Human Nature and Culture: An Evolutionary Psychological Perspective

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ABSTRACT Personality psychology is the broadest of all psychological subdisciplines in that it seeks a conceptually integrated understanding of both human nature and important individual differences. Cultural differences pose a unique set of problems for any comprehensive theory of personality—how can they be reconciled with universals of human nature on the one hand and within-cultural variation on the other? Evolutionary psychology provides one set of conceptual tools by which this conceptual integration can be made. It requires jettisoning the false but still-pervasive dichotomy of culture versus biology, acknowledging a universal human nature, and recognizing that the human mind contains many complex psychological mechanisms that are selectively activated, depending on cultural contexts. Culture rests on a foundation of evolved psychological mechanisms and cannot be understood without those mechanisms.

"The tabula of human nature was never rasa and is now being read"
— W. D. Hamilton, 1997

Although cultural theorists define culture in somewhat different ways, many definitions share some core features. Culture is often used to refer to ideas, beliefs, representations, behavior patterns, practices, artifacts, and so forth that are transmitted socially across generations within a

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group, resulting in patterns of within-group similarity and between-group differences (Tooby & Cosmides, 1992; see also Barkow, 1973, 1989). A key tension that has long pervaded cultural personality psychology is the degree to which human nature informs, guides, or even determines the forms culture can take, or conversely, the degree to which human nature is plastic, malleable, formless, and content-free so that patterns of cultural phenomena can be analyzed independent of human nature.

An illustration of this tension came in America in the 1960s and early 1970s. The United States witnessed monumental cultural change that, for a time, seem destined to alter fundamental human personality, or at least its expression. Rock and roll music was not merely music. It flourished and took over and carried the cultural messages of transformation. The rockers, the new cultural leaders, sang about "my generation," "the times they are a changin'," and the dawning of the Age of Aquarius. They sang about smiling on your brother and loving one another right now. They sang about imagining no possessions, a world without greed or hunger, and a brotherhood of man. They sang about the world being one in peace, love, and harmony. They said they wanted revolution. They wanted the world. And they wanted it *now*.

Middle-class motives of materialism, possessiveness, jealousy, greed, and competitiveness were judged to be outdated, clung to by the uptight, unliberated, materialistic establishment, motives that warped a more pristine human nature characterized by universal love. Frank Zappa, of the Mothers of Invention, suggested that only jerks went to work. He sang that there would soon come a day when people wouldn't even care if they were fat; concern with physical appearance was just another symptom of the corrupting influence of American culture. With free love, women's liberation, and a massive cultural revolution, these establishment motives would be replaced, the cultural script rewritten.

In his wildly popular bestseller in 1970, *The Greening of America,* Charles Reich, a Yale law professor, wrote that the new generation of youth experienced less guilt and anxiety than their parents' generation. Members of the new generation were noncompetitive and nonmaterialistic, more open and honest, more communal and peaceful. They lacked jealousy and possessiveness, and were notably not obsessed with striving for status and conventional careers. Flower power, peace signs, mind-expanding drugs, and the freedom of hitchhiking became symbols and markers of cultural change. Even bell-bottomed pants were said to give the ankles a freedom of movement to facilitate dancing in the streets.

How deeply did these powerful cultural messages change the fundamentals of personality? Could human nature be rewritten with a new cultural script? We have no exact measurements, but several indications are worthy of pause. First, Reich based his book on his interviews with Yale undergraduates—people enjoying privilege, freedom, and the accoutrements of wealth almost unparalleled in human history (Pinker, 1997). They typically came from the upper or upper-middle classes, with parents who paid their bills. With "Ivy League credentials about to launch them into the expanding economy of the 1960s, it was easy to believe that all you need is love. After graduation day, Reich's generation became the Gucci-wearing, Beemer-driving, condo-owning, gourmet-baby-breeding urban professionals of the 1980's and 90s" (Pinker, 1997, p. 426). It is not clear that the working class of America sang the same songs.

Second, rock musicians themselves started to question universal harmony. The rock band The Who wrote their signature song "Won't Get Fooled Again." The song suggested that the new boss was essentially the same as the old boss, implying that the leaders of the cultural revolution might not differ much in motives from those they sought to replace. The musician Elvis Costello posed the question: "Was it a millionaire who said 'Imagine no possessions'?" (cited in Pinker, 1997, p. 426). Even John Lennon, who led a generation to strive for peace and love and brotherhood, in a song called "God" documented his succession of disillusionments. He said he did not believe in Mantra, Gita, Yoga, Elvis, Bob Dylan, or even the Beatles. Now, he told us, he just believed in himself and his wife Yoko. The man who exhorted a generation of young to "come together" now sang that "the dream is over."

Third, and perhaps more telling, key social experiments began to collapse. Roughly 90% of the open marriages, characterized by presumably liberated nonjealous, nonpossessive people who had no trouble sharing their spouse's bodies freely with others, ended in divorce. Often the cause was intense and unshakable sexual jealousy and possessiveness (Buss, 2000). Men and women had trouble not feeling betrayed when their partners had sex with others. Free-love communes fell apart as resentment grew toward male leaders, who, despite ideology to the contrary, were highly hierarchical and displayed an astonishingly frequent proclivity for using their status to gain preferential access to material goods and sexual access to the young attractive women of the communes.

It seemed as if status striving, greed, jealousy, competitiveness, and materialism were motives not easily discarded by flower power, rock lyrics, peace signs, bell bottoms, marijuana, and communal living. Like a snake sloughing off its surface skin, most of the generation of peace, love, and liberation eventually jettisoned its ideology and revealed underlying motives and dispositions that did not look terribly different from those of their middle-class parents.

Noble Savages, Blank Slates, and Plastic Predispositions

While all of these surface cultural changes were taking place, the academic disciplines of American anthropology and American psychology weighed in. They provided plenty of seemingly sound scientific evidence that held out the promise that the baser and more unseemly motives displayed in the material world of Western culture were parochial modern artifacts rather than enduring components of human nature. The famous anthropologist Margaret Mead became a cultural hero, claiming to discover cultures living in peace and harmony, cultures in tropical paradises lacking possessiveness, material greed, violence, and warfare. She disparaged the Western emotion of jealousy as "undesirable, a festering spot in every personality so afflicted, an ineffective negativistic attitude which is more likely to lose then to gain any goal" (Mead, 1931, pp. 35–36). The character of the Samoan islanders she studied apparently lacked this personality defect and Samoans would "laugh incredulously at tales of passionate jealousy" when they were described by anthropologists (cited in Freeman, 1983, p. 244). If the Samoans lacked jealousy, then perhaps that and other contemptible components of personality were not part of human nature at all. Perhaps we could all learn to live like Samoans.

Anthropologists coming back from the field celebrated the astonishing discoveries of cultural diversity. Cultures were purportedly discovered in which the "sex roles" were totally reversed, where men displayed femininity and women masculinity. On sex roles, for example, Mead reported discovering "a genuine reversal of the sex-attitudes of our culture, with the woman the dominant, impersonal, managing partner, the man the less responsible and the emotionally dependent person" (Mead, 1935, p. 279). Mead became a celebrated icon in both social science and among the general public for having discovered island

paradises inhabited by peaceful peoples who shared sexuality and free love and did not compete, fight, rape, or murder.

Margaret Mead's point of view is but one example of a pervasive, although by no means universal, doctrine that took hold in 20th century thought about culture and personality, a doctrine known as The Noble Savage (Pinker, 2000). According to this doctrine, humans in a state of nature are peaceful, harmonious, and, above all, fundamentally good. Evil and depravity come not from nature, but from the distortion and corruption of a good nature by a bad culture, imposed from the outside. Western culture, in particular, was seen as especially corrupting, with its emphasis on individualism, competition, status striving, and materialism. The Noble Savage doctrine has been eloquently summarized by the anthropologist Melvin Konner, who noted that "[w]e have never quite outgrown the idea that somewhere, there are people living in perfect harmony with nature and one another, and that we might do the same were it not for the corrupting influences of Western culture" (Konner, 1990). Indeed, the ideology of the American '60s and '70s called for a return to nature, living off the land, escaping the crushing burdens imposed by the malevolent society. The implications of the doctrine of the Noble Savage were clear—eliminate the corrupting influence of Western culture so that the essentially good human nature could shine through.

A parallel premise shared by both psychologists and anthropologists was the doctrine of the Blank Slate. In psychology, this took the form of learning theory, which carried the critical assumption of equipotentiality (all stimuli and responses are equally conditionable). The mechanisms of learning were presumed to be the same, regardless of stimuli, responses, or reinforcers (Domjan, 1997). Any reinforcer could be paired with any behavior, and learning would occur with equal strength and rapidity. Thus, any behavior could be shaped as easily as any other behavior by manipulating the contingencies of reinforcement. What was "innate" in humans was merely the general capacity to learn through contingencies of reinforcement.

Although not all psychologists endorsed these blank-slate assumptions in all of their details—few innate characteristics, the equipotentiality of learning, and the omnipotent power of contingencies of reinforcement—the basic premises underlying them guided many theories in academic psychology in the 20th century. The findings of anthropologists of astonishing cultural variability and the premises of psychologists

about the mechanisms of learning seemed to dovetail perfectly (Tooby & Cosmides, 1992).

Many anthropologists, led by George Murdock, were explicit about the doctrine of the blank slate He believed that "[C]ultural phenomena . . . are in no respect hereditary but are characteristically and without exception acquired" (Murdock, 1932, p. 200). Humans had merely a generalized capacity for culture, just as they had a generalized capacity to learn. Human nature, in this view, is "merely the indeterminate material that the social factor molds and transforms. [This] contribution consists exclusively in very general attitudes, in vague and consequentially plastic predispositions which, by themselves, if other agents did not intervene, could not take on the definite and complex forms which characterize social phenomena" (Durkheim, 1895/1962, p. 106).

Human nature was presumed to be nearly infinitely variable, incredibly flexible, and not constrained by a universal human nature: "We are forced to conclude that human nature is almost unbelievably malleable, responding accurately and contrastingly to contrasting cultural conditions" (Mead, 1935, p. 280). The doctrine of the Blank Slate has been endorsed by the noted anthropologist Clifford Geertz, who argued, following Murdock, that "Undirected by cultural patterns—organized systems of significant symbols—man's behavior would be virtually ungovernable, a mere chaos of pointless acts and exploding emotions, his experience virtually shapeless" (Geertz, 1973, p. 49). The slate, in short, is blank. Human nature is formless, shapeless, and vague. And it remains that way until the cultural symbols, social scripts, social roles, or external contingencies of reinforcement supply structure, roles are assigned, and agents of the culture impress their indelible stamp.

Not all social scientists, of course, endorsed these premises. Freud, for example, posited universal psychosexual stages and universal psychic structures ultimately rooted in Darwinian theories as he understood them (Sulloway, 1979). Spiro (1982) argued for the importance of discriminating between culturally variable characteristics and psychological universals, the latter being anchored in evolutionary processes (Piker, 1998). Ekman (1973) explored universals of the facial expression of emotion, also rooted in a Darwinian conception of human nature. And there has been a rich tradition among personality psychologists of exploring whether there exist universal dimensions of individual differences (e.g., McCrae & Costa, 1997; White, 1980; Wiggins, 1996). Nonetheless, the dominant conceptions of human nature in 20th century American

psychology often assumed, sometimes implicitly, that the nature of humans was that they had no essential nature other than a general capacity for goodness if left untrammeled by corrupting influences from outside.

Problems in Paradise

The doctrines of the Noble Savage and the Blank Slate started running into formidable empirical problems. When other anthropologists attempted to confirm Mead's observations and conclusions, they discovered unpleasant surprises (Freeman, 1983, 1999). Mead turned out to have lived mostly in a comfortable hotel nearby, not actually among the Samoans, so the depth and accuracy of her ethnography became suspect. She apparently relied heavily on two female informants rather than on direct observations or systematic behavioral scans. But these two Samoan women later confessed to others that they had told Mead tall tales that were factually false.

Jealousy, for example, turned out to be rampant on Samoa, and was and is the leading cause of violence against rivals and mates. Samoans even have a word for it—*fua*. To cite one example, "after Mata, the wife of Tavita, had accused his older brother, Tule, of making sexual approaches to her during his absence, Tavita attacked his brother, stabbing him five times in the back and neck" (Freeman, 1983, pp. 243–244). Samoan women also succumb to fits of jealousy. In one case, when the husband of a 29-year-old woman named Mele left her for another woman, Mele sought them out and "attacked them with a bush knife while they were sleeping together" (Freeman, 1983, p. 244). Cultures in tropical paradises that are entirely free of jealousy turned out to exist only in the romantic minds of optimistic anthropologists and, in fact, have never been found (Buss, 2000).

The "gentle" Arapesh, to take another example, turned out to be headhunters who took great pride in displaying their homicide victims (Brown, 1991).

In cultures such as the Chambri where the sex roles were presumed to be reversed, anthropologists instead found that wives were bought by men, men were stronger than woman and sometimes beat them, and men were considered to be in charge (Brown, 1991). Furthermore, the Chambri considered men to be more aggressive than women and women to be more submissive than men, contrary to anthropologists' claims of the reverse. Behavioral observations of social interactions among them

confirmed the Chambri self-conceptions. All available evidence back to 1850, including some of Mead's recorded observations (as opposed to the inferences she made), suggest that the Chambri's sex roles are in fact strikingly similar to those of Western cultures.

In the Tshambuli, another presumed example of reversed sex roles, the men wore makeup and curled their hair, signs interpreted by the anthropologists as indications of their "femininity." Upon closer scrutiny, it turned out that many Tshambuli men beat their wives. They frequently warred with neighboring tribes over women and resources. And they viewed the act of killing as a rite of passage that gave a man the privilege of wearing the face paint that anthropologists had initially interpreted as so effeminate (Brown, 1991). As more systematic studies have been conducted, "one South Sea island paradise after another has turned out to be nasty and brutish" (Pinker, 1997, p. 426).

An analogous kind of fate befell the fundamental assumptions of radical learning theory (Domjan, 1997; Herrnstein, 1977). Violations of the equipotentiality assumption mounted. The presumably immutable contiguity principle, which assumed that reinforcement will be powerful only if it is followed closely in time and space (hence, contiguous with) the behavior that is being reinforced, also had to be modified as Garcia and others demonstrated single-trial learning even when the reinforcement occurred 24 hours after the behavior. One of the most prominent behaviorists, Richard Herrnstein, much to the distress of his former mentor B.F. Skinner, came to the conclusion that behaviorists had erred by using food as the primary reinforcement. The principles of learning when food are used as a reinforcer do not seem to apply when sex or other reinforcers are used (Herrnstein, 1977). Principles of learning involving consumption do not transfer easily to learning involving consummation. Contrary to the view that organisms have only a few basic drives, as behaviorists had argued, organisms actually appear to have many drives or motives (Herrnstein, 1977).

During this same period, Seligman and others began to document the phenomena of "preparedness" (Seligman & Hagar, 1972). Organisms, including humans, seemed to come into this world prepared to learn some things easily and rapidly (e.g., fears of heights, snakes, spiders), and are not at all prepared to learn other things, which can be acquired, if at all, only after thousands of reinforcement trials. Humans, rats, penguins, and kangaroos, in short, were not blank slates. They appeared to have a nature that was not as plastic and moldable as the prevailing

theories in American psychology and anthropology implied. And then the empirical evidence for human universals—from facial expressions of emotions (Ekman, 1973) to human mating strategies (Buss, 1989; Kenrick & Keefe, 1992) to the structure of personality (McCrae & Costa, 1997)—began to mount.

Despite the romantic political ideologies of the '60s, the doctrine of the Noble Savage, the doctrine of the Blank Slate, and the prevailing assumptions of behaviorism, the empirical evidence supports a different view of human nature. How can we reconcile this view with the study of personality in cultural context? How can we understand the real cultural differences that undoubtedly exist, yet not lose sight of universals of human nature?

Cultural Differences in Personality

The Yanomamö Indians of Venezuela set up temporary shelters, from which they forage for food and hunt for game (Chagnon, 1983). When these shelters become depleted of food, the Yanomamö push on and settle elsewhere. On one particular day, the men gathered at early dawn, making preparations to raid a neighboring village. The group was tense. The men in the raiding party risked injury, and a fearful man turned back, excusing himself from the raid by telling the others that he had a thorn in his foot. Men who do this too often, though, risk damaging their reputations. To a Yanomamö, few things can ruin a reputation more than acts of cowardice (Chagnon, 1983).

But not all Yanomamö are the same. There are at least two discernible groups that differ profoundly in personality. The lowland Yanomamö men are highly aggressive. They do not hesitate to hit their wives with sticks for infractions as minor as serving tea too slowly. They often challenge other men to club fights or ax fights. And they sometimes declare war on neighboring villages, attempting to kill the enemy men and capture their wives. These Yanomamö men shave the tops of their heads to reveal proudly the scars from club fights, sometimes painting the scars red to display them as symbols of courage and endurance. Among the lowland Yanomamö, the most aggressive men have the most wives. Indeed, one is not regarded as a true man until one has killed another man—acquiring the honor of being called an *unokai.* The men who are unokai have the most wives (Chagnon, 1988).

In the highlands a different group of Yanomamö resides. These people are more peaceful and dislike fighting. The high levels of agreeableness can be seen on their faces. These Yanomamö do not raid neighboring villages, do not engage in ax fights, and rarely engage in club fights. They stress the virtues of cooperation. Unfortunately, though, food resources are more plentiful in the lowlands, where the aggressive Yanomamö dominate. The highlanders prefer peace and harmony over competing with the lowland thugs.

How can we understand cultural differences in personality between the highland and lowland Yanomamö or differences between cultures characterized by "individualism" versus those characterized by "collectivism"? And more generally, how can we understand patterns of cultural variation amidst patterns of human universals?

There are several important reasons why it's useful, and perhaps even theoretically critical, to explore personality across cultures (Church, 2000; Paunonen & Ashton, 1998). One is to discover whether concepts of personality that are prevalent in one culture, such as American culture, are also applicable in others cultures. A second is to find out whether cultures differ, on average, in the levels of particular personality traits. Are Japanese, for example, really more agreeable than Americans, or is this merely a stereotype? A third reason is to discover whether certain features of personality are universal, corresponding to the "human nature" level of personality analysis. Evolutionary psychology provides some of the conceptual tools that can be used to address these issues.

Evolutionary Psychology and the Multi-Mechanism Mind

If you cut open the human body, you do not see a formless mass of physiological protoplasm, but rather an astonishing assemblage of exquisitely designed biological machinery. The heart, liver, lungs, kidneys, esophagus, stomach, large intestines, small intestines, and pancreas all have distinct functions and operate according to different sets of procedures. Subsumed by each bodily organ are many special-purpose design features. The eye, for example, contains a transparent lens that allows light, a pupil capable of dilating and constricting to adjust the amount of light, a retina filled with photon-sensitive neurons, rods, and cones that are selectively activated depending on ambient circumstances, specialized edge detectors, dedicated motion detectors, and hundreds of other

special-purpose components. Our unaided human intuitions, however, fail to pick up any of this. We just open our eyes and see. Because our vision seems effortless, it seems to us subjectively as if our eyes are designed to see everything in the world. The hundreds of mechanisms included in our visual machinery operate soundlessly. And so, undoubtedly, do our mechanisms of mind.

According to the fundamental premises of evolutionary psychology, there is no reason to believe that the human brain and the mind it houses is any less complex, any less specialized, or any less functional in design than the human eye. The psychological designs of mate preferences, for example, is assumed to be different from the psychological design of food preferences or landscape preferences. The psychological design of parental investment is assumed to be different from the psychological design of friendship investment. Even the psychology of cheater detection in coalitions or social exchange is assumed to be different from the psychology of cheater detection in long-term mateships. What counts as cheating in one type of relationship (e.g., having sex with someone else) is not typically considered cheating in the other (Shackelford & Buss, 1997).

The core assumptions of evolutionary psychology—that our evolved psychological mechanisms are numerous, complex, specialized, and functional—may or may not turn out to be correct. But cumulating evidence from linguistics, artificial intelligence, cognitive neuroscience, psychophysiology, social psychology, cognitive psychology, and cultural psychology is beginning to support these core assumptions (Barkow, Cosmides, & Tooby, 1992; Buss, 1999; Gaulin & McBurney, 2001; Pinker, 1997). And if these assumptions do turn out to be correct, as the evidence suggests, they have profound implications for any theory that attempts to illuminate culture, personality, and human nature.

Human Nature and Cultural Universals

Although some personality psychologists restrict the study of personality to the domain of individual differences (Goldberg, 1981; Wiggins, 1979), many define the field more broadly to include the study of human nature (Buss, 1984). Indeed, the core of all major theories of personality, from Freud on, contains foundational characterizations of human nature. In the history of the study of personality and culture, however, the study of

cultural universals has long been in disfavor. For most of this century, the focus has been almost exclusively on cultural differences.

Over the past decade, the pendulum has swung toward a more moderate view. Brown (1991) has a list of dispositions, practices, and attitudes that are good candidates for cultural universals (see also Pinker, 1997). Among them are incest avoidance, facial expressions, favoritism toward in-group members, favoritism toward kin members over non-kin members, collective identities, fear of snakes, division of labor by sex, revenge and retaliation, self distinguished from others, sanctions for crimes against the collectivity, reciprocity in relationships, envy, sexual jealousy, and the emotion of love. Similarly, personality psychologists have uncovered what appears to be a highly replicable factor structure of personality in the form of the Five-Factor Model (McCrae & Costa, 1997; De Raad, Perugini, Hrebickova, & Szarota, 1998).

Evolutionary psychology provides a set of guidelines for the formulation of human nature and, hence, for the foundation of human personality. Specifically, humans are predicted to have evolved motives, strivings, and other goal-directed proclivities that historically led to relative reproductive success. This does not mean, of course, that humans have evolved a motive to "reproduce as much as possible" or to "maximize their inclusive fitness" or even to "replicate their genes relative to others." These hypothetical motives are too broad, too general, and too unspecified to have evolved, and there are compelling arguments that suggest that selection could not have produced general motivations of this sort (see, e.g., Symons, 1992; Tooby & Cosmides, 1990).

Instead, natural and sexual selection tend to fashion motive dispositions that recurrently contribute to successful solutions to specific adaptive problems. Survival is important in that organisms generally need to survive in order to reproduce. It is not implausible that humans have evolved specific fears of snakes, spiders, heights, and darkness because such fears tended to lead, on average, to greater survival (Seligman & Hagar, 1972). It is also not unreasonable to hypothesize that humans have evolved xenophobic fears of strangers and out-group members (Marks, 1987; Nesse, 1990), given the convergent evidence from paleontological, archaeological, anthropological, and psychological sources of evidence that point to a long human history of homicide and warfare (e.g., Buss & Duntley, under review). Strangers and other tribes were sometimes hazardous to our ancestors' health.

Although surviving is an important task and entails solving a complex set of adaptive problems, survival is only important, from the standpoint of selection, to the degree that it is tributary to reproduction. A person could survive to the age of 100 and still fail to contribute to the ancestry of future generations. To pass through that selective bottleneck, our foremothers and forefathers must have solved a host of distinct social problems. These include negotiating complex status hierarchies, forming coalitions, successfully attracting mates, fending off intrasexual rivals, conceiving, giving birth, and successfully raising and investing in children and collateral kin, helping them to fend off the various hostile forces of nature that might impede their survival or reproduction.

Each of these problems, in turn, carries with it a suite of subproblems, each of which contributes to successfully solving the superordinate adaptive problem. Successful hierarchy negotiation, for example, requires not merely a motive for status striving, although status striving is a reasonable candidate for a component of human nature. It also requires cultivating and protecting one's social reputation, dealing with being in a subordinate position, motivating the displacement of those higher in the hierarchy but whose position resides in one's attainable range, and sustaining superordinate status without incurring too many costs from envious rivals or bitter subordinates. It requires cognitive feats such as calculating the status trajectories of oneself and others in the group, and modeling the consequences of the injury or death of a kin member or other changes that alter the one's status configuration within the group. It may require tactics for preventing slips and slides in one's own status, such as attempting to transfer blame to others.

Humans live in groups, and all groups have status hierarchies (formal or informal), and reproductively relevant resources are almost invariably more abundant at the top than at the bottom (Barkow, 1989; Hogan, 1996). There is no reason to believe that these conditions have not recurred for millions of years of human evolutionary history. It would be surprising if selection had not designed a complex psychology dedicated to dealing with the complex problems of hierarchy negotiation, including motivational mechanisms, such as status striving and envy of specific others, and cognitive abilities required to model the trajectories of others or to deploy tactics such as deceiving down (Hartung, 1987). These hierarchy negotiation maneuvers are reasonable candidates for human nature, which forms the foundation of human personality. If this analysis

is correct, it has important implications for the analysis of culture and personality, starting with the causal status of culture.

The Myth of Culture as a Causal Explanation

Many treatments of culture assume, often implicitly, that "culture" is an independent causal agent acting on human beings, who are recipients of this causal input. Descriptions of cultural differences (culture X differs from culture Y) seem to slide easily into labels (e.g., "independent" versus "interdependent"), which are initially meant to represent broad summaries of the differences. But they often become reified and given causal status (e.g., "cultural interdependence" is the cause of behaviors a, b, and c). In fairness, it is not always the originators of the descriptions who fall prey to this problematic causal usage, but rather those who cite and subsequently use these labels (see also Church, 2000).

A description of a difference between two populations is not the same as an explanation for the difference, however seductively that transition may beckon. Consider differences among cultures in the value their members place on physical attractiveness in a potential spouse (Buss, 1989). These cultural differences are real and substantial. Bulgarians and Estonians, for example, value good looks in a mate considerably more than French Canadians or Scandinavian Finns. Stating that "culture" has caused, or somehow explains, these differences, however, sheds no further light on why these differences exist to begin with. Nor does redescribing the phenomenon as a "beauty myth" and then ascribing causal status to "the beauty myth" (Wolf, 1991).

In this example, the cause may be linked to a variable rarely considered among cultural psychologists, but one of profound significance for evolutionary biologists—the prevalence of pathogens in the local ecology. Pathogens degrade physical appearance, creating unsightly sores and lesions (think of ringworm) as well as asymmetrical features (think of Lyle Lovett). In cultures with a great prevalence of pathogens, physical appearance becomes an especially important mate selection criterion, since it provides a window into the health status of a potential mate. Gangestad and Buss (1993) tested the hypothesis that a high prevalence of pathogens would elevate the importance inhabitants of a particular culture would place on physical appearance. To test this hypothesis, culture was treated as the unit of analysis. They found that cultural variation in the prevalence of pathogens was correlated +.71 with the

average cultural importance placed on physical attractiveness in a potential mate, accounting for a virtually unprecedented 50% of the cultural variation (Gangestad & Buss, 1993). Assuming further tests confirm this hypothesis, cultural variation in a psychological variable, in this example, can be traced, in part, to variation in an important hazard of the local ecology.

An example closer to the domain of mainstream personality pertains to stable sexual strategies (Schmitt & Buss, 2000). The Ache of Paraguay are relatively promiscuous (Hill & Hurtado, 1996). By the time the average Ache reaches age 40, he or she has been married more than 11 times. During that interval, there are likely to have been affairs and short-term liaisons. Ache marriages are highly unstable, and the majority engages in relatively frequent partner switching. The Hiwi tribe also resides in South America, and they display a remarkably different pattern of sexuality. Marriage is highly stable. There are few affairs. And there is relatively little partner switching. There is no reason to belief that the Ache and Hiwi differ genetically.

We could label these differences as "cultural differences," and some might even make the claim that "culture" explains the differences. Such labeling, of course, sheds no further light on the group differences we are trying to explain. But there is a compelling candidate explanation anchored in the evolutionary psychology of sex ratio, intrasexual competition, and mate availability (Pedersen, 1991). When there is a relative surplus of women in an operational mating pool, men shift to a short-term sexual strategy and become reluctant to commit. Women, too, shift to short-term mating, partly because of the abundance of intrasexual competitors and partly because they are forced to do so when men become reluctant to commit. Marriages become unstable and partner switching frequent when there is a surplus of women. When the sex ratio shows a reverse pattern, with a relative surplus of men in the eligible mating pool, men fortunate enough to secure a wife do their utmost to hold onto her. Marriages become very stable and incentives and opportunities for men to switch partners are reduced.

According to the sex-ratio hypothesis, men and women have evolved a sexual psychology sensitive to the local conditions of mate scarcity or abundance. Data from the Ache and Hiwi tribe precisely support this hypothesis. The Ache have a surplus of women, with roughly 1.5 women for every man. The Hiwi show the reverse pattern—a surfeit of men relative to women. What started out as a "cultural difference" of mysterious

origins turns out to be highly predictable and based on a cogent evolutionary psychological hypothesis, at least if further tests of the hypothesis continue to support it.

These examples are relatively simple, of course, and it would be foolish to claim that explaining all important cultural differences in personality, such as in individualism and collectivism, will be so tractable.

But there are three critical points that these examples highlight, points that have also been emphasized by various theorists in other contexts (e.g., see Barkow, 1989; Markus & Kitayama, 1998; Shweder, 1991; Tooby & Cosmides, 1992). First, describing a cultural difference should not be confused with explaining a cultural difference. Descriptions, no matter how accurate and articulate, should not be conflated with proper causal accounts. In principle, hypotheses about the origins of cultural differences can and should be subjected to empirical tests. Tracing the causal origins of some cultural differences may prove impossible, of course, but others may prove tractable.

Second, specific mechanisms of human nature, in some cases, are central and indispensable components of proper causal accounts of cultural differences (Barkow, 1989; Tooby & Cosmides, 1992). Just as a species-typical callus-producing mechanism is needed to explain the manifest variation in the thickness and distribution of calluses across cultures, species-typical psychological mechanisms may be needed to explain behavioral variation across cultures. In this sense, the false dichotomies that have been perpetuated into the 21st century—culture versus biology, nature versus nurture—must be revealed as plainly false.

Third, "culture" is not an autonomous causal agent, independent of the individual participants of the culture (Tooby & Cosmides, 1992). External events—including rites, rituals, and rivals—do not impinge on tabula rasas. They are processed, filtered, selectively ignored, and selectively acted upon. The myth of culture as a causal explanation, independent of the evolved psychology of humans, must be jettisoned. Now that we have some of the conceptual tools for moving beyond labeling and reification in our understanding of culture, those guilty of subscribing to this myth must be judged guilty of scientific malpractice.

Conceptual Complexities: Within-Cultural Variation, Difference-Detecting Mechanisms, and Transmitted Culture

Several important conceptual complexities must be acknowledged for this analysis of the evolution of psychological foundations of culture. The first is that there are formidable conceptual difficulties entailed by attempts to integrate into a single theory universals of human nature, universal dimensions of individual differences, and substantive cultural differences. Personality theories have made some progress. Hogan (1996), for example, proposes universal human motives, such as "getting along" and "getting ahead," with individual differences reflecting social appraisals of relative success at attaining these goals (e.g., success at attaining status and being accepted). MacDonald (1998), to take another example, proposes a tripartite theory in which personality systems are universal psychological mechanisms; gender, age, and ethnic differences explicable on specific evolutionary theories; and personality differences reflect variation in the individual strategies by which people solve adaptive problems. The difficulties or challenges faced by these forms of conceptual integration, however, remain profound (Buss & Greiling, 1999).

A second complexity is a point made cogently by others (e.g., Church, 2000; Matsumoto, 1999), but is worth bearing in mind—the fact that descriptions of cultural differences almost invariably gloss over important individual differences within each culture as well as the often substantial overlap between cultures. Although the Ache can be characterized as a sexually promiscuous culture, certainly when contrasted with the Hiwi, it is also true that 25% of the Ache remain in stable monogamous marriages (Hill & Hurtado, 1996). A substantial minority of Ache, in other words, look pretty much like the majority of Hiwi in their mating behavior, and for that matter, pretty much like Americans, Japanese, or Estonians. Characterizations of the culture-level differences should carry with them the qualification of important within-culture individual differences and between-culture overlap.

Another example is the characterization of Asian cultures as "interdependent" and European-American cultures as "independent" in self-concept and behavior. Several authors have criticized the theory that Western views of self are independent whereas Asian views of self are interdependent (Markus & Kitayama, 1998), both on theoretical and

evidentiary grounds. Matsumoto (1999) contends that the evidence comes almost exclusively from North America and East Asia (notably Japan), and may not generalize to other cultures. Furthermore, there is far more overlap in the self-concepts of people from different cultures than some theorists imply. Many individuals in collectivist cultures, for example, do use global traits (e.g., agreeable, fun-loving) when describing themselves, and many in individualist cultures use relational concepts (e.g., "I am the daughter of X.") when describing themselves. The cultural differences may be more a matter of degree.

On theoretical grounds, Church (2000) notes that "attempts to characterize cultures or individuals in terms of such broad cultural dichotomies may be overly simplistic" in the sense that views of the self in all cultures appear to incorporate both independent and interdependent self-construals, and self-concepts in all cultures vary somewhat across social contexts. The important differences Markus and Kitayama have found between Japanese and American participants, in short, may be more a matter of quantitative differences in degree than qualitative of differences of kind.

A third complexity in attempts to integrate universals of human nature with cultural differences pertains to evolved human difference-detecting mechanisms (Buss, 1996). Just as the human visual system is designed to notice motion, and constants in our visual field sometimes literally become invisible, the human psychological apparatus of person perception is designed to attend to, remember, and process differences. In the domain of human mating, for example, constants do not count. No one would make "having an opposable thumb" a key criterion of mate selection, since all but the rarest of individuals have an opposable thumb. What counts are the differences among potential mates—who is more or less agreeable, conscientious, emotionally stable, interesting, intelligent, attractive, and witty. Because nearly all of the social adaptive problems human ancestors confronted involved detecting differences, both individual differences and intra-individual differences, humans tend to fail to notice the constants of human nature.

Imagine an anthropologist who came back from 2 years of living among the bongo-bongo tribe, and offering this description:

> The Bongo-Bongos live in groups; individuals within the group have clearly established status hierarchies; resources tend to flow to those at the top of the hierarchy; those lower in the status hierarchy

> sometimes display envy of those who are higher; they carefully monitor their own and others' status trajectories; they gossip and sometimes slander their rivals; they tend to treat their close kin more favorably than distant kin; parents make sacrifices for their children without expecting favors in return; they form enduring friendships with some and enmity with others; they engage in social exchange; they compete for desirable mates, and get into predictable forms of mating conflict; men tend to seek sex sooner and more persistently and with a greater variety of partners than women; women are more choosy and discriminating about whom they choose to sleep with; men tend to compete with one another in physical and athletic contests; women show less interest in competing themselves, but do monitor the outcomes of men's athletic competition; both sexes grieve when a family member dies, and the closer the genetic relatedness, the more intense the grieving; they show elation after a public success; they get depressed when they lose status or get ostracized by the group; and they get jealous when a mate consorts with an intrasexual rival. In other words, the Bongo-Bongos are pretty much like us.

Would this anthropologist ever be able to publish such an account? And if so, would anyone actually read it?

On the other hand, if the anthropologist came back saying that the Bongo-Bongos were completely different, people would stand up and notice:

> They live in peace and harmony and don't get into social conflicts; sex roles are reversed, with women being masculine and aggressive, men being feminine; husbands don't care if their wives have sex with other men, and women don't care if their husbands give the bulk of the meat from the hunt to their lovers; they lack envy, jealousy, and avarice; men find older women who are grandmothers to be more sexually attractive than young women; they lack status hierarchies and are perfectly egalitarian; and they channel acts of altruism as much toward other people's children as to their own.

Now, this would be news indeed.

Because scientists are humans, and humans have evolved psychological mechanisms designed to detect differences, a strong, but perhaps inadvertent, bias may have crept into both anthropological accounts and

psychological theories. Our delight in tales of astonishing diversity may have overwhelmed any serious attention to universals. Our evolved psychological mechanisms, ironically, may have prevented us from seeing evolved human nature. Some psychologists (e.g., Ekman, 1973) and anthropologists (e.g, Brown, 1991; Symons, 1992), of course, go against this trend and have stressed the importance of human universals, but they have been in a minority.

A final complexity pertains to differences between different sorts of cultural phenomena. In this paper, I have focused on what has been called "evoked culture," whereby features of the social or physical environment differentially or selectively activate different mechanisms shared by everyone (Tooby & Cosmides, 1992). But there are other sorts of phenomena that have been called "transmitted culture," a term referring to representations that initially reside in one person's head and then get transmitted to other people's heads, resulting in local patterns of within-group similarity and between-group difference (Tooby & Cosmides, 1992). It is not unreasonable to expect that ultimate explanations for transmitted culture will also require invoking a foundation of evolved psychological mechanisms. Such mechanisms are required for the transmission process—selective attention, selective encoding, selective memory, selective transmittal to others, and so on. As Allport and Postman (1947) noted in a related context, "Rumor is invented and spread according to the strong personal interests of those involved in the transmission."

As a specific example, it will be essential for personality culture theorists to grapple with sex and age differences in the production of, and receptiveness to, cultural displays. Miller (1998), for example, has proposed the "display hypothesis," which suggests that men will be motivated to create and exhibit art, music, and other cultural products as a means of broadcasting courtship displays to a wide variety of women. Women, according to the hypothesis, do more "narrow-casting," displaying mating receptivity more selectively. The display hypothesis predicts that men will produce more cultural products than women, that young men will produce more cultural products than older men, and that unmarried men will produce more cultural products than married men. Empirical evidence from jazz musicians, writers, poets, artists, rock stars, and even scientists supports predictions from the display hypothesis for the age, sex, and marital distribution of producers of cultural products (e.g., Miller, 1998; Kanazawa, 2000). Although there are many forms of transmitted culture that cannot be explained by the display hypothesis

(Buss, 1999), it has attained enough empirical support to suggest that the production of cultural products cannot be understood independently of the fundamental motivations of those involved in their generation and the psychological susceptibilities of those involved in their reception.

CONCLUSIONS

Culture production, evocation, transmission, and reception are real, important phenomena that require incorporation in broadly based theories of personality. They provide phenomena of fascinating complexity that reveal the flexibility and range of the human repertoire. They pose puzzles for personality theories that aspire to explain human nature and individual differences.

Based on current knowledge and conceptual developments, it should no longer be scientifically acceptable to marvel at cultural differences while ignoring human universals. It should no longer be acceptable to treat culture as somehow opposed to, or independent of, human nature, as though the two were in some zero-sum competition for explanatory priority. And it should no longer be acceptable to ignore the evolutionary psychological foundations through which culture is created and transmitted.

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