Social Adaptation and Five Major Factors of Personality

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Individuals differ in a number of ways that we tend to notice and talk about. Some tend to be conciliatory, others pugnacious. Some are modest, others bombastic. Some impose their will on the group, others accept the structure provided. According to the lexical hypothesis, the differences that are noticed and talked about tend to become encoded within the natural language as trait terms such as aggressive, agreeable, arrogant, dominant, and submissive, and enter into everyday usage in our communications with others (Norman, 1963).

Individuals also differ in an infinite number of ways that either go unnoticed or are not sufficiently noteworthy to warrant much discussion. Some individuals have belly buttons turned in, others have belly buttons turned out. Some lead with their left foot, others with their right. One key function of personality theory is to identify the *most important* ways in which individuals differ from among the infinite dimensions of possible difference (Goldberg, 1972; Wiggins, 1979).

Within the past decade, personality researchers, using a variety of different theoretical perspectives, have advanced variants of what has become known as the five-factor model—Surgency, Agreeableness, Conscientiousness, Emotional Stability, and Intellect–Openness (Norman, 1963; Goldberg, 1981, 1992; John, 1990; McCrae & Costa, Chapter 3, this volume; Hofstee, De Raad, & Goldberg, 1992; Hogan, 1983 and Chapter 5, this volume; Wiggins & Trapnell, in press).

Theoretical positions on the model include the lexical perspective (Norman, 1963; Goldberg, 1981), the social-exchange perspective (Wiggins, 1979, 1991), and the socioanalytic perspective (Hogan, 1983 and Chapter 5, this volume).

The five-factor model has been criticized on theoretical and empirical grounds (e.g., Block, 1995; Waller & Ben-Porath, 1987). Some of these criticisms call into question the comprehensiveness and precision of the five-factor model. Nonetheless, the model's emergence from and endorsement by personality researchers using different theoretical orientations, its documented empirical links with many major personality inventories and instruments (McCrae & Costa, Chapter 3, this volume), its replicability across different populations and data sources (McCrae & John, 1992), and its links with important interpersonal transactions such as conflict and manipulation (Buss, 1992)—all suggest that the dimensions of individual differences captured by the five-factor model cannot be easily dismissed and deserve serious theoretical attention.

The goal of this chapter is to present an *evolutionary psychological perspective* on the five-factor model of individual differences (see also Buss, 1991b). First, I describe the basic theoretical assumptions of the evolutionary psychology perspective. Second, I offer two primary ways within which individual differences become important: (1) in creating adaptive problems for people (*strategic interference*), and (2) in solving adaptive problems (*strategic facilitation*). Finally, I offer empirical illustrations of social adaptive problems that highlight the potential utility of the evolutionary psychological perspective on the five factors.

Humans as Problem Solvers

From an evolutionary perspective, humans can be considered to be complex collections of integrated mechanisms designed by natural and sexual selection to solve problems. Consider the human body. Our bodies contain many specialized mechanisms designed to solve particular problems. Our livers solve the problem of filtering toxins that can be detrimental to survival. Our callus-producing mechanisms solve the problem of damage to the skin due to repeated friction. Our sweat glands solve the problem of thermal regulation. Our taste preferences solve the problem of selecting substances to ingest (ripe berries, tubers, meat; but not twigs, pebbles, or feces).

Each one of the dozens of mechanisms within our bodies is designed to solve a specific adaptive problem.

There are two key points to this body analogy. First, identifying the *function* of a mechanism is essential to understanding its nature, its design features, the contexts that activate it, and its reason for existing at all. In earlier generations, tonsils were routinely removed when they became infected. Now that we know the function of tonsils in disease prevention, they are rarely removed. Major advances in the life sciences often hinge on identifying function.

Second, there is no other coherent and nonarbitrary way of parsing the human body other than by function. We consider the eyes and the nose to be separate anatomical entities, even though they are close together spatially, because we recognize that the eyes and the nose are designed—each with their own distinctive features—to solve somewhat different adaptive problems. Furthermore, each of these adaptations has its own special design features that are exquisitely tailored to perform the function for which it was designed. The use of nonfunctional criteria for parsing the human body—such as spatial proximity—would result in an incoherent and largely arbitrary segmenting. In short, identifying function is essential for understanding the workings of the human body and provides the only nonarbitrary means for carving the body at its natural joints.

Evolutionary psychologists believe that the same logic applies to the human mind. Just as the body is functionally designed, the mind is functionally designed. Just as the body contains many mechanisms, the mind contains many mechanisms. Just as the mechanisms of the body solve adaptive problems, the mechanisms of the mind solve adaptive problems. Just as identifying adaptive function provides a nonarbitrary means of carving the body at its natural joints, identifying adaptive function provides a nonarbitrary means for carving the mind at its natural joints.

Social Adaptive Problems

Although many of the adaptive problems already noted, such as thermal regulation, protecting the structures beneath the skin, and filtering toxins, are properly described as "survival problems," many adaptive problems do not concern survival. Indeed, evolution operates by differential *reproductive* success by virtue of differences in design features; survival is only important inasmuch as it is typically a requirement for reproduction.

Reproductive problems are heavily saturated with social content. Obvious ones include selecting a mate, attracting a mate, copulating, fending off rivals, and raising children. The fact that humans live in groups and all groups contain social hierarchies (Hogan, 1983, Chapter 5, this volume) creates particular social adaptive problems for humans. Reproductively relevant resources such as food, territory, and desirable mates, for example, typically flow to those higher in the social hierarchy and trickle down only slowly to those at the bottom. Therefore, an evolutionary psychologist expects that selection over time would produce specific psychological mechanisms in humans designed to solve the problems of negotiating and scaling hierarchies, dealing with those higher, lower, and equivalently placed in the hierarchy, and preventing skids or slides in status (Stone, 1989; Kyl-Heku & Buss, under review).

Just as specific food preferences solve the survival problem of consumption, specific mate preferences solve the reproductive problem of consummation. Just as our arteries and veins constrict in the cold to prevent the loss of body heat, our social strategies operate in times of hierarchical instability to prevent the loss of status. Because many of the adaptive problems of reproduction in group-living species are inherently social in nature, evolutionary psychologists anticipate that many of our psychological mechanisms are designed to solve social problems.

Individual Differences Are Crucial for Solving Social Adaptive Problems

All cars have four wheels, an engine, a set of brakes, and a steering device. These are components of "car nature." All humans have two legs, a heart, opposable thumbs, and a relatively hairless body surface (compared with other primates). These are components of "human nature." Just as cars differ in their wheel base, torque, and steering devices, the components that comprise human nature also vary.

When an engineer designs a car, both the "car nature" and differences in components must be considered in great detail. When choosing a car to purchase, however, the basic components of "car nature" become irrelevant because all cars possess them. Rather, the *differences* among the cars become critical for selection—whether the car is large or small, powerful or weak, economical on gas or a guzzler, and whether it will inflict many costs through unreliability or

few costs by maintaining resiliency through bumpy roads and bitter winters.

In the same manner, when we face social adaptive problems such as selecting a mate, it would be preposterous to use "having an opposable thumb" or "two-leggedness" as key selection criteria since, with rare exception, all potential mates have these attributes. Despite the fact that having an opposable thumb is a remarkably important part of human nature, a woman seeking a mate does not think: "Wow, I really find him attractive—he has an opposable thumb!" Constants do not count in decisions of selection. Just as in selecting a car, the differences among individuals loom large.

As an illustration, consider the various social selections we make in everyday life, such as mate selection and leader selection. When we cast our ballots for a president on election day, the fact that both candidates have used their species-typical ability to acquire a language is irrelevant. As in selecting a car, it is the differences that are crucial. Which politician has greater oratory skills, however, may be highly relevant, as will the questions: Which politician is more intelligent and insightful? Which has the surgency to lead us into the uncertainties of the 21st century? Which is more honest? Which shares my values? Which has the international clout to forge alliances with other countries? These differences are all critical to solving the problem of selecting a leader.

Consider a somewhat different type of selection—mate selection. The fact that two potential mates share bipedal locomotion is irrelevant to the selection. Again, it is the differences that become critical. Who is more intelligent? Which is more physically attractive? Who has a more exciting personality? Which shares my values? Who is more honest? Who has a better sense of humor? Who is better in bed? Who is more likely to be faithful?

The contrasts between selecting a leader and selecting a mate are instructive. Some dimensions of individual differences are critical to both decisions, such as differences in intelligence, honesty, and values. Other dimensions, however, are relevant to one sort of selection but irrelevant to the other. Differences in international clout may be critical to selecting a president, but irrelevant to selecting a mate. Differences in sexual adeptness may be critical to selecting a mate, but largely irrelevant to selecting a president.

The key point is that individual differences cannot be designated as "important" or "trivial" except with reference to some criterion. The criterion, in these examples, is which differences are relevant to

solving the adaptive problem imposed by the selection being made. And because the individual differences that are critical *vary* depending on which adaptive problem one is confronting, it is always necessary to pose the question—Important for what purpose?

From an evolutionary psychological perspective, a sensible criterion for identifying *important* dimensions of individual differences is to examine our evolved psychological mechanisms for solving adaptive problems. Humans differ in an infinite number of ways. The differences that are important, however, are those that are linked with solving adaptive problems—that is, those linked with function. Over evolutionary time, those individuals who attended to and acted on individual differences in others that were adaptively consequential would have survived and reproduced more successfully than those who were oblivious to adaptively consequential differences in others. People who ignored individual differences in honesty, other things being equal, would have made poorer selections of mates and leaders than those who attended to, and acted on, these differences.

At this moment in time, all of us are the descendants of a long and unbroken line of ancestors who successfully solved the many complex problems entailed by survival and reproduction. As descendants of these successful ancestors, we carry with us the *difference-detecting mechanisms* that facilitated successful adaptive solutions. In order to understand what these difference-detecting mechanisms are, we must enter the minds of the individual problem solvers looking out at the social world inhabited by other individuals who differ in a bewildering variety of ways. We must enter the psychological mechanisms of the individual and ask two key questions: Which adaptive problem is the individual trying to solve? And which differences in other people are most relevant to solving, or failing to solve, these adaptive problems?

Strategic Interference and Strategic Facilitation

Our fears of snakes, spiders, heights, darkness, and strangers are elements in our strategies for survival. Our preferences for fat, sugar, salt, and protein are elements in our strategies for survival. Our blood-clotting mechanisms, callus-producing mechanisms, and tanning mechanisms are all elements in our strategies for survival.

Similarly, our preferences for particular mates are elements in our strategies for reproduction. Our emotion of jealousy is part

of our strategy for successful reproduction, because it functions to protect reproductively relevant resources offered by a particular mate (Daly, Wilson, & Weghorst, 1982). None of these strategies need be consciously articulated, of course, and most are not. When we consume a delicious dinner, we do not think to ourselves, "I am eating this meal because of the nutritive logic contained in the potassium, magnesium, and caloric properties that facilitate my bodily functioning and hence my survival." We simply get hungry, and certain foods taste great. Similarly, when we become attracted to a potential mate, we do not say to ourselves: "The selection of this mate will solve specific reproductive problems, and hence will increase my gene replication compared with alternative selections." We simply find ourselves mesmerized by some potential mates and indifferent to others. Our strategies, and the adaptive functions they were designed to serve, are largely outside of our conscious awareness.

Other individuals, however, can aid our solutions to adaptive problems or impede them. Just as eating a poisonous mushroom would interfere with our strategy for survival, selecting an unfaithful long-term mate would interfere with our strategy for reproduction. Just as selecting a habitat that offers water, ripe fruit, and shelter would facilitate our strategy for survival, selecting a mate who provides drink, food, and protection for our children would facilitate our strategy for reproduction.

We live in a social world, surrounded by other individuals who are pursuing their own strategies. Because evolution operates on a relative metric (*differential* reproductive success), the individuals who surround us are often competitors who are striving for precisely the same adaptively relevant resources. Good food, precious territory, elevated social status, powerful allies, and desirable mates are resources that are always in scarce supply compared with the numbers who seek them. One person's gain, therefore, often comes at the expense of others. In this sense, other individuals comprise our most important "hostile force of nature" (Alexander, 1987; Darwin, 1859).

An ancient Indian saying is that the only people who truly delight in your successes are your parents and your teachers (Devendra Singh, personal communication, June 1994). Hogan (Chapter 5, this volume) notes that elevated status often evokes the envy and resentment of others. Success and status are keenly sought but rarely attained. Just as our friends and loved ones help us with our strategies for getting ahead, our competitors collude to interfere with our

strategies and tear us down. I call these phenomena *strategic facilitation* and *strategic interference,* respectively.

Strategic facilitation may be illustrated by a primate example. Among the chimpanzees, males vie for position as the dominant alpha male. Alpha status confers sexual access to mates. A typical alpha-male chimpanzee attains at least 50% of the copulations with females, and sometimes as many as 75% (de Waal, 1982). Peripheral low status males must settle for far fewer copulations and, in some cases, are literally banished from reproduction.

Given the reproductive benefits linked with alpha status, there is keen competition for position. A lone male, however, can rarely attain a dominant position without the aid of allies. In one study, the chimpanzee Yeroen, a formerly dominant male who had been ousted from power, formed an alliance with an upcoming male named Nikkie (de Waal, 1982). Although neither Yeroen nor Nikkie dared to challenge the dominant male Luit alone, together they made a formidable coalition. Over several weeks, the coalition grew bolder in challenging Luit. Eventually, a physical fight erupted. Although all the chimpanzees involved sustained injuries, the alliance of Nikkie and Yeroen triumphed. Following this victory, Nikkie secured 50% of the matings. But Yeroen, because of his alliance with Nikkie, now enjoyed 25% of the matings (up from 0%). Although he never again regained the dominant position, Yeroen had rallied from setback sufficiently to remain a contender in the troop.

This example illustrates one form of strategic facilitation Yeroen and Nikkie, by selecting each other and forming a coalition, facilitated the success of both. The formation of alliances with others—friends, mates, or kin—is undoubtedly one of the most important means by which humans achieve their goals. Therefore, we would expect there to be tremendous evolutionary selection pressure for psychological mechanisms that guide the choices we make. We should have evolved preferences for allies who strategically facilitate our social goals, just as we have evolved preferences for foods that facilitate our survival goals. A guiding hypothesis of the evolutionary psychological perspective advanced here is that the dimensions of individual differences captured by the five-factor model are critical selection dimensions for choosing allies who are strategic facilitators (Buss, 1989b).

The flip side of the coin to strategic facilitation is strategic interference. Some individuals impede our goals and block our strategies. Consider, for example, psychopathic individuals (Hare

1993). Psychopaths typically exploit our cooperative mechanisms by appearing to be sound reciprocators. They gain our confidence by offering benefits at least commensurate with what they are getting from us. But over time, they defect. Psychopaths exploit the trust that they have gained to con us, often defecting on the last move of the social game. Successful psychopaths, in short, interfere with our strategy of forming successful reciprocal alliances.

In everyday social life, we are surrounded by a field of individuals, each of whom is pursuing an agenda and is carrying out strategies based on that agenda. Some of these individuals become allies with whom we join forces in strategic cooperation. Others interfere with our strategies and impede progress toward our goals and become our rivals and enemies. A guiding evolutionary hypothesis is that the dimensions captured by the five-factor model identify in broad brush strokes some of the most important costs and benefits linked with those who form our social adaptive landscape.

The Role of the Five Factors
in Forming Strategic Alliances

As part of a larger study, Todd Dekay and I were interested in discovering how important each of the five factors is in forming different sorts of alliances with others (DeKay & Buss, in preparation). We focused on what we believe to be the three most important alliances we form with non-kin: *coalitions* (groups of individuals formed to achieve a common goal), *friendships* (dyadic reciprocal alliances), and *mateships* (long-term heterosexual alliances).

We asked subjects to judge each of 149 characteristics on how desirable or undesirable it was in a coalition partner, a friend, and a mate. Included within the 149 characteristics were markers of the five-factor model, selected on the basis of factor analyses reported by Goldberg (1983) and supplemented with evolutionarily guided markers. For *Surgency*, for example, we used dominant, bold, brave in the face of danger, and submissive. For *Agreeableness*, we used agreeable, kind, helpful to friends, and disagreeable. For *Conscientiousness*, we used hardworking, dependable, unreliable, and acting irresponsibly. For *Emotional Stability*, we used emotionally stable, emotionally unstable, and inability to handle stress well. For *Intellect–Openness*, we used intelligent, open-minded, stupid, and close-minded.

It is clear that the five factors figure prominently in all three

forms of strategic alliance. When we examined the "top 20" most desirable characteristics out of the 149 characteristics in each of the three types of relationships, markers of the five factors appeared prominently in each. For *coalitions*, the following markers appeared in the most desirable 20: ambitious, bold, self-confident, and an exceptional leader (Surgency); kind (Agreeableness); hardworking and dependable (Conscientiousness); emotionally stable (Emotional Stability); and intelligent, open-minded, and having a wide range of knowledge (Intellect–Openness).

For *long-term mateships*, the following markers appeared among the most desirable 20 out of the 149 characteristics examined: self-confident, and ambitious about career goals (Surgency); kind (Agreeableness); dependable and hardworking (Conscientiousness); emotionally stable (Emotional Stability); intelligent, open-minded, and creative, with a wide range of knowledge (Intellect–Openness).

For *friendships*, the following markers appeared among the 20 most desirable characteristics out of the 149 attributes examined: bold, self-confident, and ambitious about career goals (Surgency); kind (Agreeableness); hardworking and dependable (Conscientiousness); emotionally stable (Emotional Stability); open-minded, intelligent, and creative, with a wide range of knowledge (Intellect–Openness).

It is clear that the individual differences captured by the five-factor model figure highly in desirable features of the major non-kin strategic relationships that men and women form in everyday life. In my view, these five factors are so important because they transcend relationship type; that is, Agreeableness, which signals (among other things) cooperativeness and a proclivity to be a good reciprocator, is critical for friendships, mateships, and coalitions. Conscientiousness, which signals dependability and industry, is also a valuable quality in each of the three types of relationships.

The foregoing does not imply that there are not important shifts in which individual differences are important in the different relationships. We found, for example, that being sexually unfaithful while in a steady relationship is viewed as mildly undesirable in a coalition member, moderately undesirable in a close friend, and extremely undesirable in a mateship. Similarly, kindness (Agreeableness) is judged to be more desirable in a mate than in a coalition member. The evolutionary psychological perspective expects some degree of domain specificity, because the precise individual differences that are important vary across different adaptive problems, and selecting

a mate as opposed to a friend certainly constitutes distinct adaptive problems. Despite some degree of domain-specificity, the five factors of personality may be viewed as so important because their breadth allows them to transcend the particulars of specific relationships.

In summary, we have evidence that the individual differences captured by the five factors of personality are viewed as critical in forming strategic alliances of friendships, mateships, and coalitions. Are they also linked with aspects of strategic interference?

The Role of the Five Factors in Strategic Interference

If one end of each of the five factors is seen as desirable in strategic alliances, then the opposite end of each dimension should be linked with strategic interference. Although the empirical documentation of this proposition is incomplete, there is some evidence for it in the context of married couples (Buss, 1991a).

The five factors were assessed using a modification of an instrument developed by Goldberg (1983) and employing parallel forms in three data sources: self-report, spouse report, and interviewer reports (one male and one female interviewer, subsequently composited). Independently, members of married couples completed a 147-item instrument that assessed "Sources of Irritation and Upset" in the marriage. In particular, it provided a reasonably comprehensive assessment of the perceived costs that one's spouse inflicted, on the assumption that anger, irritation, and upset are emotions that signal strategic interference (Buss, 1989c).

By far the worst single source of anger and upset (strategic interference) was having a spouse who is *low on agreeableness*. Disagreeableness in spouses, as assessed via the three data sources, is linked with reports of neglect, verbal abuse, physical abuse, sexual infidelity, inconsiderateness, and self-centeredness. These results dovetail precisely with the expressed preferences in a mate—being kind topped the list of 149 attributes judged for desirability in a long-term mate (DeKay & Buss, in preparation). Interestingly, "Kind and Understanding" also received the top ranking of 13 characteristics ranked by 10,047 individuals from 37 cultures (Buss et al., 1990).

The second worst personality characteristic to have in a mate was *Emotional Instability*. Emotional Instability is linked with complaints

by the spouse of being possessive, jealous, dependent, abusive, inconsiderate, physically self-absorbed, and self-centered. The other three dimensions are also linked with sources of upset. Low Conscientiousness is linked with sexual infidelity, particularly among men. Low Intellect–Openness is linked with the sexualizing of others (e.g., treating members of the opposite sex as sex objects; commenting about the attractiveness of others; expressing sexual desire for a movie star). And Surgency is linked with condescending actions, such as treating the spouse as inferior, placing more value on one's own opinions than on those of the spouse, and trying to act like he or she is better than the spouse.

In summary, this study provides promising evidence for links between the five factors of personality and sources of strategic interference. In the mating context, at least, it provides a detailed portrait of precisely what sorts of costs mates inflict on each other and, hence, the consequences of making a poor mate selection on the major dimensions of personality.

These preliminary studies suggest that the personality dimensions subsumed by the five-factor model are critically linked with strategic facilitation and strategic interference. The DeKay and Buss (in preparation) study shows that men and women alike value aspects of Surgency, Agreeableness, Conscientiousness, Emotional Stability, and Intellect–Openness in the social relations they form. Moreover, these valuable qualities appear to transcend relationship type; they are valued in long-term mates, in friends, and among coalition members. These personality factors, in short, appear to be important in establishing strategic alliances with others.

The five factors also are linked with various forms of strategic interference. In the study of married couples, spouses who are low on agreeableness and low on emotional stability seem especially problematical. Such persons are more likely to abuse their spouses verbally and physically. They are more likely to inflict damage by being sexually unfaithful. The five factors of personality, in short, appear to play a key role in strategic interference as well as in strategic facilitation.

Given the strategic import of the five factors of personality for critical selections, such as mate selection and friend selection, it would be astonishing if we found that men and women were passive with respect to communicating this information to others. To the contrary, the evolutionary psychological perspective proposed here suggests that the five factors would be targets in *strategic trait usage*

(Buss, 1989b). In other words, trait terms that signify standing on the five factors are predicted to be strategically applied to the self and to others in everyday usage in order to influence and manipulate the impressions that others form in order to accomplish adaptively significant goals. For example, they might be used to elevate one's own desirability (tactics of attraction) or to lower the desirability of rivals (derogation of competitors).

The Role of the Five Factors in Solving Adaptive Problems

Some individuals experience *greater success* at pursuing certain strategies rather than others: "Selection operates through the achievement of adaptive goal states, and any feature of the world—either of the environment, *or of one's own individual characteristics*—that influences the achievement of the relevant goal state may be assessed by an adaptively designed system" (Tooby & Cosmides, 1990, p. 59, italics added). Individuals who are mesomorphic, for example, typically will experience far greater success at enacting an aggressive strategy than individuals who are ectomorphic (Tooby & Cosmides call this phenomenon "reactive heritability").

Individual differences in physical attractiveness provide another example. There is evidence that physically attractive men are better able to successfully pursue a "short-term" mating strategy involving many sexual partners (Gangestad & Simpson, 1990). Physically attractive women are better able to pursue a long-term strategy of seeking and actually obtaining higher status higher income marriage partners (Taylor & Glenn, 1976). Relative physical attractiveness functions as "input" into species-typical or sex-typical psychological mechanisms, which then canalize the strategic solutions of different individuals in different directions.

The personality characteristics represented by the "Big Five" may represent (in part) individual differences in the qualities or resources individuals can draw upon to solve adaptive problems. The individual high on Surgency may be able to deploy socially dominant solutions. The person high on Agreeableness may be successful at eliciting cooperation from others in solving adaptive problems. The highly Conscientious person may solve adaptive problems through discipline, industry, and sheer hard work. The Emotionally Stable person may rely on steadiness of nerves, inner resiliency, and the

capacity to rally from setback to solve adaptive problems. The person high on Intellectance may be adept at deploying creative cognitive solutions to adaptive problems.

In summary, this framework proposes a key role of personality in creating and solving adaptive problems:

1. Personality characteristics can play a causal role in determining the adaptive problems to which one is exposed.
2. The personality characteristics of people inhabiting one's social environment can play a causal role in imposing particular problems.
3. Personality characteristics influence the strategic solutions that people deploy to solve adaptive problems they confront.

An Illustration Using the Adaptive Problem of Spousal Infidelity

The Role of Personality in Creating Adaptive Problems

To examine the role of personality in the creation of adaptive problems, I conducted a longitudinal study of 100 married couples. During their newlywed year, we assessed the five major factors of personality through parallel instruments from three data sources—self-report, spouse-report, and independent-interviewer reports. Four years later, subjects completed a battery of instruments, including "Sources of Irritation and Upset," which contained 147 previously nominated things that a member of the opposite sex could do that might irritate, anger, annoy, or upset someone. Previous factor analyses of this instrument yielded 15 major sources of problems, including a cluster labeled "Infidelity." The Infidelity factor contained the following related complaints: "He or she saw someone else intimately"; "He or she had sex with another person"; "He or she was unfaithful to me"; "He or she went out with another person."

Low Conscientious men and women, as predicted, tend to inflict this adaptive problem on their spouses more than men and women higher in Conscientiousness. An unexpected finding was that women high on Intellect–Openness tended to inflict infidelity on their spouses. Personality of the spouse was also linked with the creation of problems other than infidelity, such as abuse, insults, neglect, and inconsiderateness. These results suggest that the personality charac-

teristics of significant others inhabiting one's social milieu play a key role in creating adaptive problems.

Are some people exposed to the problem of spousal infidelity because of their own personality? To answer this question, we correlated personality characteristics of persons with the degree to which they complained about spousal infidelity. *Submissive* men and women—those low on Surgency—tended to complain that their spouses were unfaithful more than those higher on Surgency. Although correlational, these findings suggest that submissive people may be more at risk for encountering the problem of spousal infidelity; and marrying a mate low on Conscientiousness may put one at risk for incurring this adaptive problem.

The Role of Personality in Solving Adaptive Problems

Previous research has identified 19 distinct tactics that people use to retain their mates—tactics ranging from *vigilance* (e.g., "He kept a close eye on her at the party") to *violence* (e.g., "He hit a rival who was making moves on her"; Buss, 1988). We assessed the use of these tactics in the same sample of couples at two time periods (newlywed year and fourth year of marriage) using two data sources (self-report and spouse-report).

Men high on Surgency tend to retain their wives by frequent acts of *Resource Display* (e.g., "He spent a lot of money on her"; "He bought her an expensive gift"; "He took her out to a nice restaurant"). Men low on Surgency tended to use *Debasement* as a mate-retention tactic (e.g., "He told her that he would change in order to please her"; "He became a 'slave' to her"; "He gave in to her every wish"). Men high on Agreeableness tend to *Display Love and Care* (e.g., "He told her that he loved her"; "He went out of his way to be kind, nice, and caring"; "He was helpful when she really needed it"). In contrast, men low on Agreeableness tended to *Derogate Their Mate* (e.g., "He told other guys terrible things about her so that they wouldn't like her"; "He told other guys that she was not a nice person"; "He told other guys that she was stupid").

Men low on Conscientiousness tend to *Threaten Infidelity* (e.g., "He flirted with another woman in front of her"; "He went out with other women to make her jealous"). Men low on Emotional Stability tend to *Derogate Competitors* (e.g., "He cut down the appearance of other males"; "He told her the other guy was stupid"). Men low on

Intellect–Openness tend to *Threaten Violence* (e.g., "He yelled at other guys who looked at her"; "He stared coldly at the other guy who was looking at her"; "He threatened to hit the guy who was making moves on her").

These findings suggest that personality characteristics described by the Big Five are linked with the alternative tactics that men use to solve the problem of mate retention. Personality traits, as traditionally assessed, are linked in coherent ways with the tactics people use to accomplish goals and solve adaptive problems. An essential part of personality, in other words, consists of the recurrent strategies people use to solve adaptive problems.

Trait Usage as Manipulation

Over the past century, the dominant view of animal signals has been that their primary function is to facilitate communication between cooperative members of a species (Dawkins & Krebs, 1978; Parker, 1985). On this account, signals are designed to provide accurate information to others. Recent work in evolutionary biology suggests a less benevolent view. Animal signals generally, and human language specifically, may be viewed as evolved forms of manipulation that exploit the sense organs and behavioral machinery of others (Dawkins & Krebs, 1978; Krebs & Dawkins, 1984).

The display of anger, for example, rather than functioning to inform others about an internal state, may instead function to manipulate others to back down or to make threats more credible (Hirshleifer, 1987). Calling oneself smart or a competitor stupid may be designed to influence the impressions that others form, rather than to convey accurate information. We intuitively accept this view in the context of advertising and salesmanship. Advertisements are designed to persuade, not to inform. Dawkins and Krebs (1978) argue that this manipulative function is characteristic of communication generally.

This challenge to the "classical" view of language points to an important theoretical and empirical agenda—to chart the ways in which language is used by humans to achieve proximate goals that historically have been linked with reproductive success (Buss, 1986). The frequency and pervasiveness of trait-descriptive terms in the natural language suggest that this important agenda must be faced by personality psychologists. Personality language cannot be under-

stood without understanding the *strategic functions* that its application serves for users in everyday life.

This view of trait usage does not imply deception and manipulation in all contexts. Evolutionary thinking provides instead a precise set of predictions about which contexts will involve accurate information transfer and which will involve deception. Trait usage should convey more accurate information to the extent that the adaptive interests of two interacting individuals coincide. To the extent that the interests of two individuals depart, then trait usage should depart from accurate information transfer.

Consider an illustration. If two men are both competing for sexual access to the same highly attractive woman, their goals conflict. In this context, an evolutionary psychological prediction is that these men will *exaggerate* their own positive traits in self-presentation to the woman, striving to appear to fulfill the characteristics that she desires in a mate. They will also *derogate* their competitor by exaggerating his negative traits, striving to portray the competitor as failing to embody or fulfill the characteristics that the woman desires in a mate. The brother or father of the woman, however, might convey to her *accurate* trait portraits of both male competitors; their adaptive interests, in this context, are more likely to coincide with hers.

In summary, there is no reason to assume that trait usage will be uniformly veridical in conveying accurate information. Indeed, we expect, on theoretical grounds, that trait usage, while always strategic and in that sense manipulative, can be either deceptive or accurate, depending on the context. Trait portrayal of the self and of others, therefore, should depend critically on the *goals* that humans are trying to achieve, on the *context* of surrounding conflicts and confluences of interests, and on the *strategies* that are deployed.

Trait Usage in Mate Attraction and Competitor Derogation

Sexual selection theory provides a powerful model for predicting forms of intrasexual competition. Competition for mates will center on embodying and displaying those characteristics that are desired by the opposite sex. In addition to predicting patterns of self-enhancement, analogous predictions can be made about patterns of derogation of competitors. Competitors will be derogated on those characteristics that the other sex desires.

. Applying this model to the trait domain generates specific pre-

dictions, given our knowledge about what personality characteristics are desired in potential mates. Tactics to attract a mate should involved displaying Surgency, Agreeableness, Conscientiousness, Emotional Stability, and Intellect–Openness. Tactics to derogate intrasexual competitors should involve implying or demonstrating that the competitor is submissive (desurgent), disagreeable, unconscientious, emotionally unstable, and stupid.

Furthermore, because women value surgency or dominance in potential mates more than men do (Buss, 1989a, 1989b; Sadalla, Kenrick, & Vershure, 1987), it was predicted that men more than women will try to enhance their own surgency impressions when attempting to attract a mate; and that men more than women will try to derogate a competitor's surgency to make that competitor less desirable to the other sex. Men's tactics of trait manipulation, more than women's tactics, will center on this first factor of the five-factor model.

These predictions were generally confirmed in two empirical studies (Buss, 1989b). Men more than women mention their importance at work, boast about their accomplishments, and highlight their future ascendance in the hierarchy as part of their mate-attraction strategy. Furthermore, both sexes use tactics designed to appear *agreeable*, such as being sympathetic and helpful; *conscientious*, such as being well groomed and well mannered; and *intelligent*, such as acting sophisticated and displaying knowledge, vocabulary, and humor. No attraction tactics, however, appeared to involve signaling emotional stability.

Trait manipulation also figured prominently in tactics used to derogate competitors (Buss & Dedden, 1990). Men especially attempt to make their competitors appear to be lacking in surgency. They use tactics such as dominating their rival, mentioning that their rival lacks ambition, and asserting that the rival is cowardly, weak, and wimpy.

The low ends of each of the five factors are well represented in derogation tactics. Competitors are derogated by making them appear *disagreeable* (e.g., by calling them selfish, insensitive, inconsiderate, and self-centered); *unconscientious* (e.g., by calling them undisciplined, loose, cheating, and unclean); *emotionally unstable* (e.g., by saying that they are flighty and prone to crying); and *low on intellect* (e.g., by describing them as dumb, stupid, boring, uninteresting, and an airhead). The five factors of personality, in summary, figure prominently in the tactics that competitors use for the goal of denigrating their rivals.

Links between Evolutionary and Other Theoretical Perspectives

In this section, I comment on the links between the current evolutionary psychological perspective and alternative theoretical perspectives on the five-factor model.

Hogan's Socioanalytic Theory

The evolutionary psychological perspective articulated here accords with Hogan's socioanalytic theory on several key assumptions. Both perspectives assume that human personality is best understood in the context of human evolution. Both perspectives take adaptation as critical, and view adaptations as products of evolution by selection. Both perspectives view group living as one of the most important "evolutionary environments" to which humans adapted. Both perspectives endorse a distinction between personality from the perspective of the actor versus personality from the perspective of the observer. And both perspectives stress human adaptations to group living, including *forming cooperative alliances* with others (Hogan's "getting along") and *negotiating hierarchies* (Hogan's "getting ahead") as defining features of human personality. In the conceptual space of all perspectives on personality, evolutionary psychology and socioanalytic theory are close; no other current theories take evolution and adaptation as essential foundations.

Despite broad-brush stroke similarities, the perspectives depart on several critical issues. One difference is the assumption about the number of evolved psychological mechanisms. Hogan (Chapter 5, this volume) assumes "a small number of unconscious biological needs." Evolutionary psychology, in contrast, emphasizes that humans have evolved an extraordinarily *large* number of psychological mechanisms, because the number of adaptive problems that humans have had to solve is very large. Thus, we are motivated not merely to "get along and get ahead," but also to select particular mates, particular friends, and particular coalitions (DeKay & Buss, in preparation); to ensure sexual fidelity and resource provisioning of mates, and continued reciprocity of friends (Buss, Larsen, Westen, & Semmelroth, 1992; Daly et al., 1982; Symons, 1979); to be sensitive to "cheating" in reciprocal relationships (Cosmides, 1989); to derogate

our closest competitors (Buss & Dedden, 1990); and to solve a host of other social adaptive problems (Buss, 1994).

Although solving these numerous adaptive problems historically led to relatively greater survival and reproduction (and hence evolution of particular adaptive mechanisms), the evolved mechanisms cannot be "reduced" to a small number of "biological needs." Instantiated in our evolved brains and expressed through our evolved psychology are a large number of complex psychological mechanisms.

A second difference between the two perspectives is that whereas socioanalytic theory distinguishes between "actor" and "observer," evolutionary psychology partitions both into several separate analytic perspectives. An actor, for example, might display kindness toward a mate, ruthlessness toward an enemy, surgency toward a competitor, openness toward a child, and deference toward the "head man" in the tribe. From an observer's perspective, it matters a great deal whether the observer is an ally, a member of one's coalition, an enemy, or one's father. The personality features that are perceived, emphasized, and communicated to others in everyday life will depend in part on which of these numerous observer perspectives one takes, coupled with the degree to which the observer is at "strategic confluence" or "strategic interference" with the actor. Thus, although evolutionary psychology endorses Hogan's partition of actor and observer, it argues that Hogan does not go far enough in making important *perspectival distinctions*.

In summary, evolutionary psychology and socioanalytic theory are quite compatible with each other. Indeed, socioanalytic theory can be viewed as providing a powerful starting point for the evolutionary analysis of human personality. Evolutionary psychology adopts the evolutionary starting point of socioanalytic theory and expands it to account for the many complex adaptive problems humans confront, the numerous psychological mechanisms that comprise our solutions to those problems, and the critical perspectival differences inherent in social interaction.

McCrae and Costa's Dispositional Theory

McCrae and Costa (Chapter 3, this volume) assume that our basic psychological mechanisms evolved by a process of natural selection. It is now recognized that evolution occurs by a process of *differential*

reproductive success by virtue of heritable differences in design (Williams, 1966; Symons, 1992). Hence, individuals are integrated collections of evolved adaptations. These collections are the "vehicles" by which gene replicators get transmitted to future generations.

McCrae and Costa focus their theory, however, not on universal aspects of personality, but on "personality-related individual differences in adaptation" (p. 32). As such, their theory is highly congruent with the evolutionary psychological formulation articulated here, which focuses on individual differences in the adaptive problems to which people are exposed and on individual differences in the ways in which people solve those adaptive problems. Furthermore, the two theoretical perspectives are in accord on viewing the five factors as capturing critical, adaptively relevant features of personality.

The two perspectives differ, however, on several key issues. The first stems from differences in whether universal aspects of human evolved psychology must be characterized in order to have a viable theory of individual differences. McCrae and Costa's position on this is: "To all such questions about the nature of human nature, trait psychology offers a single yet powerful answer: It varies" (p. 11). Furthermore, "the [five-factor trait] theory ignores universal aspects of personality . . . at the level of basic tendencies" (p. 32). The position of the evolutionary psychological perspective, however, is that one cannot understand individual variation without understanding the "universal design" that provides the parameters upon which variation can occur. Just as one cannot have a theory of "individual differences in cars" (e.g., variations in size, torque, horsepower, braking ability) without understanding "basic car mechanisms," one cannot have a theory of individual personality differences without understanding the common human psychology that forms the foundation upon which those differences are built.

A second critical difference is that McCrae and Costa (Chapter 3, this volume) do not explicitly define what they mean by "adaptation" or "individual differences in adaptation." The concept of "adaptation," however, is too critical to be left undefined or left to people's intuitions, which usually contain vague understandings about "the good of the person" or "the good of society." In the evolutionary psychological framework, adaptations are evolved solutions to problems of individual survival and reproduction. Individuals differ in many respects, including which adaptive problems they confront and which adaptive solutions they pursue.

In summary, the current proposal argues that human nature

cannot be ignored, but must instead form the backbone of a theory of personality, including a formulation of individual differences. Although the McCrae–Costa formulation and the current formulation concur that individual differences entail differences in adaptation, evolutionary psychology makes the concept of adaptation explicit and specifies several different routes by which individuals differ in adaptively relevant contexts.

Wiggins's Dyadic–Interactional Theory

The evolutionary psychological perspective accords with Wiggins's theory of dyadic exchanges in several key areas. Wiggins (1979, Chapter 4, this volume) argues that interpersonal transactions entail the exchange of love and status. Thus, the basic dimensions of personality flow from differences in these two forms of exchange. Surgency or dominance captures exchanges based on status. Agreeableness–quarrelsomeness captures exchanges based on love.

A key issue is: *Why* should exchanges of status and love be so central to human interaction? An evolutionary psychological perspective provides a powerful guide for determining why these transactions are so important. Among humans, reproductively relevant resources are closely linked with position in the status hierarchy. Among tribal societies, those of elevated status gain greater access to better food and territory. Elevated status also carries with it greater health care from others, especially for one's children (Hill & Hurtado, 1989). And not coincidentally, elevated status is closely linked with greater sexual access to more numerous mates for men in polygynous societies and access to more desirable mates for both women and men in presumptively monogamous societies (Buss, 1994).

Exchanges of love and hate are central to the issues of *strategic facilitation* and *strategic interference*. Positive affect flows to our mates, our friends, our coalitions, and our kin—those with whom we form strategic alliances. Negative affect flows toward those with whom we are at strategic interference—our competitors, rivals, and enemies (and sometimes to our mates and friends, when they impede our goals or frustrate our desires). Strategic alliances have always been critical to human survival and reproduction. Strategic interference has always been critical to impeding our survival and reproduction—other humans, in short, are our primary "hostile force of nature"

(Alexander, 1987). Exchanges of love and hate are important precisely because they signal these adaptive social problems.

Goldberg's Lexical Approach

The lexical approach of Goldberg (1981) starts with the assumption that the most significant individual differences in everyday-life interactions with others eventually become encoded as trait terms within the natural language. Presumably, these individual differences are critical in communicating with others, because language is a social medium.

Furthermore, Goldberg (1981) assumes that the five factors that emerge from the lexical approach are critical to answering questions that might be posed about a stranger with whom one might interact:

1. Is X active and dominant or passive and submissive? (Can I bully X or will X try to bully me?)
2. Is X agreeable (warm and pleasant) or disagreeable (cold and distant)?
3. Can I count on X? (Is X responsible and conscientious or undependable and negligent?)
4. Is X crazy (unpredictable) or sane (stable)?
5. Is X smart or dumb? (How easy will it be for me to teach X?)

By posing these questions, Goldberg pointed to an important agenda for the field of personality: What information does trait usage convey that is critical to interacting with others in everyday life?

Evolutionary psychology provides a *heuristic* for addressing this critical question. We might reformulate Goldberg's questions by infusing them with adaptively relevant content:

1. How powerful is X and where is he or she in the status hierarchy (Surgency–Submissivness)?
2. Is this person a strategic cooperator or will he or she interfere with the pursuit of my strategies (Agreeableness–Quarrelsomeness)?
3. Can this person be trusted, or will he or she defect (Conscientiousness–Unreliability)?
4. Is this person in command of his or her personal resources,

or does he or she have a volatile and tenuous hold on them (Emotional Stability–Emotional Instability)?
5. At what level should I pitch my attempts at strategic manipulation (Intellect–Openness vs. Stupidity–Boorishness)?

Is the Five-Factor Model Comprehensive from an Evolutionary Psychological Perspective?

From the current theoretical perspective, it is unlikely that the five factors alone will prove to be sufficient. One reason for this view is that many important individual differences are not captured, or are only obliquely captured, by the five factors. One example will be used to illustrate this point—individual differences in sexuality.

In the history of the lexical approach that led to the five factors, several important exclusionary criteria were used to reduce the list of traits to a more manageable number. For example, words that tended to be "sex-linked" were excluded (Norman, 1967). Thus, individual differences in "coyness" were excluded because the term "coy" was presumed to be more relevant to women than to men. Unfortunately, *many* individual differences in the sexual sphere tend to be sex-linked in this manner. Thus, the use of "sex-linkage" as an exclusion criterion inadvertently resulted in the near total omission of individual differences in sexuality.

Recently, David Schmitt and I (Schmitt & Buss, under review) excavated all trait terms that referred to individual differences in sexuality—terms such as "coy," "chaste," "sexy," "promiscuous," and "prudish." Factor analyses of these terms, in conjunction with the five factors, revealed that although some dimensions of sexuality were correlated with the five factors, several of the sexuality dimensions contained substantial variance independent of the five-factor model. Furthermore, some individual differences in sexuality were orthogonal to the five factors and formed their own factors. Individual differences in sexuality are critical from an evolutionary perspective, because they signify differences in "sexual strategy" (Buss & Schmitt, 1993).

To say that the five factors are unlikely to be comprehensive in no way denies their profound significance. Indeed, a plausible argument can be made that the five factors capture individual differences that transcend a wide variety of social interactions, including mateships, friendships, kinships, and coalitions. In contrast, other differences—

such as differences in sexual strategy—become important in more narrowly delineated social contexts, such as mating. This merely highlights a central theme of this chapter: When posing the question of importance, it is critical to ask *important for what adaptive purpose?*

Discussion

The current chapter argues for extending the study of personality traits in two related directions. The first is understanding the role of personality traits in social interaction. The results of the study of personality and mate-retention tactics, for example, demonstrate clearly that personality traits such as Surgency, Agreeableness, and Conscientiousness have profound consequences for social behavior in the mating domain. Other studies have shown the importance of personality in social domains, such as the tactics people use to influence others (Buss, 1992), and conflict in married couples (Buss, 1991a). These efforts represent just the start of understanding the important role that personality traits play in social interaction.

The second new direction for personality, closely related to the first, is adding *functional analysis* to the understanding of personality traits. This level entails examining the role of personality traits in creating adaptive problems, and perhaps more important, the role of personality in solving adaptive problems. The finding that major traits such as Surgency, Agreeableness, and Emotional Stability are linked with the solutions individuals deploy to solve the problem of mate retention provides just one illustration of this new level of analysis.

By adding these related levels of analysis to our field, we elevate the study of personality traits to a more important place within the broader field of psychology. Personality psychology is now poised to expand beyond the province of a small group of technical specialists. Personality traits play a major role in the central concerns of other branches of psychology, such as social psychology and developmental psychology. And the evolutionary psychology framework demonstrates that personality traits are not isolated from the universal human mechanisms that form the core of other branches of psychology. Personality traits and universal psychological mechanisms can be integrated within a single, unified conceptual framework. Theoretical perspectives on the five-factor model provide an important step toward this integrative direction.

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