The Selfish Goal Meets the Selfish Gene

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The connection between selfish genes and selfish goals is not merely metaphorical. Many goals that shape contemporary cognition and behavior are psychological products of evolutionarily fundamental motivational systems, and thus are phenotypic manifestations of genes. An evolutionary perspective can add depth and nuance to our understanding of "selfish goals" and their implications for human cognition and behavior.

[Commentary on Huang & Bargh]

Huang and Bargh draw an analogy between selfish genes and selfish goals. Just as genes "selfishly" build organisms to promote their own replication (and not necessarily the interests of the organism within whom these genes reside), goals "selfishly" shape cognition and behavior to promote their own attainment (even though this may retard progress toward other goals that individuals might hold dear). The analogy is both clever and useful. It underscores important insights such as the reconfiguration principle (the idea that an activated goal constrains individual's information processing in predictably goal-centric ways). But the connection between selfish genes and selfish goals is not merely metaphorical. An evolutionary perspective on human motivation implies deep connections between the selfish replication of genes and the selfish impact of goals on human psychology. Key principles of goal-directed cognition can be understood more completely, and their implications predicted more thoroughly, when located within an evolutionary perspective.

The human mind has the capacity to generate a nearly unlimited number of goals. Many of these goals have no obvious implications for, or connection to, genetic reproduction (e.g., the goal of reading, and indeed writing, this commentary). But a great many other goals are linked to specific motivational systems that evolved because, in ancestral populations, they promoted affective, cognitive, and behavioral outcomes that facilitated replication of the genes that built these systems. These fundamental motivational systems—which includes motives governing food intake, self-protection, disease-avoidance, social affiliation, mate seeking, mate retention, and child-rearing—reflect a relatively small set of specific fitness-relevant challenges recurrent across our evolutionary history (Aunger & Curtis, 2013; Bernard, Mills, Swenson, & Walsh, 2005; Kenrick, Griskevicius, Neuberg, & Schaller, 2010).

These fitness-relevant challenges are qualitatively distinct and require distinct kinds of behavioral responses in order to be successfully met. (As many of us are painfully aware, behavioral strategies that facilitate the initial attraction of a mate may be useless when it comes to maintaining a long-term relationship with that mate.) Indeed, behaviors that facilitate progress toward meeting some fitness-relevant challenges may actually retard progress toward others. The context-contingent activation of goal states plays a vital role in promoting adaptive behavior, and it does so by constraining the perceptual, cognitive, and decision-making processes that govern behavioral responses. It does this not just by facilitating specific goal-consistent perceptual attunements and cognitive biases, but also by inhibiting other attunements and biases that might otherwise energize behavioral progress toward other (less immediately pertinent) goals instead. The reconfiguration principle is rooted in the soil of these evolved motivational systems.

The evolutionary perspective is useful not merely because it provides an ultimate rationale for goal-directed constraints on cognition; it is useful because it provides a deductive framework within which hypotheses can be generated (and empirical discoveries made) about exactly how specific goal states constrain specific aspects of cognition. There is an enormous body of empirical literature that documents numerous ways in which the activation of evolutionary fundamental goal states adaptively constrains a wide range of cognitive phenomena, especially in the realm of social cognition (Neuberg, Becker, & Kenrick, in press; Neuberg & Schaller, in press).

To illustrate, consider the results of several research projects that have proceeded from observations about the specific ways in which specific categories of people have, in ancestral ecologies, posed threats to individuals' fitness. For instance, male members of tribal outgroups historically posed a predatory threat to physical safety. In most contemporary human ecologies, this threat is small, yet the self-protection motivational system that responds to predatory threats remains attuned to perceptual cues connoting outgroup status, with consequences for social cognition. For example, when a self-protection goal becomes active (even if by incidental events irrelevant to intergroup interactions, such as watching a frightening movie or being in a darkened room), non-Black perceivers are especially likely to have danger-connoting stereotypes of African Americans implicitly activated into working memory (Schaller, Park, & Mueller, 2003), to misperceive anger in the objectively neutral facial expressions of Black men (Maner et al., 2005), and to identify racially ambiguous angry male faces as Black (Miller, Maner, & Becker, 2010).

These perceptual and cognitive biases are functionally distinct from the perceptual and cognitive biases that emerge when a person becomes concerned with disease. For example, when a disease-avoidant goal is active, individuals are more visually attentive to disfigured faces (Ackerman et al., 2009). They also become more likely to implicitly associate disease-connoting semantic concepts with categories of people who appear superficially to deviate from a subjectively "normal" appearance—including people who are old, physically disabled, or obese (Schaller & Neuberg, 2012). There are additional cognitive consequences of a disease-avoidant goal state, which follow from the fact that, historically, many cultural norms and traditions served as buffers against disease transmission (Fabrega, 1997). Consequently, when a disease-avoidance goal is active, individuals are more attracted to conformists, judge norm violations to

be more morally wrong, and endorse more conservative (i.e., more tradition-preserving) socio-political attitudes (Helzer & Pizarro, 2011; Murray & Schaller, 2012).

Those last results highlight an important point: Active goals (such as disease-avoidance) can constrain aspects of cognition that are transparently pertinent to the goal (e.g., attitudinal aversion to people who appear unhealthy), but they can also constrain aspects of cognition that, at first glance, may not seem so pertinent (e.g., conformist attitudes)—except when located within an evolutionary framework.

It's true that many goals are responsive just to the fleeting incentives of the here and now, and may have only minimal connection to evolutionary fundamental motives of the sorts we identified above. But it's also true that many goals *are* products of these evolved, fundamental motivational systems. These goals aren't merely analogous to selfish genes. They are, instead, phenotypic manifestations of motivational systems encoded within and built by selfish genes. By carefully considering the implications of the causal connection between selfish genes and selfish goals, we can more expertly predict the consequences that these goals can have on human cognition and behavior.

REFERENCES

Ackerman, J. M., Becker, D. V., Mortensen, C. R., Sasaki, T., Neuberg, S. L., & Kenrick, D. T. (2009). A pox on the mind: Disjunction of attention and memory in the processing of physical disfigurement. *Journal of Experimental Social Psychology, 45*, 478-485.

Aunger, R., & Curtis, V. (in press). The anatomy of motivation: An evolutionary-ecological approach. *Biological Theory.*

Bernard, L. C., Mills, M., Swenson, L., & Walsh, R. P. (2005). An evolutionary theory of human motivation. *Genetic, Social, and General Psychology Monographs, 131*, 129-184.

Fabrega, H. (1997). Earliest phases in the evolution of sickness and healing. *Medical Anthropology Quarterly, 11*, 26-55.

Helzer, E. G., & Pizarro, D. A. (2011). Dirty liberals!: Reminders of physical cleanliness influence moral and political attitudes. *Psychological Science, 22*, 517-522.

Kenrick, D. T., Griskevicius, V., Neuberg, S. L., & Schaller, M. (2010). Renovating the pyramid of needs: Contemporary extensions built upon ancient foundations. *Perspectives on Psychological Science, 5,* 291-314.

Maner, J. K., Kenrick, D. T., Becker, D. V., Robertson, T. E., Hofer, F., Neuberg, S. L., Delton, A. W., Butner, J., & Schaller, M. (2005). Functional projection: How fundamental social motives can bias interpersonal perception. *Journal of Personality and Social Psychology, 88*, 63-78.

Miller, S. L., Maner, J. K., & Becker, D. V. (2010). Self-protective biases in group categorization: Threat cues shape the psychological boundary between "us" and "them". *Journal of Personality and Social Psychology, 99*, 62-77.

Murray, D. R., & Schaller, M. (2012). Threat(s) and conformity deconstructed: Perceived threat of infectious disease and its implications for conformist attitudes and behavior. *European Journal of Social Psychology, 42*, 180-188.

Neuberg, S. L., Becker, D. V., & Kenrick, D. T. (in press). Evolutionary social cognition. To appear in D. Carlston (Ed.), *Oxford handbook of social cognition.* Oxford University Press.

Neuberg, S. L., & Schaller, M. (in press). Evolutionary social cognition. To appear in E. Borgida & J. A. Bargh (Eds.), *APA handbook of personality and social psychology (*Vol. 1). Washington, D.C.: American Psychological Association.

Schaller, M., & Neuberg, S. L. (2012). Danger, disease, and the nature of prejudice(s). In J. Olson & M. P. Zanna (Eds.), *Advances in Experimental Social Psychology* (Vol. 46, pp. 1 - 55). Burlington, VT: Academic Press.

Schaller, M., Park, J. H., & Mueller, A. (2003). Fear of the dark: Interactive effects of beliefs about danger and ambient darkness on ethnic stereotypes. *Personality and Social Psychology Bulletin, 29*, 637-649.