Paradigms in Collision: The Far-reaching Controversy over the Samoan Researches of Margaret Mead and Its Significance for the Human Sciences

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In September of 1983, Victor Turner, a gifted British social anthropologist who had become professor of anthropology at the University of Virginia, published a historic essay entitled "Body, Brain, and Culture." I say "historic," because it was Victor Turner's last essay, and because in it, drawing on the researches of the evolutionary neuroscientist Paul MacLean, Turner radically questioned the principal assumption that he and other anthropologists of the twentieth century had been "taught to hallow," the assumption that "all human behavior is the result of social conditioning."

Earlier that year, Harvard University Press had published a book of mine, *Margaret Mead and Samoa: The Making and Unmaking of an Anthropological Myth*, in which I presented a refutation of Margaret Mead's long accepted apparent proof of this same assumption in her 1928 book, *Coming of Age in Samoa*. In it, citing the researches of MacLean and others, I argued for the adoption by anthropology and all the human sciences of an interactionist paradigm in which both biology and culture are taken into account. Since then, there has been a steadily increasing recognition of the virtues of this new paradigm, and there are clear signs that the human sciences are undergoing a paradigm shift.

According to Marxist doctrine, it is "social existence" that determines "human consciousness," and by the Bolsheviks of Soviet Russia it was fervently believed that under communism, human nature would radically and permanently change. By the early 1930s American observers who had visited Russia were claiming that this had already begun to happen: "mental hygiene," it was said, was "inherent in the social organization." We have now witnessed the collapse of communism, and have heard Gorbachev admit to the world at

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large that the experience of history has allowed the Russian people to say "in a decisive fashion" that the Communist "model" has "failed." As it had to fail, I would suppose, because, among other things, of the false assumption about human nature on which it was based.

We live in revolutionary times—especially for those with an interest in the scientific understanding of human nature.

The assumption that "all human behavior is the result of social conditioning" may be traced back to the eminent British philosopher John Locke. It was in an essay written in about 1660, long before there was any understanding of evolution and the brain, that John Locke, then in his late twenties, first promulgated the wholly unevolutionary doctrine that humans are born *tabula rasa*, "empty tablets capable of receiving all sorts of imprints but have none stamped on them by nature." It was this doctrine that at the beginning of this century became the principal assumption of the founders of cultural and social anthropology.

In 1915, Franz Boas's foremost student, Alfred Kroeber, in attempting to establish that culture is *sui generis*, had declared in the *American Anthropologist* that "heredity cannot be allowed to have acted any part in history." It was to seek empirical justification for this assumption that in mid-1925 Professor Franz Boas of Columbia University sent his twenty-three-year-old student, Margaret Mead, to the Samoan Islands to undertake "a study in heredity and environment based on an investigation of the phenomenon of adolescence among primitive and civilized peoples." The idea was that if an instance could be found that was an exception to a supposed universal phenomenon, namely, the turbulence of adolescence, then this would prove that the phenomenon in question was entirely due to cultural forces.

Margaret Mead arrived on the island of Ta'ū where her researches were to be carried out, on 9 November 1925, and left in mid-April 1926 with not more than a total of some twelve weeks having been devoted to the actual investigation of Boas's problem.

In 1928 in her *Coming of Age in Samoa*, which became the anthropological bestseller of all time, Mead concluded, in complete accord with Lockean doctrine, that "we cannot make any explanations" of the "disturbances" of adolescence other than in terms of the "social environment," which, she claimed, shaped "the individual within its bounds" in an "absolute" way. "Human nature" was, she declared, "the rawest, most undifferentiated of raw material."

In 1930, Mead's extreme environmentalist conclusion was incorporated in the *Encyclopedia of the Social Sciences*, and in this same *Encyclopedia*, in discussing human personality, Franz Boas himself declared "genetic elements" to be "altogether irrelevant as compared with the powerful influence of the environment." By the mid-1930s then, with virtually universal credence being given to Mead's Samoan researches, the notion that "all human behavior is

the result of social conditioning" had become completely dominant in anthropology as well as in other of the social sciences.

If Mead's conclusion of 1928 had been correct it would have been the most important conclusion of twentieth-century anthropology. It is now known that Mead's long-influential conclusion was wholly false. In 1983 I was able to demonstrate in detail that Mead's extreme conclusion was very definitely not supported by the relevant ethnographic evidence. And since then, there have been even more significant developments.

It had long been a major mystery that Mead's account of Samoan sexual behavior, on which her conclusion rests, is radically at odds with the reports of all other ethnographers. This mystery was solved in 1987, when Fa'apua'a Fa'amū, who is listed in *Coming of Age in Samoa* as one of her principal informants, came forward to confess that in March of 1926, as a prank, she and her friend Fofoa, had completely hoaxed Margaret Mead by telling her, when she questioned them, the antithesis of the truth about Samoan sexual behavior and values.

In Samoa the playing of such pranks, which they call *taufa'ase'e*, is commonplace. Margaret Mead had arrived in Samoa with the preconception, which she had acquired from a fellow anthropologist in Hawaii, that the Samoans, being Polynesians, were sexually promiscuous. In fact, in Samoa at that time, female virginity was very highly valued, as in their *taupou* system, and they had an exceedingly strict sexual morality. And so when Mead put to Fa'apua'a, who was herself a *taupou* or ceremonial virgin, the supposition that she was promiscuous, she and Fafoa, with sidelong glances and pinching one another, set about hoaxing her. They had no idea, says Fa'apua'a, that Margaret Mead was an author and that their wild untruths would be published as facts in an immensely influential book.

After Fa'apua'a's testimony had been carefully checked by Leulu Felisi Va'a of the National University of Samoa, detailed accounts of what transpired between Mead and her Samoan informants have been published in the *American Anthropologist* and in *Visual Anthropology Review*, both publications of the American Anthropological Association, and a sworn deposition by Fa'apua'a Fa'amū has been lodged with the American Anthropological Association in Washington, D.C.

Here we are dealing with one of the most spectacular events in the intellectual history of the twentieth century. Margaret Mead, we now know, was grossly hoaxed by her Samoan informants; and Mead, in her turn, by convincing others of the "genuineness" of her account of Samoa, completely misinformed and misled virtually the entire anthropological establishment, as well as the intelligentsia at large, including such sharp-minded skeptics as Bertrand Russell and H. L. Mencken.

That a Polynesian prank should have produced such a result in centers of higher learning throughout the Western world is deeply comic. But, behind

the comedy there is a chastening reality. It is now apparent that for decade after decade in countless textbooks and in university and college lecture rooms throughout the Western world, students were misinformed about an issue of fundamental human importance, by professors who, by placing credence in Mead's conclusion of 1928, had themselves become deluded.

Never can giggly fibs have had such far-reaching consequences in the groves of Academe.

Yet, the playing of pranks on inquisitive Europeans has long been an endearing characteristic of Polynesians. In the late eighteenth century, for example, when in Western Polynesia, Labillardière, a "natural philosopher" of the French Enlightenment, set about the recording of Tongan terms for numerals. This he single-mindedly continued until he reached the improbable total of one thousand, million, million. He then communicated his findings to the Academy of Sciences in Paris, not realizing that the Tongan phrases he had assiduously recorded, were, for the most part, a string of ribald obscenities.

The concept of the paradigm, as used by Thomas Kuhn in his classic work of 1962, *The Structure of Scientific Revolutions*, refers to a ruling idea that gives rise to a coherent tradition of research. This clearly applies to the idea that "all human behavior is the result of social conditioning," which, as Victor Turner noted in 1983, he and other anthropologists of the twentieth century had been "taught to hallow." It is this Lockean paradigm that, from about 1983 onwards, has been in collision with a quite different interactionist paradigm in which recognition is given to biological as well as to cultural variables.

I say "in collision" advisedly, for the protracted controversy over my now fully vindicated refutation has revealed striking evidence of the extraordinary hold that a paradigm can have over its devotees, and of the highly emotional way in which a new paradigm, which is at odds with one of their most hallowed assumptions, is actively opposed and resisted.

In his book of 1976, *The Selfish Gene*, Richard Dawkins coined the word *meme* to refer to any element of human cultural transmission, including ideas and beliefs. And in 1985 in *The Fabric of Mind*, Richard Bergland introduced the term *mismeme* to refer to any persistent error in the history of human thought, as, for example, Plato's mistaken notion that semen is generated in the brain, a mismeme that is illustrated in an anatomical drawing by Leonardo Da Vinci, now in the Royal Library at Windsor, that dates from 1493, some 1,840 years after Plato's death in 347 B.C. Some mismemes, it is evident, have a long shelf life.

In the light of our present knowledge, it is now evident that Dr. Mead's ostensibly scientific conclusion in *Coming of Age in Samoa* is, in fact, a mismeme that persisted at the center of the belief system of cultural anthropology for some fifty-five years. This means that we are afforded a rare and valuable

opportunity for studying what happens when a mismeme that has become the hallowed dogma of an academic discipline is decisively disproved. In writing my refutation I was, of course, well aware of how difficult it is to alter deeply entrenched beliefs, but I supposed, quite naïvely as it turned out, that if I presented sufficiently cogent evidence, it would be critically examined, and, if free from error, rationally accepted.

When Margaret Mead returned to New York from New Guinea in 1929, she found herself being feted as she participated in symposia with such celebrities as Havelock Ellis, Bertrand Russell, and J. B. Watson, most of whom were older than her own father. From this dreamlike beginning in the late 1920s, Margaret Mead, who was certainly a most remarkable human being, went on to become, in the words of her biographer Jane Howard, "indisputably the most publicly celebrated scientist in America" and "an American icon." In a leaflet of the American Museum of Natural History, she is said to have been "the mother of *all* humanity." And when I was in America in 1987 I came across a reference to her in the *Chicago Tribune* as having been "earth-mother to the cosmos." She thus came to be viewed, during the last decades of her life, as, in the words of one professor, "the Mother-Goddess of American Anthropology." Then, in 1983, without warning and for all to witness, the Meadian reverie about Samoa was shattered. For American anthropologists, this was, as Theodore Schwartz has termed it, "a seismic event."

Ian Jarvie, a leading philosopher of the social sciences, has argued that cultural anthropologists make up a tribe "held together by a cult." This cult is the cult of culture. Infuriated by what had happened, some American anthropologists turned to rhetorically restoring the mystical aura of their totemic mother and the popular repute of her long-acclaimed *magnum opus*, while at the same time doing everything imaginable to discredit me. This onslaught, which began in February 1983 and was sustained over many months, was flagrantly *ad hominem*. Anyone who seriously questions the pronouncements of a mother-goddess is obviously of unsound mind. Thus I was said to be "crazy," to be "fueled by accumulated venom," to "throw nothing but spit balls," to have sought to bribe Samoan academics, and—most imaginatively of all—to have "attacked a missionary with an axe"!

At first, this outpouring of spleen was a bit difficult to take. I fully realized, however, that while it was intended to intimidate and unnerve me, those who were resorting to these excesses had no arguments of any substance with which to rebut my refutation. I soon, therefore, came to regard it as both puerile and comic that such grossly *ad hominem* tactics were being resorted to by Ph.D.'s, no less, in what was already being called the greatest controversy in the history of anthropology.

The tribal reaction to my refutation reached its apogee in Chicago in November of 1983, when, during the eighty-second annual meeting of the

American Anthropological Association, a special session devoted to the evaluation of my refutation and attended by a thousand or more was held. The session began conventionally enough, but the general discussion degenerated into a delirium of vilification. One eye-witness has described it as "a sort of grotesque feeding frenzy"; another wrote to me saying, "I felt I was in a room with...people ready to lynch you." At the annual business meeting of the American Anthropological Association later that day a motion denouncing my refutation as "unscientific" was moved, put to the vote, and passed.

It is to this event that I particularly want to direct attention, because of the understanding it provides about what, following Kroeber, I shall call "the anthropological attitude of mind." As well as being cultural determinists, most cultural anthropologists also adhere to a related doctrine known as cultural relativism. According to this doctrine all knowledge is relative to the culture in which it is generated, and this applies even to the truth. I shall call this the tribal theory of truth. It is this relativist anthropological attitude that gives rise to the highly unscientific notion that the scientific status of propositions can be settled by a show of hands at a tribal get-together.

Commenting on this reaction, Sir Karl Popper wrote to me:

> Many sociologists and almost all sociologists of science, believe in a relativist theory of truth. That is, truth is what the experts believe, or what the majority of the participants in a culture believe. Holding a view like this your opponents could not admit that you were right. How could you be, when all their colleagues thought like they did? In fact, they could *prove* that you were wrong simply by taking a vote at a meeting of experts. That clearly settled it. And your facts? They meant nothing if sufficiently many experts ignored them, or distorted them, or misinterpreted them.

This is a succinct account of what indeed happened, and it is now evident that the frenetic reactions of November 1983 were desperate gestures of denial in a futile attempt to conjure me and my perturbing refutation right out of tribal consciousness. In this the zealots in question have signally failed, for with the publication (in the *American Anthropologist* and elsewhere) of an authenticated account of how Margaret Mead was hoaxed by her Samoan informants, the controversy over my refutation is, in effect, over, and there are now moves afoot to rescind the motion of 1983 that so compromised the scholarly reputation of the American Anthropological Association.

As Darwin once remarked: "It's dogged as does it," and it is indeed true that, with perseverance, the truth *will* out.

There remains, however, the phenomenon of paradigm hold: that is, the way in which many individuals cling adamantly to a paradigm that has been shown to be completely inadequate. Paul MacLean, whose magnum opus, *The Triune Brain in Evolution*, was published in 1990, is of the view that it is our primitive limbic brain that "provides the feeling of conviction and belief that we attach to our ideas whether they be true or false." This phylogenetically-

given propensity to believe, which is so evident in religion and politics, is something, it is important to recognize, to which scientists and scholars are also prone, and which is ever liable to lead them into misconception and error.

We now know that Mead's conclusion of 1928 was in error. Is there, thus, any scientific justification for clinging, as many still do, to the doctrine that "all human behavior is the result of social conditioning"?

"Light will be thrown," Darwin wrote at the end of The Origin of Species, "on the origin of man and his history"; and in 1863 in his book Man's Place in Nature, T. H. Huxley showed "that no absolute structural line of demarcation...can be drawn between the animal world and ourselves." Scientific research during the 128 years since the publication of Huxley's Man's Place in Nature has conclusively established the fact of evolution, and the fact that we humans are indeed part of the natural order. This being so, it is from this crucial realization that all our thinking about human problems must begin. And we must, in attempting to solve them, be evolution-minded.

This realization has been immensely strengthened by the rise of molecular biology following Crick and Watson's 1953 discovery of the structure of DNA. A decade or so after this discovery, molecular geneticists began to realize that the chemicals of which plants and animals are composed might provide "clocks" by which to measure genetic distances and to date times of evolutionary divergence. The now flourishing *Journal of Molecular Evolution* began publication in 1971.

The principal method of measuring changes in DNA structure consists in mixing the DNA from two species and then measuring by how many degrees of temperature the melting point of the hybrid DNA is reduced below the melting point of pure DNA from a single species. C. G. Sibley and J. E. Ahlquist of Yale University first applied this method to the taxonomy of birds, examining no fewer than seventeen hundred species. Then, in the 1980s, they applied this by then fully tested method to the order of primates, to which we humans belong. Their results show that humans differ from chimpanzees in only 1.6 percent of their DNA. The remaining 98.4 percent of our genes we share with chimpanzees. For example, our hemoglobin, the oxygen-carrying protein that gives blood its red color, is identical in all 287 units. This means that we are more closely related genetically to chimpanzees than are chiffchaffs to willow warblers that differ by 2.6 percent, yet are placed in the same genus.

There are thus, if we follow the principles of cladistics and basic taxonomy on genetic distance or time of divergence, solid grounds for including humans in the same genus with the two existing species of chimpanzee—the common chimpanzee of Tanzania and the so-called pigmy chimpanzee of Zaire—as does Jared Diamond, a professor of physiology at the University of California at Los Angeles, in his book, *The Rise and Fall of the Third Chimpanzee.*

Molecular biology and evolutionary genetics thus indicate that the human and chimpanzee evolutionary lines diverged as recently as six to eight million years ago, and the fact that we share 98.4 percent of our genes with these evolutionary cousins of ours establishes that while the differences between humans and chimpanzees are conspicuous and substantial, they are not as profound as was once thought, and that as Jane Goodall concludes in her recently published account of her thirty years of research among the chimpanzees of Gombe, "similarities in the brain and central nervous system have led to the emergence of similar intellectual abilities, sensibilities and emotions."

What can also be said is that we humans, like our chimpanzee cousins, far from being empty tablets at birth, are born with a phylogenetically-given primate nature, components of which remain with us throughout our lives beneath all of the conventional behaviors we acquire by learning from other members of the society to which we belong.

This realization is already having a profound effect in the behavioral sciences, for example, in the researches of John Bowlby and others on attachment behavior and the primary bond. As Bowlby himself has put it: "Once we postulate the presence within the organism of an attachment behavioral system regarded as the product of evolution and having protection as its biological function, many of the puzzles that have perplexed students of human relationships are found to be solvable."

The human genome project, which involves the efforts of hundreds of scientists around the world to "read" the entire library of genetic information stored in the twenty-three pairs of human chromosomes, has been accompanied by an acceleration of research on a wide range of human conditions, such as Huntington's chorea, motor neurone disease, and William's syndrome, all of which are gene-linked and, in varying degrees, have behavioral components. Indeed, scarcely a month passes without some new linkage being announced.

Again, since it was set up at the University of Minnesota in 1979, the Minnesota Study of Twins Reared Apart (which means that the interaction of heredity and environment can be studied in fine detail) has done research on over one hundred sets of such monozygotic twins. In a report on this research, published in *Science* in October of 1990, Thomas Bouchard and his colleagues conclude that "for almost every behavioral trait so far studied...an important fraction of the variation among people turns out to be associated with genetic variation." In another report published in 1990 in the *Journal of Personality*, Bouchard and Thomas McGue conclude that "most behavioral genetic studies of personality suggest that genetic factors account for about fifty percent of the variance," and that from recent research, mainly published during the 1980s and early 1990s, "there is now a large and consistent body of evidence that supports the influence of genetic factors upon personality." The evidence taken as a whole is, they state, "overwhelming," and so much so, that "the

interesting scientific question is no longer whether or not genetic factors influence behavioral traits like personality, but rather how environmental factors combine and interact to influence behavioral differences among individuals."

Of the fact that environmental variables are crucially important there can be no doubt. Professor Marian Diamond, in her recent book *Enriching Heredity*, has shown that providing an enriched environment by "allowing rats to interact with toys in their cages produced anatomical changes in the cerebral cortex." And Judy Dunn and Robert Plomin, both professors of human development at Pennsylvania State University, have shown in *Separate Lives: Why Siblings Are So Different*, published in 1990, that it is differences in experiences, or in nonshared environment, that significantly accounts for the differences between siblings reared in the same family. Modern research has then decisively established that heredity and environment interact to modify behavior at every stage of development, and that, in the words of Robert Plomin, "genetic effects depend upon the environment, and *vice versa*."

This means, of course, that Mead's extreme environmentalist conclusion of 1928 cannot conceivably have been correct. And it also means that all of the human sciences, if they are to remain in touch with scientific understanding, must consign the "empty tablets" of John Locke and Margaret Mead to the trash cans of human error, and adopt instead a fully interactionist paradigm.

In *The Triune Brain in Evolution*, Paul MacLean has shown that the primate brain contains three basic phylogenetically-given formations: the reptilian, the paleomammalian, and the neomammalian, which, both anatomically and biochemically, reflect an ancestral relationship to reptiles, early mammals, and late mammals. Our highly complex brain, in other words, is a living palimpsest of our evolutionary history.

The principal feature of the paleomammalian brain is the limbic system, which is primarily concerned with visceral processes and the emotions. It is in this phylogenetically ancient part of our brains, which is virtually identical with the limbic system of our primate cousins, the chimpanzees, and which evolved long before the emergence of cultural adaptations, that our basic human nature is physiologically programmed.

Yet, even more important are the frontal lobes of our brains, which have been described as "the neocortex of the limbic system," and which, as MacLean and others have shown, "are the seat of consciousness and of the highest human faculties, such as foresight and concern for the consequences and meaning of events," and, most importantly, of the human capacity for making choices.

Cultural anthropologists have long claimed that it is the differences between cultures—which are often striking—that necessitates explanation in purely cultural terms. Accordingly, as by Kroeber, culture is said to be *sui*

generis and uniquely human. The researches of recent years have clearly demonstrated the inadequacy of these cultural determinist assumptions. John Tyler Bonner of Princeton University, in his book *The Evolution of Culture in Animals,* has demonstrated the existence of rudimentary cultural adaptations based on choice behavior in animal species other than *Homo sapiens.* This particularly applies to the chimpanzee, and we are obviously dealing with an evolutionary continuity.

Noam Chomsky has long argued, as did Kroeber, that language in general and grammar in particular were the result of a sudden mutation in the human species. In a landmark study published in 1990, Patricia M. Greenfield and Sue E. Savage-Rumbaugh have demonstrated in their researches on the pigmy chimpanzee, Kanzi, that his "capacity for grammatical rules (including arbitrary ones)...show grammar as an area of evolutionary continuity."

Cultural adaptations, it is now evident, are made possible by the evolutionary emergence of what Ernst Mayr has termed open programs of behavior resulting from the gradual opening up of a genetic program to permit "the incorporation of personally acquired information to an ever greater extent." Within an open program of behavior, a choice is made between two or more responses to produce what Bonner calls "multiple choice behavior." The emergence of culture in the course of evolution is now viewed, therefore, as "a new niche that arose from the experimentation of animals with multiple choice behavior," and it is to this evolutionary innovation that the rise of cultural adaptations in the human species is to be traced.

All human cultures, past and present, are the historical creations of human populations, all of whose members possessed, as they still possess, a phylogenetically-given primate nature. This primate nature, which is principally programmed in the limbic systems of their paleomammalian brains, is ever present, in all human groups, coexisting with their cultural institutions. Once this is understood, it becomes apparent that cultural adaptions can only be adequately understood with reference to the phylogenetically-given human nature, from which, by the exercise of human choice, they have sprung.

The time is thus conspicuously at hand, in all the human sciences, for a paradigm giving recognition of the radical importance of both the cultural and the biological (including the capacity for choice) and of their interaction.

Within the lifetimes of most of us there has been a historical paradigm shift in the earth sciences. It occurred in the mid-1960s, with a shift from "fixism" to "plate tectonics." Niles Eldredge has recorded how in undergraduate courses at Columbia University in the early 1960s, plate tectonics was said to be nonsense, while by the time he had entered graduate school, it had become the "new truth." The complaint of those who so adamantly opposed plate tectonics was that they would have to forget everything they had learnt, and start all over again.

This is indeed the case when a paradigm shift occurs in human understanding, and it will also have to happen when the human sciences abandon the Lockean assumption that all human behavior is the result of social conditioning in favor of an evolutionary-based interactionist paradigm. There will be much to learn.