation for all other intersubjectively common things, is the commonness of Nature, along with that of the Other's organism and his psychophysical *I*, as paired with my own psychophysical *I* (1929: 120).

One asks oneself, in Peirce's terms, whether Husserl is talking from the point of view of Secondness or from that of Thirdness.

2 Use value is analog in both form and function and is directly related to matter–energy.

3 Exchange value is digital in form and directly related to information. All cultural systems manifest some form of exchange value related to meaning.

4 Symbolic exchange is digital in form, but analog in function. It thus becomes a use value of a different logical type from (2). It is directly related to both meaning and signification.

5 Imaginary exchange is digital in form and digital in function. In Imaginary exchange, information is reduced to the equivalent of matter–energy. It is the domain of signification in the sense of reification.

6 All exchange value requires digitalization. Symbolic exchange value is the sign of an (ecosystemic) relation; Imaginary exchange value is the sign of a thing (and therefore of relations between things).