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## Evolutionary Perspectives on Interpersonal Relationships

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Interpersonal communication research is inherently interdisciplinary. Interpersonal communication scholars often integrate and synthesize the work of other disciplines, and their work is affected by developments in those disciplines. One such development is the (re)emergence of evolutionary approaches for studying human behavior. Although evolutionary theory is considered among humanity's crowning scientific-theoretical achievements ever since Darwin (1859), its early (mis)application to human behaviors had regrettable consequences such as justifications of colonialism, slavery, eugenics, and genocide. Partially due to these abuses, evolutionary explanations of human behavior have been discredited for most of the latter part of the 20th century. Recently, however, evolutionary explanations of human behavior have become more sophisticated in their descriptive and predictive ability and in their ethical awareness, and have regained currency in many of the social sciences. In fact, evolutionary theory is poised to become the standard explanatory framework for any scientific explanation of human behavior.

This change has taken place mainly in psychology. With a few exceptions, interpersonal communication researchers thus far have largely ignored these changes. This is unfortunate, because it means that our discipline ignores what

we personally consider to be the most exciting new insights into human behavior, in general, and interpersonal communication, in particular. In this chapter, we will show why these insights are so exciting and how they have affected our own research and that of others. Ultimately, we hope to motivate interpersonal communication scholars to consider the relevance of evolutionary theory to their own investigations and to provoke a new dialogue among interpersonal communication scholars about the potential utility and consequences of adopting evolutionary principles as a guiding framework for inquiry. We believe that these efforts will ultimately contribute to the development of this important theoretic approach and help shape how it is used to explain human behavior rather than leaving this important task to other disciplines.

After a brief primer on evolutionary psychology, we review our own research in interpersonal communication that is informed by evolutionary theory. Then we discuss research by others both within and outside our discipline that has used evolutionary theory to address issues relevant to interpersonal communication. We will conclude with a short section on future developments that we foresee for the evolutionary approach to interpersonal communication.

## **Evolutionary Psychology: A Primer**

Thus far, the most sophisticated accounts of how evolution affects human behavior have been provided by evolutionary psychologists. Because not all readers are familiar with it, we briefly review its key insights and concepts here. For more complete introductions, we refer the reader to Buss (2007) and Buss and Kenrick (1998).

Evolutionary psychology is based on Darwin's (1859) theory of evolution, which in its modern form proposes that species evolve because their genetic information is subject to random mutation and natural selection. In this process, selection favors those mutations, called adaptations, that increase the gene carrier's chance at reproduction and survival, which are more likely to be passed on to the next generation. Thus, selection affects both survival and reproductive strategies of the organism. An important clarification about selection is that it operates at the level of the gene, not at the level of the organism. Thus, adaptations are not necessarily best for the individual, but will best ensure the continuation of the individual's genes into subsequent generations. This feature of selection helps explain, for instance, why individuals invest resources in their children, nieces and nephews, or grandchildren, even at a cost to themselves (a topic we will take up in greater detail below). Another important insight of evolutionary theory is that for adaptations to occur, the mutation need not lead to

perfection. All that is required for an adaptation is a comparative advantage over intra- and interspecies competitors, given the environmental conditions at the time.

A core concept in evolutionary psychology is *evolved psychological mechanism* (EPM), which is the cognitive equivalent to the physical adaptation in bodily evolution. EPMs are genetically based and therefore subject to evolution. They allow an organism to solve routine information processing problems of survival and reproduction efficiently and reliably. Examples of EPMs in humans related to survival include a preference for fatty and sugary foods (motivating sufficient calorie intake) and fear of heights (avoiding dangerous places). Examples of EPMs related to reproduction include a preference for mates exhibiting signs of genetic and physical health, because resulting offspring would have the best chances for survival.

Another core concept in evolutionary psychology is the *environment of evolutionary adaptedness* (EEA), which refers to the environmental conditions that promoted a specific adaptation. These are potentially at odds with the current environment that the organism inhabits. Examples in humans include again humans' preference for high-calorie foods, which in the industrialized world where food is plentiful may actually be maladaptive because it leads to obesity. Throughout human history, however, food supplies were unreliable and usually insufficient, and this adaptation ensured that humans at least attempted to ingest enough sugar and fat to survive. Considering the long time required for humans to go through enough generations for genetic changes to penetrate the gene pool, the EEA is particularly important, because it forces scholars to consider the conditions present when adaptations occurred rather than considering the conditions humans face today. The length of time required for adaptations to take place also suggests that the specific problem addressed by an EPM has to have been a historically stable aspect of the environment. Given that humans and their ancestors have lived in groups for millennia, the fundamental interpersonal challenges they face have not substantially changed over thousands of generations (such as finding and retaining mates, building coalitions, maintaining groups, influencing others, and coordinating activities) and, quite possibly, are subject to evolution.

## **Our Own Work: Using Evolutionary Theory in Interpersonal Communication**

Here, we discuss how we use evolutionary theory researching important interpersonal processes. We both come from interpersonal communication programs emphasizing quantitative social science (Floyd at Arizona,

Koerner at Wisconsin), but neither had been trained in evolutionary explanations of communicative behaviors. Starting our own research programs, however, we soon realized that many of the communication phenomena we were interested in could be better understood when considering an evolutionary framework. Examples discussed below include Koerner's work on relational models and sharing social reality in families and Floyd's work on resource allocation in families and the effects of affectionate communication on personal health.

### *Relational Models*

Research has shown that relational knowledge comes in two forms, declarative and procedural (Baldwin, 1992). Declarative knowledge defines what things are, whereas procedural knowledge defines how things work in the form of if-then contingencies. Both types of knowledge are not acquired by the brain in the passive and reflective manner, as if inscribed onto a *tabula rasa* (Pinker, 2002). Rather, the brain anticipates what it learns from interaction with the environment by having certain proto brain structures that, when exposed to the right stimuli, develop into the appropriate representations. For example, as social mammals, humans are inherently equipped with social instincts (EPMs related to relationships) that allow them to form and maintain interpersonal relationships. Like other EPMs, these have been subject to evolutionary pressures. Pinker (1994) has explicated a similar process with regard to language acquisition and shown that children will develop complete representations of language even when exposed to incomplete or inconsistent examples of language use in their speech communities, something he argues is only possible because of proto language structures in the developing brain.

Extending this idea, Koerner (2006) proposed that cognitive representations of relationships are based on an evolved "universal grammar of relationships." An important aspect of this grammar is fundamental forms of relating, which Koerner argued consist of relational models first identified by Fiske (1991, 1992, 2004): communal sharing, authority ranking, equality matching, and market pricing.

*Communal sharing* is similar to Mills and Clark's (1982) communal relationship. Relating according to this model means that partners are equivalent and undifferentiated and share values, beliefs, and goals. In communal sharing, no distinct individual identities exist; rather, the groups to which individuals belong are differentiated. Communal sharing is often based on perceptions of common bonds, such as familial or tribal relationships.

*Authority ranking* means persons are differentiated by social rank, and identity is equivalent to rank. Differences between individuals arise from their hierarchical positions with respect to one another. Each rank brings with it its own set of rights and responsibilities, which form the basis for expectations and evaluations of one's own and of others' behaviors.

*Equality matching* means equality between individuals. When using this model, persons maintain equality, and interactions and exchanges are balanced in direct one-for-one reciprocity, such as turn-taking or tit-for-tat retaliation. In equality matching, individuals are distinct social entities with the *exact* same rights and responsibilities. Imbalances are salient and need to be resolved because they violate the basis of the relationship.

*Market pricing* means interactions and social exchanges are similar to economic transactions. Relating according to this model is characterized by proportionality, which requires that different aspects of relationships are converted to a single currency or metric. Existing imbalances in certain domains of a relationship can be balanced by reverse imbalances in other domains of the same relationship. The market pricing relational model is roughly equivalent to social exchange theory (Rolloff, 1981, 1987; Rusbult & Buunk, 1993) and to Mills and Clark's exchange relationship (Clark & Mills, 1979; Mills & Clark, 1982).

It is important to remember that relational models specify ways of relating; not relationships. That is, within interpersonal relationships, partners relate to each other using all four relational models at different times and in different relationship domains. Koerner (2006) demonstrated this by comparing relational model use across three relationship types (mother, friend, and acquaintance) and two cultures (the United States and Singapore). Results showed that in eight different relationship domains (exchange, distribution and use, working, decision making, influence, identity, relating, and relationship), participants used all four relational models to varying degrees in their three relationships. The relative use of relational models was affected by culture (i.e., horizontal and vertical individualism/collectivism, Triandis, 1995), by relationship type, and by relationship domain.

Regarding culture, Koerner found that horizontal collectivism was correlated with communal sharing, vertical collectivism with authority ranking, horizontal individualism with equality matching, and vertical individualism with market pricing. These correlations, however, were only modest ( $.11 < r < .26$ ), indicating that while there is a main effect of culture on relational model use, it is a small one.

With respect to relationship types, results indicated that participants in their relationships with mothers most frequently used communal sharing, followed by authority ranking and equality matching, and finally market pricing. In

friendships, communal sharing and equality matching were used most frequently, followed by market pricing, and authority ranking was used least. In acquaintanceships, equality matching and market pricing were used most frequently, and communal sharing and authority ranking were used least. Although the differences in model use explained by relationship type were statistically significant, the effects sizes again were modest ( $\eta_p^2 = .04$  to  $.11$ ).

Main effects were also obtained for relationship domains, reflecting that certain relational models are used more frequently in some domains regardless of relationship type. For example, in decision making, communal sharing was used frequently, but equality matching and authority ranking were not. More important than the main effects for relationship, culture, and domain, however, was that all possible two- and three-way interactions between culture, relationship type, and relationship domains were significant ( $\eta_p^2 = .04$  to  $.29$ ). This indicates that while the forms of relating defined by the relational models are stable, how they are used in relationships is dynamic and affected by culture, relationship type, relationship domains and how these variables interact. Rather than describing stable relationships, relational models constitute the building blocks of the combinatorial system that makes up the universal grammar of relationships. Discovering the rules by which these building blocks are combined, and particularly, how such rules are negotiated communicatively, still needs to be investigated. Because the cognitive mechanisms underlying these rules must have evolved, this discovery will only be possible if future research is informed by an evolutionary framework.

### *Family Communication and Shared Social Reality*

Another area in which Koerner's research is informed by evolutionary theory is family communication patterns theory, which describes how habitual use of communication behaviors to achieve shared social reality leads to stable family communication patterns with predictable outcomes. Koerner and colleagues investigated how genetic relatedness affects family communication in the context of adoption and tested the hypothesis that different types of family communication patterns have different effects on adopted versus nonadopted children.

An initial study (Rueter & Koerner, 2008), using a sample of 592 family quartets (2 parents and 2 children) consisting of families with various configurations of biological and adopted children, produced results that suggest that family communication patterns are more influential on the adjustment and social competence of adopted than of biological children. Specifically, family communication that de-emphasizes conversation orientation put adopted children at a three to five times higher risk for maladaptation than biological children. In contrast, there are no differences in adjustment

between biological and adopted children stemming from families emphasizing conversation orientation. Thus, whereas “good” communication benefits all children equally well, “poor” parent-child communication does create risk especially for adopted children, whereas biological children seem more resilient to it. Rueter and Koerner interpret these findings to mean that biologically related family members are less reliant on communication to establish a shared reality than nonrelated family members, because some of their social perception and thought processes are more similar than those of biologically unrelated family members. Clearly, this research program is just developing and these findings and explanations are preliminary at this point, but like Koerner’s work on relational models, they do suggest an important contribution of social EPMs, which ultimately can only be understood within an evolutionary framework.

### *Resource Allocation in Family Relationships*

One superordinate evolutionary goal is reproduction, but because selection operates at the level of genes rather than organisms, individuals need not reproduce for genes to achieve reproductive success. In his *theory of inclusive fitness*, Hamilton (1964) clarified that individuals can aid the reproductive success of their genes not only by procreation, but also by aiding other carriers of their genetic material such as siblings, nephews, or cousins. Relationships vary in terms of their level of genetic relatedness, that is, the proportion of genes that vary from person to person. For instance, monozygotic twins share 100% of their genes, whereas dizygotic twins, full biological siblings, and parents and children share 50%. Half-biological siblings and grandparents and grandchildren share 25%, first cousins share 12.5%, and individuals typically share none of their unique genetic material with steprelatives, adoptive relatives, in-laws, and spouses. Consequently, some personal relationships are more important than others in terms of their ability to contribute to reproductive success.

It is therefore adaptive with respect to reproductive success for individuals to contribute more of their resources to those who share their genes than to genetically unrelated others, other things being equal. This qualification—other things being equal—is consequential for two reasons. First, in apparent contradiction to Hamilton’s (1964) argument, people routinely invest heavily in friends and romantic partners with whom they share no genetic material. Two observations resolve this ostensible contradiction. First, romantic partners often become sexual partners, enabling direct reproduction, and even platonic friends can contribute to one’s reproductive success by facilitating introductions to potential romantic partners. Thus, even though friends and romantic partners often share none of an individual’s genetic material, they

can both contribute to the individual's reproductive success. Second, although reproduction is a superordinate goal, it is not one's only goal in life. More proximal goals, such as security or companionship, can motivate the formation of relationships even if they have no potential to contribute to reproductive success.

A second reason is that genetic relatedness alone does not determine how successful a relative is in propagating one's genes. Individual differences matter. For example, a menopausal aunt is less likely to propagate one's genes than a pregnant granddaughter, even though one shares an equal proportion of genes with each. Thus, we would expect adults to invest more heavily in younger relatives than in the older ones.

When all else is equal, however, genetic relatedness does determine investment. For example, Daly and Wilson (1980) argued that parents discriminate among children when investing resources, to maximize their own chances for reproductive success, a claim supported by Anderson, Kaplan, and Lancaster (1997), who found parents investing substantially more economic resources in biological children than in stepchildren.

Floyd (2006) has proposed that the communication of affection is a resource that contributes to survival via its health benefits and, therefore, to the ability to procreate. If Hamilton's (1964) and Daly and Wilson's (1980) theories are correct, it follows that certain relationships should be more affectionate than others. This hypothesis has been tested in family relationships that vary systematically in genetic relatedness. For instance, Floyd and Morman (2002) found that men gave more affection to biological sons than to stepsons. Similarly, Floyd and Morr (2003) reported that adults were more affectionate with siblings than siblings-in-law. Importantly, each of these findings would support alternative, nonevolutionary explanations. For instance, most people have known their biological relatives longer than their steprelatives or in-laws, and probably feel emotionally closer to their biological relatives; thus, variables such as closeness or relationship duration could account for the difference in affectionate behavior observed between relationship types. In both studies, however, the differences in affectionate behavior could not be accounted for by differences in closeness, relational duration, proximity, frequency of contact, or other plausible alternatives. Even with these variables controlled, the relationships still differed systematically in their levels of affectionate behavior in the manner that an evolutionary explanation predicts.

Daly and Wilson (1980) also suggested that parents discriminate even among their biological children, investing more resources in those who are most likely to produce offspring. Because parents have greater reproductive success when their children reproduce than when they do not, it is adaptive for them to invest more in children with greater reproductive potential. Several

factors might inhibit reproductive probability, including sterility or the inability to attract a mate. Homosexuality also inhibits reproductive probability, and research has shown that fathers give more affection to heterosexual than homosexual sons, even with competing explanations controlled (Floyd, 2001).

### *Affectionate Communication and Health*

A robust literature demonstrates that receiving affectionate behavior benefits health (Floyd, 2006), and recent research has illuminated the health benefits of expressing affection. Floyd's (2006) *affection exchange theory* (AET) argues that affectionate behavior is adaptive when received and also when expressed. Specifically, receiving and expressing affection reduces the body's susceptibility to stress and activates its hormonal reward systems, which have sedative and analgesic effects.

Several studies aimed to identify the health parameters most reliably associated with affectionate communication. For instance, Floyd (2002) demonstrated that highly affectionate people are happier, more self-assured, less stressed, less likely to be depressed, more likely to engage in regular social activity, less likely to experience social isolation, and more likely to be in good mental health. Similarly, Floyd, Hesse, and Haynes (2007) found that a higher trait affection level is associated with lower blood pressure.

Based on these associations, experiments have examined potential causal relationships between affection and health. For instance, Floyd, Mikkelson, Tafoya, et al. (2007) found that affectionate writing accelerates recovery from stress, and Floyd, Mikkelson, Hesse, and Pauley (2007) demonstrated that affectionate writing significantly reduced cholesterol. Current work in Floyd's laboratory is investigating outcomes such as C-reactive protein, Epstein-Barr virus antibodies, and serum glucose. If affectionate communication is adaptive for survival, as AET claims, then exploration of its health benefits can generate understanding about the connections between social behavior and well-being.

## **The Work of Others: Applications of Evolutionary Theory Relevant to Interpersonal Communication**

We are far from the only scholars using the evolutionary perspective in ways that inform our understanding of interpersonal communication. Indeed, most relevant work is done in other disciplines, and it behooves interpersonal communication researchers to be aware of the implications of this research for the study of interpersonal communication. In this section, we

take a brief look at three areas of research that are informed by evolutionary theories and relevant for interpersonal communication: attachment, physical attraction, and the interpersonal investments of mothers and fathers in their children.

### *Attachment*

Few relationship theories rival attachment theory in terms of the attention it has received and the research it has inspired. Often overlooked is that attachment theory is firmly rooted in evolutionary theory. Influenced by the work of early ethologists such as Konrad Lorenz, who studied imprinting of birds, Bowlby investigated attachment bonds between infants and primary caregivers, based on the understanding that such bonds are required for infants to survive and therefore should be instinctive, that is, evolved.

Attachment is particularly relevant to applications of evolutionary informed interpersonal research because it illuminates the interdependence of innateness, EPMs, and the environment. Regardless of the specific model of attachment proposed, attachment theories (Ainsworth, Blehar, Waters, & Walls, 1978; Bartholomew, 1990; Bartholomew & Horowitz, 1991; Bowlby, 1969, 1972) propose that infant attachment develops based on care received from primary caregivers. Consistent and responsive care leads to secure attachment, consistent neglect leads to avoidant and/or dismissive attachment, and inconsistent or overinvolved care leads to anxious-ambivalent or preoccupied attachment. Thus, it is the combination of an EPM (i.e., the attachment system) with environmental stimuli (i.e., parental care) that leads to the socially relevant behavior (i.e., infant attachment). Thus, rather than describing a deterministic and inflexible process that excludes the social, attachment describes an evolved mechanism that is flexible and responsive to the environment.

### *Physical Attractiveness in Personal Relationships*

From an evolutionary perspective, the principal reason physical attraction exists is to promote procreation. It follows that physical attributes humans find attractive should enhance the potential for producing healthy offspring. Thus, what physical features are generally considered attractive is neither due to chance nor the product of culture or media messages. Empirical research supports this view and shows that the notion “beauty is in the eye of the beholder,” although pervasive, is largely untrue; humans show substantial agreement in what they find physically attractive about others. There is individual, cultural, and historical variation in judgments of attractiveness,

but it is minimal compared with the level of consistency across individuals, cultures, and time periods (Buss, 1989).

One practically universal predictor of attractiveness is symmetry—the extent to which both sides of the body mirror each other. During fetal development, environmental stressors (e.g., pollutants) and genetic problems (e.g., recessive genes) cause an organism to deviate from symmetry, making symmetry a reliable marker of genetic fitness (Trivers, Manning, Thornhill, Singh, & McGuire, 1999). Thus, humans should find symmetry attractive, and multiple studies confirm this (Langlois et al., 2000).

Another practically universal aspect of attractiveness is a female's waist-to-hip ratio (WHR). Across cultures and historical periods, women have been considered most attractive when their WHR is approximately .70 (Singh, 1993). This is true regardless of the woman's absolute body dimensions; for instance, every single Miss America crowned between 1923 and 1987—during which time preferences for women's overall body type varied—had a WHR between .69 and .72 (Singh, 1993).

A WHR of .70 also maximizes fertility. In women, it corresponds to higher levels of estrogens (Tonkelaar, Seidell, van Noord, Baander-van Halewijn, & Ouwehand, 1990) and lower levels of androgens (Rebuffé-Scrive, Cullberg, Lundberg, Lindstedt, & Björntorp, 1989). These increase a woman's probability of getting pregnant and also of carrying a fetus to term. For example, Zaadstra et al. (1993) found that women with a WHR less than .80 were twice as likely to get pregnant following artificial insemination as were those with ratios greater than .80.

If perceptions of attractiveness have evolved to increase reproductive success, it follows that attractiveness should translate into reproductive success. Several studies have demonstrated this. For instance, body symmetry predicts the number of sexual partners for adults (e.g., Gangestad & Thornhill, 1997) and Thornhill, Gangestad, and Comer (1995) found that a man's body symmetry predicts his partner's likelihood of achieving orgasm during intercourse. This is significant for reproduction because the female orgasm increases retention of her partner's sperm in the reproductive tract, elevating her chances for pregnancy (Baxter & Bellis, 1993).

### *Women's and Men's Parental Care for Children*

Mothers provide more parental care, on average, than do fathers. Feminist scholars have suggested that this division of labor results from patriarchal societies and the culturally sanctioned subjugation of women (Chodorow, 1978). It is not a uniquely human phenomenon, however; maternal care

exceeds paternal care in a huge range of species, including species of birds, reptiles, fish, insects, and amphibia (Clutton-Brock, 1991). It is reasonable to argue, therefore, that this division of parental labor reflects motivations that are generalizable beyond *Homo sapiens*, making any human-specific explanation necessarily incomplete.

Evolutionary psychologists argue that a father's lesser investments results from *paternity certainty*, or a father's certainty that his mate's children are his biological offspring and not those of another man (Trivers, 1972). Maternity certainty is seldom in question, but because sexual fertilization in humans occurs internally, paternity certainty is more vulnerable. Sexual infidelity on the part of the mother, whether voluntary or involuntary, makes fertilization by a man other than her mate possible (Daly & Wilson, 1987).

Paternity certainty is significant for parental labor because, in an evolutionary sense, men hamper their reproductive success by investing in children who are not their biological offspring, because they do not carry the men's genetic material. Two caveats about this explanation are in order. First, men do not consciously calculate their paternity certainty and use it to make decisions about parental investment. According to evolutionary psychology, they do not have to; rather, the tendency to be attuned to paternity certainty would have been selected for, because it maximizes reproductive success. Second, this explanation does not suggest that men do (or should) invest nothing in nonbiological children. As Pinker (2002) noted, reproductive success is not the only thing that matters in the parent-child relationship; parents also have moral, ethical, and legal obligations to care for their children, whether those children will further their reproductive success or not.

## Summary and Conclusion

We have reviewed principles relevant to Darwin's theories of natural and sexual selection and evolutionary psychology, discussed our own applications of these principles in communication research, and identified other provocative lines of research that are relevant for the study of human communication. To bring our discussion full circle, we focus in this section on some of the benefits and challenges of using evolutionary theories in the study of communication, and we offer three pragmatic suggestions for researchers wishing to do so.

### *Benefits and Challenges*

Perhaps the greatest benefit to the evolutionary approach is the sheer breadth of human behavior it can explain. Whereas many communication theories focus on singular phenomena (e.g., adaptation, deception,

uncertainty reduction), evolutionary psychology provides a basis for understanding and predicting a wide variety of social behaviors, including those related to conflict, emotion, intimacy, deception, attraction, pair bonding, infidelity, and coercion. Evolutionary psychology is not a “theory of everything,” and other theories may be better suited to the task of predicting, for instance, moment-to-moment changes in behavioral adaptation (e.g., interaction adaptation theory; Burgoon, Stern, & Dillman, 1995). However, no theoretic approach used in the social sciences even approaches the evolutionary perspective in terms of the breadth of human behaviors it can explain. To the extent that theories used in the communication discipline get narrower and narrower in their focus (e.g., language expectancy theory, Burgoon, 1995; inconsistent nurturing as control theory, Le Poire, Hallett, & Erlandson, 2000), their practical utility diminishes even if their predictive power is great. In contrast, given the superordinate nature of survival and reproductive motives, principles of natural selection and evolutionary psychology provide a coherent, parsimonious, and powerfully predictive basis for explaining myriad social behaviors—at the individual, dyadic, familial, group, and social levels—under a single explanatory framework.

A second advantage of the evolutionary approach is that it explains some counterintuitive aspects of the human social experience. In the nonverbal communication literature, for instance, much attention has been paid to the *halo effect*, wherein people with one positive quality (usually physical attractiveness) are perceived as having other positive qualities as well (such as higher than average intelligence, honesty, or empathy; see Dion, 1986; Feingold, 1992). Social scientists have stressed that the halo effect is merely perceptual, and that attractive people are not *actually* more intelligent, honest, or empathic than average, but are only perceived to be. Evolutionary psychology provides a basis for predicting otherwise, however, at least with respect to intelligence. Kanazawa and Kovar (2004) offered four propositions that, if supported, logically imply that attractive people actually are more intelligent than average:

- (1) Men who are more intelligent are more likely to attain higher status than men who are less intelligent.
- (2) Higher-status men are more likely to mate with beautiful women than lower-status men.
- (3) Intelligence is heritable.
- (4) Beauty is heritable. (p. 227)

Considerable empirical evidence exists to support each of these propositions, and considered collectively, they provide a coherent and logically complete explanation for the counterintuitive notion that beautiful people are indeed more intelligent than less attractive people.

Chief among the challenges of using the evolutionary approach is that it is widely criticized (by academics and nonacademics alike) on the basis of misunderstanding. Perhaps the most common criticism leveled against evolutionary theory—and evolutionary psychology, in particular—is that it justifies social inequities by calling them “natural.” For instance, some would say that the evolutionary explanation for the division of parental labor discussed earlier is untenable because it suggests that women’s greater investment in children is natural, therefore justifying policies or social structures designed to keep women in the home and out of the workplace. A more extreme example comes from Thornhill and Palmer’s (2000) explanation of rape, not as an exercise of men’s power over women, but as an evolved strategy for men to further their reproductive success. Evolutionary explanations for social ills are understandably provocative and controversial—and unfortunately, researchers in the past have attempted to use evolutionary principles as justification for racist and sexist social policies.

Explaining a behavior is not the same thing as condoning it, however, and calling something *natural* does not imply that it is *good*. No contemporary evolutionary psychologist would argue that rape is justified or that women should not work simply because he or she understands the reasons why these patterns might have evolved. It must be recalled that evolutionary psychology locates the adaptive purpose behind a characteristic by referencing how the characteristic was advantageous in the EEA, which may or may not imply that the characteristic is still adaptive today. Explaining why behaviors such as rape or differential parental investment might have provided survival or reproductive advantages in the EEA in no way provides ammunition for justifying these behaviors today, nor does it prevent scientists or policymakers from working to alter them.

A related criticism is that evolutionary explanations for behavior portray people as slaves to their biology, negating not only the concept of free will but also the rich influences of culture, gender, class, media, and other social variables. This notion is so fundamentally contrary to many people’s conscious experience that it is easy to dismiss evolutionary explanations on this basis. In fact, however, the premise was inaccurate to begin with, in two important ways. First, *suggesting that a behavior has an evolutionary cause does not imply that the behavior has no other causes*. A propensity for affection may be evolutionarily motivated, for instance, but affectionate behavior is also subject to norms of politeness (Erbert & Floyd, 2004), demand characteristics of the social environment (Floyd & Morman, 1997), and other variables. Few behaviors, if any, can reasonably be said to have a singular

cause, so evolutionary explanations no more dismiss other potential causes than environmental explanations do. The second inaccuracy in the premise is the notion that a behavior that is evolutionarily motivated cannot be controlled, thereby releasing people from their liability for it (“my genes made me do it”). This, too, is a misunderstanding of evolutionary theory. Few would disagree, for instance, that behaviors such as eating and sleeping are biologically motivated; humans eat and sleep because we must do these things to survive, not because we were socialized into eating and sleeping. That does not imply that we cannot control these behaviors, however, only that there is an evolutionary motive for doing them in the first place. Consequently, it is a logical fallacy to conclude that people bear no responsibility for their behaviors if those behaviors were evolutionarily motivated, and *no one working in the field of evolutionary psychology suggests this* (see Alcock, 2001).

A third criticism often levied against evolutionary theory is that it is nonfalsifiable. Because its causal mechanisms are ultimate motivations (survival and procreation) rather than proximal states that can be readily manipulated (such as specific cognitions or emotions) and because the theoretic argument points to what was adaptive in the EEA rather than in contemporary contexts, it is easy to conclude that evolutionary theories are not falsifiable, and therefore, of limited scientific utility. This is an important concern for evolutionary scientists, one that should motivate careful attention to experimental design (as we detail below). It must be remembered, however, that falsifiability is a property of scientific *hypotheses*, not theories. Through the process of logical deduction, scientific theories give rise to hypotheses that are products of—and therefore, not part of—the theories from which they are derived. Hypotheses are directly testable and must be both verifiable and falsifiable to be of scientific value (Reynolds, 2006). The relevant concern, therefore, is *whether hypotheses derived from evolutionary theories are falsifiable*, and we submit that they are. In this chapter, for instance, we have discussed the hypotheses that women provide more parental care than men, that horizontal collectivism predicts communal sharing, and that physical symmetry predicts a person’s attractiveness, among other predictions. Each of these hypotheses is verifiable and falsifiable because it can be either supported or unsupported on the basis of data, just as most hypotheses derived from social and cultural theories can be. Theories themselves (whether evolutionary or social) are never directly falsifiable because they are not directly testable; support for theories is always implied by support for hypotheses derived from them (see Suppe, 1977).

## Areas of Opportunity for Future Work

One arena in which evolutionary principles are strongly explanatory is the study of family communication. According to evolutionary psychology, family relationships are distinct from all other human relationships because they involve reproductive processes and shared genetic material. As Floyd and Haynes (2005) detailed, the evolutionary approach provides a basis for understanding a host of variables relevant to family communication, including romantic love, jealousy, sexual infidelity, divorce, nepotism, parental care, and parent-child conflict. Instead of constructing different explanations for each of these relational characteristics, evolutionary psychology explains all of them as a function of the drive for reproductive success. This is an elegant, parsimonious explanation with extraordinary predictive power and the potential to unify a broad range of findings on family communication under a single explanatory framework.

Likewise, the study of emotion and emotional communication would benefit greatly by employing evolutionary principles. Emotions have both survival and reproductive benefit: Fear, for instance, motivates people to fight or flee from perceived threats, whereas jealousy promotes vigilance over the fidelity of one's romantic relationship. The same motivations can drive emotional expression: Conveying anger to a foe can derail an impending attack, and conveying interest and attraction can accelerate relational development. There is no question that the communication of emotion is subject to individual differences and cultural, social, and gender effects (see, e.g., Metts & Planalp, 2002). The functions served by an emotional expression may well be linked to the evolutionary motives that gave rise to the emotion in the first place, however, so a more thorough understanding of communicative behavior is facilitated by accounting for that.

Finally, explicating the constituent parts and delineating the rules of implementation of the universal grammar of relationships also provides a fruitful field for further investigations. Although relational models are good candidates to be at least some of the constituent parts, there certainly are more that await discovery. Moreover, the ways in which these constitute parts are combined and implemented in social cognition are almost entirely unknown, although culture probably plays a role (Fiske, 2004), as do individual differences in personality and experiences. In other words, we are only at the very beginning of understanding how a relational grammar may work. Because it holds the promise to provide a comprehensive account of how relationships are represented in cognition and how relational information is processed, its potential impact on the study of interpersonal communication is immense. For example, rather than pitting theories proposing

communal, equity, or social exchange relationships against each other, by recognizing that individuals relate to each other according to the different relational models within the same relationship, relational grammar theory directs the researchers' focus to those variables that make one mode of relating more likely than others. In addition, a focus on communication is emphasized because the possibility at any given time to relate in various modes highlights the need for interactants to come to an agreement about what mode to employ in a given situation.

### *Practical Suggestions*

For those researchers who wish to incorporate evolutionary principles into their own research, let us conclude this chapter by echoing three practical suggestions offered by Floyd and Haynes (2005). The first is to conceptualize variables of interest in terms of the survival and/or procreative benefits they would likely have conferred in the EEA. In what ways would a given characteristic (attractiveness, intelligence, propensity for aggression) have helped our evolutionary ancestors respond successfully to survival or reproductive challenges? For instance, attractiveness increases mating opportunities, intelligence provides problem-solving abilities, and a propensity for aggression can keep potential survival threats at bay. Whether the characteristic is adaptive in the modern environment is not relevant to whether it once served an adaptive function; as we noted above, for instance, the preference for sweets would have ensured that our ancestors consumed adequate sugar, which is necessary for survival, even though this preference is somewhat maladaptive today. To be subject to the laws of natural selection, however, the characteristic must be at least partially heritable, so purely learned behaviors (such as the language one speaks) cannot be selected for, even though the mechanisms that support them (such as the cognitive ability to acquire language) may be.

A second practical suggestion is to design hypothesis tests such that alternative explanations can be controlled for. This is a hallmark of the scientific process, but it is particularly important in this context because the same prediction can often be derived from both evolutionary and nonevolutionary explanations. As discussed earlier, for instance, Floyd and Morman's (2002) finding that men are more affectionate with biological sons than stepsons can be explained by the theory of discriminative parental solicitude, but it could also be explained as a function of differential levels of emotional closeness or relationship duration. If alternative explanations are not controlled for, then the predicted result will support all possible explanations equally; it was therefore imperative for Floyd and Morman to demonstrate that the

hypothesized difference between biological and steprelationships held even when differences in closeness and relationship duration were held constant. Importantly, this does not mean that closeness and duration were *ruled out* as potential explanations—indeed, these accounted for significant variance in affectionate behavior—but only that the predicted difference was significant even after their influence was removed.

This observation gives rise to our final suggestion, which is to consider contextual influences carefully to avoid oversimplified hypotheses. On the basis of evolutionary principles, an unsophisticated researcher might predict that parents will invest no resources in their stepchildren because there is no reproductive benefit in doing so; finding this hypothesis to fail, then, the researcher may conclude that the evolutionary explanation is wrong. In fact, however, the hypothesis was untenable in the first place, because even if reproductive success is one influence on parental behavior, it is not the only influence. Proximal goals and imperatives are also operative, so parents may not invest in their stepchildren to further their reproductive success, but may do so out of love, ethical responsibility, and legal obligation.

Communication researchers are fortunate to have a broad array of theories from which to investigate interpersonal phenomena. Although theories of evolution and natural selection have not been widely used thus far by interpersonal communication scholars, we believe that they offer a logically complete system for explaining a wide range of human communicative behaviors. As such, they represent a parsimonious and provocative account of human communication to which interpersonal communication researchers can beneficially avail themselves.

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