falling into four focal areas. Having highlighted work being done in each area,[3] I will seek to clarify the terminological, philosophical, and substantive issues that divide major theorists. In the process, I will consider the implications of these rethinkings for a number of classic anthropological questions: How have cultures developed and what forces shape them? How are cultures learned? How do shared symbolic systems transcend individual thought worlds? How different and unique are cultures? Do universal patterns underlie diversity? How is cultural description to be possible?

CULTURES AS ADAPTIVE SYSTEMS

An important expansion of cultural theory has come from viewing cultures in evolutionary perspective. A widened bridge between studies of hominid evolution and studies of human social life has led us to see more clearly that the human biological design is open-ended, and to perceive the way its completion and modification through cultural learning make human life viable in particular ecological settings. Applying an evolutionary model of natural selection to cultural constructions on biological foundations has led anthropologists to ask with increasing sophistication how human communities develop particular cultural patterns.

A vast literature, popular and technical, has dealt with the interweaving and relative importance of biological and cultural components of human behavior. Aggression, territoriality, sex roles, facial expression, sexuality, and other domains where cultural and biological are interwoven have been endlessly and often mindlessly discussed. From all this, we shall draw two brief conclusions, then pass on. First, any notion that if we peel off the layers of cultural convention we will ultimately find Primal Man and naked human nature underneath is both sterile and dangerous: we need a complex interactional model, not a simplistically stratigraphic one (19, 25). Second, either extreme ethological or extreme cultural determinism can now be sustained by ideology and faith but not by sober science. Just how biological templates are transformed and elaborated into cultural patterns will have to be worked out for each realm; and that will take careful and imaginative research designs and patient exploration, not polemics and sensationalism.

How human cultures are distinctive, despite the continuities in hominid evolution, has been extensively reviewed by Holloway (45), Alland (2, 3), Montagu (59), and others. A crucial issue here is how and at what stage vocal language evolved and what its immediate precursors were (44). If the evidence that an elaborated vocal language is less than 100,000 years old holds up, a vast period looms when

[3] I will *not* list exhaustively the publications where "culture" is used or cultural theory is applied or developed. Since that would include a substantial proportion of the writings in anthropology, this would not only be impossible, but trivial and unrevealing: a focus on high points and highlights is clearly demanded in a review article concerned with refinement of theory, not accumulation of substance.

Summary of Comments on Theories of Culture

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early humans lived in bands, made tools, hunted in well-planned forays, probably lived in pair-bond family relationships—a period of two million years or more of proto-human social life without a fully elaborated code for symbolic communication. Our understanding of what makes humans human and how cultures evolved will doubtless unfold and change excitingly in the next few years.

From the standpoint of cultural theory, however, the major developments have come from evolutionary / ecological approaches to cultures as adaptive systems. The major spawning grounds of evolutionary / ecological rethinkings have been Michigan and Columbia. The foundations laid by Leslie White have been creatively recast by such scholars as Sahlins, Rappaport, Vayda, Harris, Carneiro; and by such theory-minded archeologists as the Binfords, Flannery, Longacre, Sanders, Price, and Meggers. The rapprochement of a theoretical archeology with ecological anthropology emerges as one of the major developments of the past decade.

That is not to imply that consensus prevails about how cultures are best conceptualized or how and why they develop and change. The recent exchanges between Service (75) and Harris (42), Marxist critiques of Harris' cultural materialism, the gulfs between cultural ecology and the human ecology conceived by Vayda & Rappaport (81), the sectarian wars within "the new archeology," all attest to diversity and disagreement. Given this sectarian diversity, most scholars working in this tradition (I will for shorthand call them "cultural adaptationists")[4] agree on some broad assumptions.

(*a*) Cultures are systems (of socially transmitted behavior patterns) that serve to relate human communities to their ecological settings. These ways-of-life-of-communities include technologies and modes of economic organization, settlement patterns, modes of social grouping and political organization, religious beliefs and practices, and so on. When cultures are viewed broadly as behavior systems characteristic of populations, extending and permuting somatic givens, whether we consider them to be patterns *of* or patterns *for* behavior is a sccondary question.

> Culture is all those means whose forms are not under direct genetic control . . . which serve to adjust individuals and groups within their ecological communities (Binford 11, p. 323)

> The culture concept comes down to behavior patterns associated with particular groups of peoples, that is to "customs" or to a people's "way of life" (Harris 41, p. 16).

(*b*) Cultural change is primarily a process of adaptation and what amounts to natural selection.

> Man is an animal and, like all other animals, must maintain an adaptive relationship with his surroundings in order to survive. Although he achieves this

[4] A term which, however disagreeable, lacks the aura of ancient battles, rusting weapons, and buried protagonists that "cultural evolutionists" conjures to mind.

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begun to turn from the uniqueness of cultural systems to a search for universal patterns (48).

Analyses of cultures as cognitive systems have not progressed very far beyond a mapping of limited and neatly bounded semantic domains. Significant attempts to formalize the cultural knowledge needed to stage performances or operate in limited social situations have been made by Frake (18), Metzger & Williams (57), Wallace (83), Spradley (77), Agar (1), and others; but it is striking in retrospect that the messianic optimism of early cognitive anthropology has yielded so few fragments of cultural description.

Moreover, it has yielded few even tentative sketch maps of the overall structure and organization of cultures as cognitive systems (see e.g. 50, p. 123; 34, pp. 258–59; 37; 78). Not only has the notion of a "cultural grammar" proved unproductive and inadequate in the face of the staggering richness and complexity of human knowledge and experience; "new ethnographers" have not set out even an empty blueprint of how an overall cognitive system might be organized, and hence how the bits and pieces offered in demonstration might fit into a wider design. Such a lack of broad vision, I believe, has obscured the magnitude of the realms of culture not amenable to the surface probings of formal ethnography. I have argued (48, 49) that the new transformational linguistics gives some valuable insights about how cultural knowledge underlying the surface structures so far mapped might be organized; below I will argue that burgeoning research in artificial intelligence can yield further insights.

Cultures as Structural Systems

On the continent, Lévi-Strauss has continued to elaborate his view of men's symbolic worlds and the processes of mind that generate them; and in the last decade, structuralist approaches have had profound impact on many scholars trained in the Anglo-American tradition.

Lévi-Strauss' writings on culture and mind have not only been sweepingly influential; as sacred texts, they have elicited an ever-widening stream of exegetical literature.[5] I will not add substantially to that stream. Here only a few points will serve to place the Lévi-Straussian position in relation to those that precede and follow. Lévi-Strauss views cultures as shared symbolic systems that are cumulative *creations of mind*; he seeks to discover in the structuring of cultural domains--myth, art, kinship, language—the principles of mind that generate these cultural elaborations. Material conditions of subsistence and economy constrain (but do not *explain*) lived-in worlds; but especially in myth, they leave thought-of worlds free reign. The physical world humans live in provides the raw materials universal processes of mind elaborate into substantively diverse but formally similar patterns. The mind imposes culturally patterned order, a logic of binary contrast, of relations and transformations, on a continuously changing and often

[5] Literary critics have a tendency to be ponderous, obscure, and intellectually pretentious, in counterpoint to the textured beauty of the texts they seek to illuminate; and Lévi-Strauss' exegetes and apologists have with rare exceptions (notably Boon 12) carried on this tradition.

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states of affairs" one can observe as events and behaviors. There are, he admits, important questions to be asked about the connections between the plane of cultural symbols and the plane of observable events so that one can "discover how the cultural constructs are generated, the laws governing their change, and in just what ways they are systematically, related to the actual states of affairs of life" (71, p. 7); but in his recent work, he has chosen to leave those tasks to others.

More recently, Schneider (72), has expanded and clarified his conception of culture. He distinguishes a level of "how-to-do-it" rules or *norms* that tell an actor how to navigate in his social world. But he wants in cultural analysis to take one further step back, to distinguish "the system of symbols and meanings embedded in the normative system, but . . . a distinct aspect of it [which] . . . can easily be abstracted from it":

> By symbols and meanings I mean the basic premises which a culture posits for life: what its units consist in; how those units are defined and differentiated; how they form an integrated order or classification; how the world is structured; in what parts it consists and on what premises it is conceived to exist, the categories and classifications of the various domains of the world of man and how they relate one with another, and the world that man sees himself living in (72, p. 38).

Since Schneider's contrast between "normative" and "cultural" levels is conceptually important, it is worth quoting him at greater length as he clarifies it:

> Where the normative system . . . is Ego centered and particularly appropriate to decision-making or interaction models of analysis, culture is system-centered . . . Culture takes man's position vis-à-vis the world rather than a man's position on how to get along in this world as it is given. . . . Culture concerns the stage, the stage setting, and the cast of characters; the normative system consists in the stage directions for the actors and how the actors should play their parts on the stage that is so set (72, p. 38; see also 73).

Schneider goes on to contrast his approach to cultural analysis with Geertz'. He sees the latter as bound—as Parsons himself has been—by Weberian assumptions: a domain of the *social system* (kinship or religion or economics or politics) is carved out, and the corresponding cultural realm is analyzed. A purely cultural analysis can fruitfully trace interconnections of symbols, premises, and principles of order wherever they lead; and a map of the cultural system *as a separate level* will, he argues, look very different than an interpretation of the cultural correlates of social institutions. In the end, he calls for a pure cultural analysis "uncontaminated by the study of its social system"; and only after this logically prior task, for the tracing of interconnectedness between cultural, social, and psychological planes, so as to understand the social life of a people or the actions of individuals.

CULTURES AND SOCIOCULTURAL SYSTEMS

In seeking to clarify the issues that divide major theorists of culture, we begin with no expectation that an eclectic composite can be reached with which they would

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agree: any statement about culture on which Marvin Harris and David Schneider could agree would probably be vacuous. And being eclectic would lead back toward the broad and clumsy culture concepts of the past.

Nonetheless, a conceptual sorting out will be useful, not to reconcile the disagreements, but to identify their nature and source. Some of them are philosophical and some substantive; some could be resolved by empirical evidence, some could not. Each of the theoretical positions or approaches I have sketched has strengths and vulnerabilities. By underlining strengths and exposing vulnerabilities hidden beneath eloquent rhetoric, some ways of joining strength to strength and guarding exposed flanks, and some paths for future research, may usefully emerge.

A first contrast in sorting out these conceptualizations of culture parallels is drawn by Goodenough. I will call (with considerable precedent) the patterns-of-life-of-communities *sociocultural systems*. Sociocultural systems represent the social realizations or enactments of ideational designs-for-living in particular environments. A settlement pattern is an element of a sociocultural system, not an element of a cultural system in this sense. (The same conceptual principles might yield densely clustered villages or scattered homesteads, depending on water sources, terrain, arable land, demography, and the peaceful or headhunting predilections of the neighboring tribe.) A mode of subsistence technology similarly is part of a sociocultural system, but not strictly speaking part of a cultural system (people with the same knowledge and set of strategies for subsisting might be primarily horticulturalists in one setting and primarily fishermen in another, might make adzes of flint in one setting or shells in another, might plant taro on one side of a mountain range or yams on the other side).

What cultural adaptationists are talking about are, in this sense, sociocultural systems-in-environments. It is these systems that are adaptive or maladaptive, that are subject in some way to natural selection. Ideational designs for living, patterns of shared meanings and systems of knowledge and belief, are crucially important subsystems of ways-of-life-in-environments. The latter are complex systems in the cybernetic sense, in which complex circuits connect ecological, demographic, ideational, and other subsystems.[9] How these circuits are interconnected, how information ramifies through them, and how homeostatic processes and directional change operate are (or can be) empirical questions for investigation, not articles of faith and ideological polemic.

[Note that this conceptualization of culture as an ideational system does not then correspond to the distinction drawn by Harris and some other cultural adaptationists between the economic domain (subsistence, technology, social organization of productive units) and the ideational realm (religion, ideology, law, art, etc). Knowledge and strategy about environments and ways of extracting subsistence from them, about making tools, about forming work groups, are as

[9] That these subsystems, or elements of them, may be from different ontological realms is, in the perspective of cybernetics, irrelevant (66).

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much a part of the ideational realm I am calling "culture" as patterns of cosmological belief or religious ritual.][10]

That throws Goodenough, Lévi-Strauss, Geertz, and Schneider in one camp (from which the clashing of symbols can be heard in the distance). It does so in a way that most new archeologists and ecological / evolutionary cultural anthropologists can probably accept as a possible—if not necessarily productive—conceptual strategy. At least they would mainly agree that what they are interested in are sociocultural systems[11] and how they develop and change. One can then investigate how ideational systems operate in this process of adaptation and change, both in terms of internal structure (how are changes in ideas about subsistence strategy related to changes in ideas about kinship or changes in ideas about religious ritual?) and in relation to other subsystems (how are ideas about choosing postmarital residence related to increased population or increased agricultural production?).

CULTURES AS IDEATIONAL SYSTEMS: PARADOXES AND PROBLEMS

The theorists of cultures as ideational systems, whom we have thrown into one noisy camp, remain to be sorted out. These modern theorists share an important premise that partly distinguishes them from their intellectual predecessors. As Singer (76) has noted, the two parallel traditions of American cultural anthropology and British social anthropology each entailed a kind of intellectual imperialism: for the former, social patterns were one realm of the culture; for the latter, especially Radcliffe Brown, cultural patterns are crystallized in social structure "as institutionalized and standarized modes of behavior and thought whose normal forms are socially recognized in the explicit or implicit rules to which the members of a society tend to conform" (76, p. 532). The dangers of swallowing the social into the cultural or the cultural into the social have been vividly portrayed by Geertz:

> Either culture is regarded as wholly derivative from the forms of social organization . . . or the forms of social organization are regarded as behavioral embodiments of cultural patterns. In either case . . . the dynamic elements in social change which arise from the failure of cultural patterns to be perfectly congruent with the forms of social organization are largely incapable of formulation (22, p. 992).

He, Goodenough, Lévi-Strauss, Schneider, and other major modern theorists share the premise that cultural and social realms are distinct though interrelated: neither is a mere reflection of the other—each must be considered in its own right.

[10] Note, however, that the distinction I have drawn is characteristically observed in Marxist analysis.

[11] Many, such as the Binfords, have used that designation as more or less interchangeable with "cultural systems."

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Such a conceptual untangling is basic to the refinements of theory and narrowings of the "culture" concept of the last 20 years.

The heart of the conceptual disagreements between these scholars is the problem of what to do about a basic paradox of human social life: When individuals engaging in social relations—even if there are only two of them—share common meanings, common understandings of one another's acts, then these shared meanings are greater than the sum of their "parts," their realizations in individual minds. Social meanings transcend, by some mysterious alchemy of minds meeting, the individuation of private experience. Social thinkers have struggled with this paradox for decades, even for centuries; yet *consciences collectives* still confound analytical dissection.

Goodenough's solution is to describe "culture" as an idealized systematization of an individual cognitive world, one that could enable an outsider to produce culturally appropriate responses in the range of social situations a native actor would encounter—to decide in culturally "grammatical" ways "what is, . . . what can be, . . . how one feels about it, . . . what to do about it, . . . and how to go about doing it." Thus what is shared is reduced to an idealized individual actor's point of view (one who, like Chomsky's hypothetical speaker-hearer, knows his culture perfectly). Goodenough's cognitive model would thus be a composite of the cultural knowledge of individuals in different social niches. Yet he, like the linguists, leaves room to deal with subcultural variations and individual differences (33, 34 37). Goodenough is by no means as simplistic a cognitive reductionist as Geertz portrays him to be:

> People learn as individuals. Therefore, if culture is learned, its ultimate locus must be in individuals rather than in groups. . . . Cultural theory must [then] explain in what sense we can speak of culture as being shared or as the property of groups . . . and what the processes are by which such sharing arises. . . . We must . . . try to explain how this analytically useful construct relates to . . . the social and psychological processes that characterize men in groups (37, p. 20).

[1]Goodenough carefully distinguishes seven related ideational senses of "culture" that systematically relate the cognitive worlds of individuals to the collective ideas and behavior of populations (37, pp. 41–42).

[2]Lévi-Strauss sees cultures as transcending individual actors, even as transcending in a sense ethnic boundaries; yet collective representations reflect and reveal the structures and processes of the individual minds of which they are cumulative creations.

[3]Geertz takes the alchemy of shared meanings as basic, but—following Wittgenstein, Husserl, and Ryle—not as mysterious. Public traffic in symbols is very much of this world, not (he would argue) of a Platonic reified imaginary one. Geertz presumably would agree that cultures are "located in time and space by the temporal and spatial distribution of the individuals bearing them" (6, p. 86): but cultures are, as it were, *between* the minds of these individuals, not *in* them. Schneider wants to go a step further, it seems, toward a "methodological essentialist" position (63, pp. 28–29) that a culture in some sense exists "in its own right

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The sterility of seeking common denominators in the substantive stuff of culture has been eloquently argued by Geertz (25).

To what degree universals of language would reflect innately specified rules, logics, or structures is open to serious debate. Chomsky has argued for detailed innate specification; Piaget and others have countered that general cognitive principles and strategies may underlie both linguistic competence and acquisition of other cognitive abilities; and Piaget contends that highly complex hierarchical cognitive systems are built on minimally programmed foundations through the progressive unfolding or more and more complex "theories" about the world, each built on and reorganized from the previous one (62). If there turn out to be important universals of cultural structure (in this formal, not substantive, sense), it is not yet clear how much genetic programming and how much progressive cognitive refinement would underlie them.

Such frontier questions underline the urgency of not divorcing a conception of culture from our burgeoning knowledge of the mind. Geertz, concerned to bring the enlightenment of phenomenology, linguistic philosophy, and hermeneutics to anthropology, would do well to remember that it has been revolutions in science (evolution, relativity, quantum theory, cybernetics, molecular biology, linguistics) that have progressively transformed modern philosophy, not the reverse. A revolutionary advance in our understanding of the organization of intelligence—in a broad cybernetic sense that includes coding at a genetic, cellular, organismic, and ecosystemic level as well as in mind and brain—is now in its early stages.[13] In the international quest—not interdisciplinary but *superdisciplinary*—to unite a formal theory of intelligence and communication with an emerging theoretical biology and the empirical sciences of cognition (4, 60, 64), the human brain and its opposite face, the mind, represent the ultimate challenge, the most complex known natural systems:

> The human brain integrates the facts that it acquires through experience and other forms of learning into a model of the world. New facts are interpreted in the light of the model ... Understanding ... such world models, their neutral organization, their dependence upon environment and culture, are fundamental and difficult questions that cut across many scientific disciplines (14, p. 437).

More than a decade ago, Geertz noted early advances on these fronts and their potential importance (23); and in 1965, he wrote that "culture is best seen not as complexes of concrete behavior patterns—customs, usages, traditions, habit clusters— ... but as a set of control mechanisms—plans, recipes, rules, instructions (what computer engineers call 'programs')—for the governing of behavior" (25, p. 57). But he has not, I think, fully explored the implications of these insights. We

[13] Intelligence in this sense refers not simply to brains, real or artificial, but to formal representations of systems that display "biological" or "mental" properties of self-organization, goal-direction, and information processing characteristic of living systems. "Formal biology in this sense ... would ... be ... a theory of *all* organisms, both natural and artificial" (51, p. 49).

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the data base of linguistic inquiry so that a large edifice teeters precariously on a thin edge of intuition.[16]

I am convinced that if anthropologists conceptualize culture as epistemologically and logically parallel to linguistic competence, they should do so only within a wider concern with sociocultural "performance." An ideational conception of culture "will serve us badly if we take the abstract system we have created out of the flux of the phenomenal world and examine 'it' to see how 'it' is put together. But 'culture' could serve us well if we use it to help untangle the vastly complex skeins of interconnectedness in that world" (48, p. 326).

I am thus agreeing with Schneider that cultures as ideational systems should be explored and mapped in their own terms, not in terms of the domains of social life; but I am disagreeing with his conclusion that the study of culture can profitably be pursued "uncontaminated" by the study of the social and ecological settings in which humans act.

Let me make my reasons explicit.

1. The questions that mainly concern anthropologists are only partly questions about cultures as ideational systems. We want to understand how human groups organize and sustain their social life; how biology and experience interact as individuals become functioning members of a society, and how the nature of that experience shapes personalities; how different—and how similar—are human modes of thought and perception in different times and places; how ways of life change, and what shapes the form they take in particular settings.

We cannot understand other people's lives simply by mapping their culture—though (contra Harris 40) we cannot understand or even adequately record events in their world without understanding their "internal models of reality" (see 15, 37). I have elsewhere illustrated this with Trobriand examples (47, p. 404; 50, p. 441). A competence model of Trobriand culture would tell us what classes of things, people, and events there are and what kind of a world they are situated in, and it would give rules for how to garden, trace descent, exchange, and reside. But it would tell us nothing about residence patterns, descent groups, agricultural production, or the flow of exchange—or even how many Trobrianders there are and where they live.

2. The magic of shared symbols, of minds meeting, is not a magic that occurs on some ethereal cultural plane; as Geertz, phenomenologists, and ethnomethodologists are vividly aware, it is a magic enacted in social settings. It is embedded in public encounters. "The mind is not even a metaphorical 'place' . . . The chessboard, the platform, the scholar's desk, the judge's bench, the lorry-driver's seat, the studio, and the football field are among its places" (70, quoted in 23). Meanings are shared by people whose conceptions of their culture are not identical; and that is more than a matter of common denominators or even of "equivalences" (84). But it is a magic achieved not in a hypothetical vacuum, a

[16] Or more precisely, on native speakers' competence in communicating their intuitions about sentences proferred by a linguist.

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symbolic realm, but in the collective application of the general to the particular, the private to the social.

3. To understand change and diversity, we must see cultures as elements in complex cybernetic systems of humans-in-environments. An ideational model of culture, in isolation, prevents our understanding change and adaptation. As part of a more complex conceptual scheme, however, such a model of culture enriches our understanding of change and helps us to correct overly simplistic ecological / adaptationist models.

Cultures must generate viable patterns-of-life in ecosystems (or more precisely, they must not generate nonviable ones). But that does not mean that natural selection prunes and shapes ideational systems in any simple and direct way. Patterns of sociallife in a community are not a simple enactment of shared cultural programs. As Homans has observed, "the central problem of the social sciences remains that posed, in his own language and in his own age, by Hobbes: Howdoes the behavior of individuals create the characterisitics of groups?" (46, p. 106). The behavior of individuals is guided, channeled, and constrained by cultural principles and rules about the game of life and how it is to be played. But it is individuals, making choices, pursuing strategies, maximizing values, forming coalitions, that generate the patterns of social life[17] (5, 7-9, 46). The rules of the game are themselves generated and changed by the patterns of play they guide, in a continuing dialectic.

It is how humans live, not how they conceptualize the game of life, that is directly shaped by selective pressures. Moreover, the superbrain that enables humans to solve survival problems in a wide range of environments imposes costs of its own: ritual, myth, cosmology, and magic may be adaptations to the pressures of the human psyche—to anxieties, frustrations, fears, and questionings—as much as they are adaptations to the pressures of the external environment.

4. To study cultures as ideational systems without mapping the complex cybernetic circuits[18] that link them to social systems, to ecosystems, and to the psychology and biology of individuals would turn cultural analysis into an arcane pursuit isolated from surrounding disciplines at a stage when a fantastic burst of scientific knowledge—with human survival as the stakes—is being launched: a burst that should relegate to the realm of Ptolemaic astronomy (or at least pre-Watson-Crick genetics) previous theories in ecology, the neurosciences, psychology, and related fields.

5. In the course of this advance, an irony may loom increasingly large: cultures as systems of knowledge may turn out to be only partly describable in the formal languages we command. Despite impressive progress in cybernetic modeling of the way the central nervous system processes and organizes information, there is a vast gulf between the models and what the brain achieves efficiently and almost

[17] Cf Freilich's distinction between "proper" and "smart" in his rather different conceptualization of the cultural and social realms (21).

[18] In the sense explored by Rappaport (66-68).

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instantly. Some progress is being made to close this gap, and to unravel the mysteries of the living brain[19] (see, e.g. 4, 64).

But even as scientists begin to write ethnographies for robots and to explore mathematically and biologically the structure of "memory" (61, 64, 79)—of internal models of reality—many facets of mind resist formal representation. Interestingly, it is not the highly intellective logical functions of mind, but the evolutionarily old, unconscious, "automatic" functions that resist analysis.[20]

That suggests that there may be some fundamental obstacles, perhaps more evolutionary than Gödelian, to our laying bare in any formal way what humans "know" that enables them to do what they do. George Miller's warnings vividly suggest the dilemma:

> Given that we can know rules that have not yet been formulated [as in our implicit knowledge of grammatical rules], could we know rules that govern the operations of the human mind that the human mind, given its present level of intelligence and symbolic machinery, cannot make explicit? (58, p. 192).[21]

The point is not to digress about artificial intelligence research, but to warn that despite a vast concentration of brainpower, the possibility of analyzing a cultural system in any complete sense and of discovering and describing its structure remains far on the horizon—and may forever remain so. To abstract out a level of "cultural symbols" in the way Schneider proposes seems to me to offer a spurious sense of escape from this dilemma. That the anthropologist's mind can invent such a "level" attests to the remarkable powers that make humans human; but it does little to clarify how they perceive, think, and act.

It is partly Geertz' realization that the cultural grammars of the "new ethnographers" are so impossible to achieve in the face of the vast intricacy of what humans know about their world—the subtle shadings of understanding and mood and meaning that defy representation in formal algorithms—that leads him to aspire at most to thick description, to interpretation rather than "decoding" or explanation. I disagree with him if that means abandoning to cyberneticians the task of progressively filling in those segments and sectors that yield to under-

[19] Cybernetic modeling helps to clarify the relationship of "mind language" to "brain language"; but as Mackay (55, p. 465) argues, even if all operations of mind could ultimately be linked to processes of brain, there would still be an important need for "mind language." Neurophysiological reductionism is as defeating as any other form of reductionism.

[20] "Good progress has been made in the art of programming. For instance, it took an automaton only a few minutes to prove over 200 theorems from Whitehead & Russell's *Principia Mathematica,* some of these proofs being even more elegant than the known ones. But the robot's ability has peculiar limits. For example, no automaton has so far been built which in the matter of reading handwritten addresses can match even a mediocre post office sorter. . . Some functions . . . having a primitive and far from intellectual nature, are much more difficult to automate than certain other functions which we regard as typically intellectual. . . . *It is for those functions which take place unconsciously that no satisfactory automata have been built*" (74, p. 46; cf 17, 85).

[21] Von Foerster's cryptic remark expresses the same insight: "The Laws of Nature are written by man. The laws of biology must write themselves" (82, p. 5).

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and in societies of every degree of complexity, indicates to me that we are up against something very profound, very stubborn, something that can not be remedied merely by rearranging a few tasks and roles in the social system, nor even by rearranging the whole economic structure.

First, it is important to sort out the levels of the problem. The confusion can be enormous. For example, depending on which aspect of Chinese culture we looked at, we might extrapolate entirely different guesses concerning the status of women in China. In the ideology of Taoism, yin, the female principle, and yang, the male principle, are given equal weight; "The opposition, alternation, and interaction of these two forces give rise to all phenomena in the universe."[2] Hence we might guess that maleness and femaleness are equally valued in the general ideology of Chinese culture. Looking at the social structure, on the other hand, we see the strong patrilineal descent principle, the importance of sons, and the patripotestal structure of the family. Thus we might conclude that China is the archetypal patriarchal society. Next, looking at the actual roles played, power and influence wielded, and material contributions made by women in Chinese society, all of which are, upon observation, quite substantial, we are tempted to say that women "really" are allotted a great deal of (unspoken) status in the system. Or again, we might focus on the fact that a goddess, Kuan-yin, is the central (most-worshipped, most depicted) deity in Chinese Buddhism, and we might be tempted to say, as many have tried to say about goddess-worshipping cultures in pre- and early-historical societies, that "actually" China is a sort of matriarchy. In short, we must be absolutely clear about what we are trying to explain, before explaining it.

We may isolate three levels of the problem. (1) The universal fact of culturally attributed second-class status to woman in every society. Two questions are important here. First, what do we mean by this, what is our evidence that this is a universal fact? And second, how are we to explain the fact having established it? (2) Specific ideologies, symbolizations, and social structural arrangements pertaining to

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First it is important to sort the levels of the problem, no matter the gravity and/or culture.

women which vary widely from culture to culture. The problem at this level is to account for any particular cultural complex in terms of factors specific to that culture--the standard level of anthropological analysis. And (3) observable on-the-ground details of women's activities, contributions, powers, etc., often at variance with cultural ideology, and always constrained within the assumption that women may never be officially pre-eminent in the total system. This is the level of direct observation, often adopted now by feminist-oriented anthropologists.

This paper is primarily concerned with the first level of the problem: the universal devaluation of women. It thus depends not upon specific cultural data but rather upon an analysis of "culture" taken generically as a special sort of process in the world. A discussion of the second level, the problem of cross-cultural variation in conceptions and relative valuations of women, must be postponed for another paper, since it will entail a great deal of cross-cultural research. As for the third level, it will be obvious from my approach that I would consider it a misguided endeavor to focus only upon women's actual, though culturally unrecognized and unvalued, powers in any given society, without first understanding the overarching ideology and deeper assumptions of the culture that renders such powers trivial.

What do I mean when I say that everywhere, in every known culture, woman is considered in some degree inferior to man? First of all I must stress that I am talking about cultural evaluations; I am saying that each culture, in its own way and in its own terms, makes this evaluation. What would constitute evidence, when we look at any particular society, that it considers women inferior?

Three types of data would be evidence: a) elements of cultural ideology and informants' statements that explicitly devalue women, according them,their roles, their tasks, their products, and their social milieu less prestige than men and the male correlates; b) symbolic devices, such as the attribution of defilement, which may be interpreted as making a statement of in-

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of other dolls but of all other Crow medicines whatsoever....This particular doll was not supposed to be handled by a woman....[3]

In sum, the Crow probably provide a fairly typical case. Yes, women have certain powers and rights, in this case some that place them in comparatively high positions. Yet ultimately the line is drawn; menstruation is a threat to warfare, one of the most valued institutions of the tribe--one central to their self definition--and the most sacred object of the tribe is tabooed to the direct sight and touch of women.

Similiar examples could be multiplied ad infinitum, but I think it is time to turn the tables. The onus is no longer upon us to demonstrate that female subordination is a cultural universal; it is up to those who would argue against the point to bring forth counter-examples. I shall take the universal secondary status of women as a given, and proceed from there.

If the devaluation of women relative to men is a cultural universal, how are we to explain this fact? We could of course rest the case on biological determinism: There is something genetically inherent in the males of the species that makes them the naturally dominant sex; that "something" is lacking in females, and, as a result, women are not only naturally subordinate but, in general, quite satisfied with their position, since it affords them protection and the opportunity to maximize the maternal pleasures that to them are the most satisfying experiences of life. Without going into a detailed refutation of this position, it is fair to say that it has failed to convince very few in academic anthropology. This is not to say that biological facts are irrelevant, nor that men and women are not different; but it is to say that these facts and differences only take on significance of superior/inferior within the framework of culturally defined value systems.

If we are not willing to rest the case on genetic determinism, it seems to me that we have only one other way to proceed. [1]We must attempt to interpret female subordination in light of other universals of the human condition, factors built into the structure of the most generalized situation that all human beings,

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Reading 1.1

Race, History, and Culture

CLAUDE LÉVI-STRAUSS

A culture's chance of uniting the complex body of inventions of all sorts which we describe as a civilization depends on the number and diversity of the other cultures with which it is working out a common strategy.

RACE AND HISTORY[1]

The development of human life is not everywhere the same but rather takes form in an extraordinary diversity of societies and civilizations. This intellectual, aesthetic and sociological diversity is in no way the outcome of the biological differences, in certain observable features, between different groups of men; it is simply a parallel phenomenon in a different sphere. But, at the same time, we must note two important respects in which there is a sharp distinction. First, the order of magnitude is different. There are many more human cultures than human races, since the first are to be counted in thousands and the second in single units. . . . Second, in contrast to the diversity of races, where interest is confined to their historical origin or their distribution over the face of the world, the diversity of cultures gives rise to many problems; it may be wondered whether it is an advantage or a disadvantage for human kind. . . .

Last and most important, the nature of this diversity must be investigated even at the risk of allowing the racial prejudices whose biological foundation has so lately been destroyed to develop again on new grounds. . . . We cannot therefore claim to have formulated a convincing denial of the inequality of the human *races,* so long as we fail to consider the problem of the inequality—or diversity—of human *cultures,* which is in fact—however unjustifiably—closely associated with it in the public mind. . . .

1 COLLABORATION BETWEEN CULTURES

A culture's chance of uniting the complex body of inventions of all sort which we describe as a civilization depends on the number and diversity of the other cultures with which it is working out, generally involuntarily, a common strategy. Number and diversity: a comparison of the Old World with the New on the eve of the latter's discovery [in 1492] provides a good illustration of the need for these two factors.

Europe at the beginning of the Renaissance was the meeting-place and melting pot of the most diverse influences: the Greek, Roman, Germanic and Anglo-Saxon traditions

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combined with the influences of Arabia and China. Pre-Columbian America enjoyed no fewer cultural contacts, quantitatively speaking, as the various American cultures maintained relations with one another and the two Americas together represent a whole new hemisphere. But, while the cultures which were cross-fertilizing each other in Europe had resulted from differentiation dating back several tens of thousands of years, those on the more recently occupied American continent had had less time to develop divergencies; the picture they offered was relatively homogeneous. Thus, although it would not be true to say that the cultural standard of Mexico or Peru was [in 1492] inferior to that of Europe at the time of the discovery (we have in fact seen that, in some respects, it was superior), the various aspects of culture were possibly less well organized in relation to each other. . . . Their organization, less flexible and diversified, probably explains their collapse before a handful of conquerors. And the underlying reason for this may be sought in the fact that the partners to the American cultural "coalition" were less dissimilar from one another than their counterparts in the Old World.

No society is therefore essentially and intrinsically cumulative. Cumulative history is not the prerogative of certain races or certain cultures, marking them off from the rest. It is the result of their *conduct* rather than their *nature*. It represents a certain "way of life" of cultures which depends on their capacity to "go along together." In this sense, it may be said that cumulative history is the type of history characteristic of grouped societies—social super-organisms—while stationary history (supporting it to exist) would be the distinguishing feature of an inferior form of social life, the isolated society.

The one real calamity, the one fatal flaw which can afflict a human group and prevent it from achieving fulfillment is to be alone.

We can thus see how clumsy and intellectually unsatisfactory the generally accepted efforts to defend the contributions of various human races and cultures to civilization often are. We list features, we sift questions of origin, we allot first places. However well-intentioned they may be, these efforts serve no purpose for, in three respects, they miss their aim.

In the first place, there can never be any certainty about a particular culture's credit for an invention or discovery. . . . In the second place, all cultural contributions can be divided into two groups. On the one hand we have isolated acquisitions or features, whose importance is evident but which are also somewhat limited. . . . At the other end of the scale (with a whole series of intermediates, of course), there are systematized contributions, representing the peculiar form in which each society has chosen to express and satisfy the generality of human aspirations. There is no denying the originality and particularity of these patterns, but, as they all represent the exclusive choice of a single group, it is difficult to see how one civilization can hope to benefit from the way of life of another, unless it is prepared to renounce its own individuality. Attempted compromises are, in fact, likely to produce only two results: either the disorganization and collapse of the pattern of one of the groups; or a new combination, which then, however, represents the emergence of a third pattern, and cannot be assimilated to either of the others. The question with which we are concerned, indeed, is not to discover whether or not a society can derive benefit from the way of life of its neighbours, but whether, and if so to what extent, it can succeed in understanding or even in knowing them. . . .

WORLD CIVILIZATION

Finally, wherever a contribution is made, there must be a recipient. But, while there are in fact real cultures which can be localized in time

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consider whether the relation between organic evolution and cultural evolution is not merely analogical, but also complementary. . . .

In the dawn of humanity, biological evolution perhaps selected such pre-cultural traits as upright posture, manual dexterity, sociability, the capacity to think in symbols, speech and the ability to communicate. But once a culture existed, these traits were consolidated and propagated by cultural factors. When cultures became specialized, it was again cultural factors which consolidated and encouraged other traits, such as resistance to heat or cold for those societies which had willy-nilly to adapt themselves to extreme climatic conditions; aggressive or contemplative dispositions, technical ingenuity etc. None of these traits, as perceived at a cultural level, can clearly be attributed to a genetic basis, although we cannot exclude the possibility that such a connexion—even if partial, remote and indirect—may sometimes exist. In that case, it would be true to say that every culture selects genetic aptitudes which then, by reflex action, influence those cultures by which they were at first stimulated.

AN IDEOLOGICAL COVER

By pushing back the earliest beginnings of humanity to an ever more remote past—according to recent estimates, some millions of years ago—physical anthropology has undermined one of the principal bases for racialist theory, since the number of unknowable factors concerned thus increases much more rapidly than the number of landmarks available to stake out the paths followed by our earliest ancestors in the course of their evolution.

Geneticists delivered even more decisive blows to these theories when they replaced the concept of type by that of population and the concept of race by that of the genetic stock, and again when they demonstrated that there is a gulf between hereditary differences attributable to a single gene—which are of little significance from the point of view of race, since they probably always have an adaptive value—and those attributable to the combined action of several, which makes it virtually impossible to determine them. . . .

Only in the last ten years have we begun to understand that we were discussing the problem of the relation between organic and cultural evolution in terms which Auguste Comte would have described as metaphysical. Human evolution is not a by-product of biological evolution, but neither is it completely distinct from it. A synthesis of these two traditional points of view is now possible, provided that biologists are not content with answers not based on fact, or with dogmatic explanations, and realize both the help they can give each other and their respective limitations.

The unsatisfactory nature of the traditional solutions to the problem perhaps explains why the ideological struggle against racialism has proved so ineffective on a practical level. There is nothing to indicate that racial prejudice is declining and plenty of evidence to suggest that, after brief periods of localized quiescence, it is reappearing everywhere with increased intensity. It is for this reason that UNESCO feels called upon to renew from time to time a battle whose outcome appears uncertain, to say the least.

But can we be so sure that the racial form taken by intolerance results primarily from false beliefs held by this or that people about the dependence of culture on organic evolution? Are these ideas not simply an ideological cover for a more real form of antagonism, based on the will to subjugate and on relations of power? This was certainly the case in the past, but, even supposing that these relations of power become less marked, will not racial differentiation continue to serve as a pretext for the growing difficulty of living together, unconsciously felt by mankind, which is undergoing a demographic explosion and

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which . . . is beginning to hate itself, warned by a mysterious prescience that its numbers are becoming too great for all its members to enjoy freely open space and pure, non-polluted air?

[1] Racial prejudice is at its most intense when it concerns human groups confined to a territory so cramped and a share of natural resources so meager that these peoples lack dignity in their own eyes as well as in those of their more powerful neighbours. But does not humanity today, on the whole, tend to expropriate itself and, on a planet that has grown too small, reconstitute, to its own cost, a situation comparable to that inflicted by some of its representatives on the unfortunate American or Oceanic tribes? Finally, what would happen to the ideological struggle against racial prejudice, if it were shown to be universally true—as some experiments conducted by psychologists suggest—that if subjects of any origin whatever are divided into groups, which are placed in a competitive situation, each group will develop feelings of bias and injustice towards its rivals?

Minority groups appearing in various parts of the world today, such as the hippies, are not distinguished from the bulk of the population by race, but only by their way of life, morality, hair style and dress; are the feelings of repugnance and sometimes hostility they inspire in most of their fellows substantially different from racial hatred? Would we therefore be making genuine progress if we confined ourselves to dissipating the particular prejudices on which racial hatred—in the strict sense of the term—can be said to be based?

THE MIRAGE OF UNIVERSAL ENTENTE

In any case, the contribution ethnologists can make to the solution of the race problem would be derisory; nor is it certain that psychologists and educators could do any better, so strong is the evidence—as we see from the evidence of the so-called primitive peoples—that mutual tolerance presupposes two conditions which in contemporary society are further than ever from being realized: one is relative quality; the other is adequate physical separation. . . .

No doubt we cherish the hope that one day equality and fraternity will reign among men without impairing their diversity. But if humanity is not to resign itself to becoming a sterile consumer of the values it created in the past and of those alone . . . , it will have to relearn the fact that all true creation implies a certain deafness to outside values, even to the extent of rejecting or denying them. For one individual cannot at the same time merge into the spirit of another, identify with another and still maintain his own identity. Integral communication with another, if fully realized, sooner or later dooms the creative originality of both. The great creative epochs in history were those in which communication had become adequate for distance individuals to stimulate each other, but not frequent or rapid enough for those obstacles, indispensable between groups, to be reduced to the point at which diversity becomes leveled out and nullified by excessively facile interchange.

[2] Convinced that cultural and organic evolution are inextricably linked, [biologists and ethnologists] know, of course, that a return to the past is impossible, but they know, too, that the course humanity is at present following is building up tensions to such a degree that racial hatred is a mere foretaste of the greater intolerance that may hold sway tomorrow, without even the pretext of ethnic differences. To forestall the dangers threatening us today and those, still more formidable, that we shall have to face tomorrow, we must accept mere ignorance or prejudice: we can only hope for a change in the course of history, which is even more difficult to bring about than progress in the march of ideas.

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