

Original Article

Adaptive significance of low levels of self-deception and cooperation in depression

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Abstract

Consciousness and self-awareness, juxtaposed by the ability to self-deceive, are legacies of our evolutionary heritage. As a purposive outgrowth of modularity, self-deception may serve to isolate threatening thoughts from consciousness and facilitate cooperation. The primary goal of the present investigation was to determine if individuals with depression exhibit both low levels of self-deception and cooperation. Relationships between the tendency to self-deceive and the conscious attributions typical of depression or promoting cooperation were also examined. Eighty undergraduate participants completed measures of self-deception, impression management, depression, and attributional styles. Cooperation was assessed by responses to social dilemmas based on the prisoner's dilemma game. Results indicated that, as expected, high self-deceivers cooperated more and exhibited lower levels of depression than low self-deceivers. Self-deception scores were significantly associated with several attributional styles but independently predicted depressive symptomatology. That individuals with depression displayed both reduced levels of self-deception and cooperation is discussed in light of several models of the evolutionary significance of depression, especially E. H. Hagen's bargaining model of depression [The functions of postpartum depression. *Evolution and Human Behavior*, 20, 325–359, 1999; Depression as bargaining: The case postpartum. *Evolution and Human Behavior*, 23, 323–336, 2002; The bargaining model of depression. In P. Hammerstein (Ed.), *Genetic and cultural evolution of cooperation* (pp. 95–123). Cambridge, MA: MIT Press, 2003].

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1. Introduction

The conscious and intentional processing of information, associated with the expansion and retooling of the neocortex, is a hallmark of human evolution. Rationalism and awareness of one's own and another's thoughts provide numerous fitness benefits. The enhanced communication skills afforded by language, a concomitant of consciousness, coupled with deliberate remembering, planning, and "theory of mind," accommodated the high level of sociality and technology so central to our species' success (e.g., Baron-Cohen, 1995; Dunbar, 1996, 1998, Pinker, 1997). Consciousness, however, is not without costs, and there are limits to its benefits. In particular, the greater our intelligence and insight, the more vivid our awareness of our own flaws and of the unpleasant, injurious aspects of our world.

Presumably, both conscious processes and those relegating information inaccessible to consciousness, such as self-deception and repression, have been subject to the forces of natural selection (Alexander, 1974, 1987; Badcock, 1995; Krebs, Denton, & Higgins, 1988; Lockard, 1978; Nesse & Lloyd, 1992; Trivers, 1985). The result is a human psychology distinguished by the unique coexistence of heightened self-awareness and an apparent proficiency for self-deception. The presence of processes akin to self-deception is evident; however, *how* and *why* they occur remain the subjects of debate and skepticism. Gur and Sackheim (1979) described self-deception as a process whereby two contradictory beliefs are held at different levels of consciousness, with the act deciding which belief is held in consciousness being a motivated act. Mele (1997) rejected the conjecture that a person can hold two opposing beliefs at the same time and proposed the cognitive biases adequately explain self-deception. Hence, self-deception is often broadly defined in the social cognitive literature as the

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avoidance of unpleasant information or the unintentional, unconscious tendency to view oneself, one's friends, and relatives or one's situation in an unrealistically positive way (Baumeister & Cairns, 1992; Fiske & Taylor, 1991; Robinson & Ryff, 1999).

Trivers (1976, 1985) theorized that the ability to self-deceive originally evolved during the evolutionary arms race between the ability to deceive and the necessity to detect deception. By keeping the selfish motives of a deceiver from consciousness, self-deception facilitated successful deception by eliminating the guilty signs of self-knowledge, such as shifty eyes and sweaty palms. He defined self-deception as the "active misrepresentation of reality to the conscious mind" or "biased information flow within an individual" (Trivers, 2000, p. 114). More recently, Kurzban and Aktipis (2007) suggest that what is classically labeled "self-deception" is essentially a by-product of modularity, where contradictory representations of reality and the self coexist as a result of information encapsulation. They propose that the Social Cognitive Interface (SCI), a system with the function of storing representations relevant to social interactions, has evolved to preferentially access self-representations with a positive spin, providing an edge in social interactions. This model describes a process whereby the most advantageous of a set of "multiple selves" is represented in consciousness, successfully avoiding the conundrum of how one can deceive oneself. From this point of view, "self-selection" or "selves-deception" (Trivers, 2000) may more aptly describe the process classically referred to as "self-deception." This general modular view of self-deception, as an outcome of the preferential accessing of overly positive representations or biased perceptions of reality in favor of more realistic depictions, is advanced here. However, rather than being a mere by-product of modularity, self-deception is more likely a purposive outgrowth of modularity and the evolution of mechanisms regulating access to information, such as those in the SCI. Hence, self-deception, as employed herein, is construed as the preferential accessing of overly positive or idealized representations or perceptions of the self, others, and the world by evolved regulatory mechanisms.

Humans are typically unrealistic optimists (Weinstein, 1980), viewing life through rose-colored glasses, seeing the glass as half-full rather than half-empty, ostensibly floating through life in a self-deceptive bubble. Keeping threatening thoughts from consciousness while facilitating continued performance, motivation, and optimism in adverse conditions appears to be one of the current functions of self-deception (Taylor & Brown, 1988). Although self-deception may have originally arisen in the arms race between the ability to deceive and detect deception (Trivers, 1985), it may have undergone further selection for additional functions. Abramson and Martin (1981) and Sackeim (1983) suggested that individuals with depression, who ruminate on negative cognitions to the detriment of daily functioning, lack the normal capacity to self-deceive.

Findings of a significant negative relationship between scores on the Self-Deception Questionnaire (SDQ; Sackeim & Gur, 1978) and the Beck Depression Inventory (BDI; Beck, 1967) support this proposal (Roth & Ingram, 1985; Sackeim & Gur, 1979).

The reported lack of self-deception in depression is compatible with a number of evolutionary theories of depression. Adaptationist models of depression have existed for at least six decades. In Bowlby's (1969) model of attachment, depression is viewed as a reaction to loss of a significant (fitness-relevant) relationship or source of resources, such as the mother. Depression has also been described as an adaptive means to conserve resources or energy when subjected to uncontrollable aversive stimuli, so they can be later redirected into activities with better fitness payoffs (Klinger, 1975; Nesse, 2000). Welling (2003) suggests that reduced activity levels associated with depression may provide a time-out during which a person's cognitive maps or schemas and coping strategies may be updated. Price (1967), drawing on his familiarity with dominance hierarchies in primates, focused on the utility of low mood in responses to defeat or threats of defeat. The social competition model of depression (Price, 1972; Price, Sloman, Gardner, Gilbert, & Rohde, 1994) describes depression as a mechanism employed by the losers of social competitions. Depressive reactions are likened to the adoption of subordinate behaviors and the acceptance of lower rank in order to reduce further attacks from the winner. Gilbert (2006) similarly suggests that depression serves to reduce further challenges to dominant individuals and indicates that an individual in a subordinate role is not a threat. Allen and Badcock's (2003) social risk hypothesis proposes that depression serves to reduce the risk of social exclusion. Social exclusion or ostracism is a threat to fitness because it reduces an individual's access to the protection and resources afforded by group living, as well as access to mates (Spoor & Williams, 2007). Depressed mood may reduce the risks of social exclusion in individuals who perceive they have low social status or who have already experienced social rejection by reducing behaviors, such as aggression, that could put their social relationships at further risk (Allen & Badcock, 2003). Hagen (2002, 2003) also focuses on the role of depression in the dynamics of group living. He views depression as means of bargaining, in which the individual with depression withdraws his or her contribution to the group as a means of both advertising their neediness and leveraging increased resources or assistance from group members. Hagen (1999) sees postpartum depression as a special case whereby women's depressive symptomology and apparent inability to cope signal their need for greater investment from their mate or kin. Watson and Andrews (2002) and Andrews and Thomson (2009) also consider the persuasive, leveraging aspects of depression and make an additional contribution. They propose that ruminations, a cognitive hallmark of depression, may indicate an increased conscious focus on

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