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What is the Evolutionary Significance of Self-Esteem?

The Adaptive Functions of Self-Evaluative Psychological Mechanisms

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According to contemporary evolutionary psychology, the brain/mind comprises a host of domain-specific mechanisms and systems designed by natural selection to solve adaptive problems faced recurrently by our ancestors (e.g., Buss, 1995; Tooby & Cosmides, 1992). Over evolutionary time, the genetic recipes for mechanisms and systems that proved (on average) to be more adaptive than alternative designs -- where *adaptive* refers specifically to inclusive fitness or reproductive success -- were retained as species-typical traits. These mechanisms organize behavior by selectively attending to particular kinds of input information (environmental cues, internal states, etc.), processing this information via various forms of inferential rules, and generating behavioral output.

Because humans have evolved to be a highly social species, many of the most important adaptive problems we face involve negotiating our social world. Such adaptive problems include, for example, problems related to mating (selection, attraction, and retention of mates), problems related to competition for resources (negotiation of status hierarchies, formation and maintenance of alliances), problems related to acquiring assistance and support from others (selection and maintenance of friendships), and problems related to inter-group conflict. Our evolved psychological architecture therefore should include specialized systems designed by natural selection as solutions to these adaptive problems. The functional organization of these diverse systems must differ qualitatively from one another because the adaptive problems and their solutions vary greatly across domains.

Virtually all such systems include, as part of their adaptive design, input mechanisms designed to assess domain-relevant features of the environment (e.g., availability of valuable resources), domain-relevant features of other individuals (e.g., size and strength of competitors for these resources), and domain-relevant features of the self (e.g., one's own size and strength). Because the particular features of environments, other individuals, and the self that are relevant to a particular adaptive domain vary greatly -- e.g., mechanisms for evaluating potential mates must differ qualitatively from mechanisms for evaluating competitors for resources -- such evaluative mechanisms must themselves be differentiated and contain domain-specific circuitry.

We submit that what psychologists have traditionally referred to as *self-esteem* reflects the operation of one such class of mechanisms, namely those designed for evaluating the self in relation to others in the context of these diverse social-cognitive psychological systems. In this way our view has much in common with sociometer theory (e.g., Leary & Downs, 1995) in rejecting the conceptualization of self-esteem as a goal or motive in itself, in favor of a model in which self-esteem represents a gauge or index designed to provide input into systems designed to serve other (adaptive) goals or motives. Our model departs from Leary's, however, in suggesting that (1) there are multiple such "sociometers" associated with functionally distinct social-psychological systems, and (2) these sociometers have many functions which also vary across relationship domains. In this brief essay we illustrate our view with only a few specific examples; see Kirkpatrick and Ellis (2001) for a more complete discussion.

Rank and Status

Many if not most social species are characterized by (usually intrasexual) hierarchies of what has been variously termed rank, status, or dominance. High rank confers the benefit of

access to desirable resources such as food, nesting sites, and mates, but also introduces adaptive problems related to defending and maintaining one's rank; low rank necessitates alternative strategies for obtaining resources and appeasing dominant competitors. Social animals therefore must posses some kind of self-evaluative mechanism to keep track of their place in the hierarchy in order to choose adaptively among behavioral strategies whose differential adaptiveness is contingent on rank. Many theorists have suggested that human self-esteem is related to relative position in dominance hierarchies (e.g., Barkow, 1989; Gilbert, Price, & Allan, 1995).

In many species rank is determined primarily by physical size and strength and maintained by force. However, violent fights between individuals in such species tend to be rare, because both parties are able to quickly size up the relative strength of the potential opponent versus oneself; the weaker individual, facing almost certain defeat, will either steer clear of the encounter or explicitly concede the battle by displaying species-specific signals of submission. Thus self-perceived rank or dominance is crucial in guiding adaptive behavioral choices between attacking and conceding in potentially conflictual encounters, and for displaying rank-appropriate behaviors to others.

Human status hierarchies are undoubtedly more complex than those of other species. For example, human dominance, like that of chimpanzees (de Waal, 1982) is largely a function of strength of political alliances rather than individual size and strength. Moreover, Henrich and Gil-White (2001) suggest that humans have evolved a unique system of status competition that is functionally distinct from dominance. Whereas *dominance*, as in other species, is a means of attaining and maintaining status by force or threat of force, *prestige* is a form of status that is freely conferred by others in recognition of valuable skills or knowledge from which they hope to

benefit (e.g., via social learning). Perceiving oneself as high in prestige should activate behavioral strategies designed to attract and maintain a "clientele" who will offer resources in exchange for sharing skills and knowledge; perceiving oneself as low in prestige should activate systems designed to identify prestigious individuals and join their clienteles. According to Henrich and Gil-White, dominance and prestige hierarchies differ greatly in the behavioral strategies adopted by high- and low-status individuals within them. For example, low-status individuals in a prestige hierarchy seek proximity and eye contact with the high-status individual, whereas submissive individuals in dominance hierarchies avoid encounters and eye-contact with dominants.

We therefore believe that humans possess at least two self-evaluative mechanisms related to self-perceived dominance and self-perceived prestige, respectively. It is also possible that a third mechanism related to self-perceived status -- that is, the social rank resulting from whichever process was used to attain it -- may function separately (but receive input from) dominance- and prestige-assessment mechanisms. Much previous research on human "dominance" and self-esteem might be clarified by differentiating and separately measuring these functionally distinct processes.

Mating

As a consequence of countless genetic, developmental, and environmental factors, people vary greatly in terms of their value as potential mates. Over the course of human evolution, preferences for certain characteristics of mates have evolved because mating with some kinds of individuals was on average more adaptive -- again, in a strict inclusive-fitness sense -- than with others. Although such preferences are assumed to be species-universal (at least within sexes),

people do not always get what they desire. Assortative mating is a dynamic process that depends not only on people's ideal preferences, but also the preferences of potential partners. If individuals adopted a mate-seeking strategy that followed the rule, "mate with the highest-value partner with which you are able," they would eventually find themselves mated with an equal-valued partner after a potentially long process of trial and error (Ellis & Kelley, 1999).

However, effort invested into seeking and attracting mates is costly in terms of time, energy, and resources. A more adaptive strategy, then, would be to use knowledge of one's own *mate value* (MV) to guide and focus the search for a mate. Such a system would prevent low-MV individuals from wasting hopeless effort in trying to attract potential mates who are certain to reject them, and also prevent high-MV individuals from squandering the opportunity to obtain high-quality mates by choosing poorly. For these and other reasons, numerous theorists have suggested that self-esteem tracks self-evaluations of mate value (e.g., Dawkins, 1982; Kenrick, Groth, Trost, & Sadalla, 1993; Wright, 1994) and functions to calibrate aspiration levels when choosing mates (Kirkpatrick & Ellis, 2001).

A mechanism for assessing one's own MV confers other adaptive benefits as well. Even if a low-MV individual were able to attract an unusually high-MV mate, it would subsequently be costly to retain that mate. In a mismatched mated pair, the higher-value mate will be continually tempted by attractive alternatives; having little to gain by staying in the relationship and much potentially to gain by abandoning it, such individuals would be expected to invest less heavily in the relationship. The low-value mate, in contrast, will be saddled with ongoing expenditures of time and resources to retain the mate. Similar arguments apply to relative investments in offspring. Indeed, male zebra finches manipulated experimentally to enhance

their mate value (Burley, 1986) and Pygmy men of high rank (Hewlett, 1991) have been shown to spend disproportionately less time and effort caring for their offspring, with mates picking up the slack.

Coalitions and Alliances

In humans, as in many other primates, social structure involves not only competition between individuals, but between groups of individuals. In chimpanzees, for example, troops compete with other neighboring troops, and within-troop alliances compete with other within-troop alliances, for territory and other resources (de Waal, 1982). Inclusion in social groups at various levels of organization is therefore crucial, and humans should possess psychological mechanisms designed to monitor the current state of one's coalitions and alliances and one's inclusion within them.

At the macro level, humans organize themselves into groups ranging from bands (a few dozen individuals), to tribes (hundreds), chiefdoms (thousands) and states (Diamond, 1997). Whatever the organization of a given society, local groups compete with other local groups, sometimes violently. Humans should therefore possess psychological mechanisms designed to index the degree to which one is integrated within such a community, and (perhaps separately) the relative value and strength of this group. Such *social self-esteem* (or *collective self-esteem*; Luhtanen & Crocker, 1992). plays a central role in social identify theory (Tajfel, 1982; Tajfel & Turner, 1986).

At a more micro level, people form smaller alliances of various sizes that compete with one another within tribes and nations. Friendship groups are valuable social units in which resources are shared to mutual benefit of included individuals, and friendships provide allies in

conflicts with individuals in other groups. A psychological mechanism designed to monitor one's inclusion in such relationships is reflected in the previous theories of self-esteem that focus on perceptions of social acceptance or belongingness (e.g., Baumeister & Leary, 1995; Leary & Downs, 1995).

Summary and Conclusions

We maintain that what psychologists refer to as "self-esteem" reflects the operation of numerous evolved psychological mechanisms designed by natural selection to monitor specific aspects of the self in relation to others. These self-evaluative mechanisms perform a wide variety of adaptive functions in the context of psychological systems designed to guide behavior adaptively with respect to mate selection, status competition, coalition formation, and other social domains.

This view has a number of important implications for answering other fundamental questions about self-esteem examined in this book. Regarding the function of self-esteem, for example, our view converges with that of Leary and colleagues (e.g., Leary & Downs, 1995) in rejecting the notion that maintaining high self-esteem is a fundamental human motive or goal; rather, self-esteem functions in the service of psychological systems that are organized around other motives or goals. However, it is certainly possible for the positive affect associated with high self-perceived "self-esteem" -- i.e., high mate value, prestige, dominance, or social inclusion -- to function as a psychological reward and thus lead people to behave in ways designed to produce those feelings, in much the same way as drugs or alcohol (Leary & Baumeister, 2000).

Regarding the structure of self-esteem, our view diverges from other extant models of self-esteem "domain-specificity" by differentiating domains in functional rather than merely

descriptive terms. Moreover, it raises important questions about the nature of "global" self-esteem vis-a-vis domain-specific mechanisms. There is no such thing as a generically "good person" because, for example, the (adaptive) criteria defining a good mate differ from those defining a dominant competitor; consequently, it similarly is not clear what (adaptive) function would be served by judgments about one's own generic "goodness." Because some specific traits are valued by others across multiple domains -- e.g., physical strength renders a male both a valuable mate and a valuable coalition partner -- domain-specific self-evaluations are moderately correlated across domains. While it therefore is possible to construct internally consistent measures of global self-esteem, an important question for future research is whether global self-esteem is merely epiphenomenal or proves functionally important in its own right.

Research in our own labs is beginning to demonstrate that functionally distinct domains of self-esteem, as we have conceptualized them, are differentially related to other kinds of variables. For example, we have shown self-perceived superiority and perceived social inclusion to significantly predict aggression in opposite directions, with global self-esteem unrelated to aggression (Kirkpatrick, Waugh, Valencia, & Webster, 2001). We believe that the conceptualization and measurement of self-esteem in this way will similarly prove useful in clarifying many other empirical questions in the self-esteem literature. (See Kirkpatrick & Ellis, 2001, for a discussion of potential applications of our view to several well-known topics in the self-esteem literature).

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