

THE EVOLUTIONARY FUNCTIONS OF REPRESSION AND THE EGO DEFENSES

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Recent advances in basic evolutionary biology have transformed ethology, but have had little impact on psychoanalysis. As evolutionary approaches to human behavior begin to focus on the specific behavior regulation mechanisms that have been shaped by natural selection, psychodynamic mechanisms become natural objects of inquiry. The capacity for repression is at the core of psychodynamics, and must be explained first. It is a first-class evolutionary mystery because it distorts reality, it contributes to **maladaptation**, and because existing explanations have been outmoded by advances in evolutionary theory.

The evolutionary biologists Trivers and Alexander have each proposed that repression conceals motives from the self, and thus better conceals them from others so that selfish motives can be covertly pursued. This startling idea becomes plausible when viewed in the light of modern studies of animal relationships and communication. Several other functions of repression also enhance fitness by deceiving the self to better deceive others, but repression may function more generally by distorting reality whenever accurate perception would be maladaptive. Although repression sometimes assists short-term strategies of manipulation (cheating), it more often assists long-term strategies that depend on maintenance of secure relationships.

This position is largely consistent with existing psychoanalytic theory. The specific ego defenses can be understood as specialized capacities for deceiving others. The

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ubiquity of intrapsychic conflict between id wishes and superego/ego inhibitions may have been shaped by the constant choices that must be made between selfish strategies that offer a short-term benefit with a long-term social cost, versus altruistic strategies that exact a short-term cost but offer the possibility of a long-term reciprocity benefit. Other psychodynamic characteristics of the mind, Oedipal wishes, castration anxiety, transference, and so forth, also require evolutionary explanations. In the process of the search for them, psychoanalysis may find the foundation in basic biology that it has long sought, and evolutionary biology may find that some of the evolved mechanisms that regulate human behavior have already been carefully studied by psychoanalysis.

WHY DO HUMANS HAVE THE CAPACITY FOR REPRESSION?

Does repression offer a selective advantage by serving some adaptive function that resulted in natural selection shaping it to its present form? Or is better viewed as an epiphenomenon of some other functional unit of the brain? It is now possible to address these questions in a fundamentally new way. We already have, thanks to psychoanalytic investigations, a deep understanding of the way in which repression modulates the expression of impulses and the incorporation of stimuli. Clinicians have started from the observed fact of repression and have carefully studied its role in the mental economy. In this sense, the functions of repression are already well understood. The new question that has not been addressed is why repression is necessary at all.

Why did natural selection shape such a complex and apparently unwieldy apparatus, when much simpler mechanisms might have served the same functions equally well? Does the capacity for repression offer special advantages over a simpler system? The evolutionary function of the human capacity for repression is not at all obvious. It is of great importance, however, because the accumulated knowledge of psychodynamics remains largely outside of the structure of the rest of science. If recent advances in evolutionary theory can provide a foundation for psychodynamics in basic biology, then there can be hope that the integration will lead to rapid progress.

The fact of repression is at the very core of psychodynamics. It

must be the starting point for a consideration of the evolutionary functions of psychodynamic capacities. It remains an anomalous and awkward concept that has kept psychoanalysis apart from the rest of science. Attempts to understand it from an evolutionary perspective might promote the links that psychoanalysts have long sought with biology. It might convince many people who remain skeptical about the whole idea of repression, and who are thus unable to benefit from psychodynamic theories of human behavior.

From an evolutionist's point of view, the capacity for repression holds special interest. First, the focus of evolutionary studies of human behavior is changing from the study of gross correlations between behavior patterns and reproductive success, to the study of the behavior regulation mechanisms that have been shaped by natural selection. Psychodynamic mechanisms are likely to have been shaped by natural selection, so it is of great interest to try to understand how they contribute to Darwinian fitness. Even more important, repression appears to be maladaptive. Repression distorts the experience of reality. How can such distortion be helpful? Furthermore, repression and the defenses that maintain it are responsible for all manner of human suffering and ineffectiveness. An evolutionist might well expect that a person without repression would have a substantial selective advantage, and that the trait of repression should be quickly eliminated by natural selection. It turns out, of course, that inability to repress is a serious liability. The design of the mind requires repression, even for dealing with everyday matters. The expectations of naive evolutionists are at variance with the observations of psychoanalysts. This discrepancy gives special interest to the problem of the evolution of repression.

A PROPOSAL ABOUT REPRESSION

Evolutionary biologists have developed a relatively specific proposal about the function of repression, but they started, not from clinical knowledge about repression, but from studies of animal relationships and communication. Whenever animals assist each other by exchanges of resources or favors, an individual who can gain a tiny advantage with every exchange will have a reproductive advantage over the individual who is exploited. Wherever a communication system has evolved, there will also be opportunities to increase fitness by the use of deception. Indeed, the more carefully

biologists look, the more extensive and exquisite are the systems of deception they find. A dramatic example is the ability of predatory fireflies to mimic the light flash pattern of a female of another species (Lloyd, 1986). The alluring flashes draw males who are looking for mates. A male who cannot detect the deception is devoured; one with better discrimination skills escapes to reproduce with a female of his own species. This causes rapid selection for ability to detect such deceptions, which, in turn, causes strong selection for the ability of the predatory fireflies to deceive still better. The escalating spiral of selection for deceptive abilities and abilities to detect deception is very much like an arms race—there is no winning, only the evolution of more and more complex and costly but essential systems.

This has suggested to biologists that humans should have extensive capacities for deceiving each other. The crucial next step has been taken by Alexander (1975, 1979, 1987) and Trivers (1976, 1985). Each has argued that being aware of one's own motives might make it difficult to hide them adequately and that the capacity for repression may, therefore, offer a selective advantage by increasing the ability to deceive others about the pursuit of covert selfish motives. Thus, people who can self-deceptively believe themselves to be altruistic while they are, in fact, pursuing selfish motives, will have higher Darwinian fitness, on the average, than people who are consciously aware of their real motives. In isolation, this idea seems bizarre, and unworthy of consideration. In the context of modern evolutionary biology, however, it is a short and natural extension of current ideas. This proposal cannot be carefully considered without first addressing other explanations of repression, and the selective forces that have shaped the human mind. I present the proposal here in sketchy outline, so the reader will have some notion of where the argument is headed.

Biologists have concluded that self-deception may be a useful trait and have stumbled on the fact of repression, while psychologists have been studying the mechanisms of repression for several generations. Clearly they should have much to say to each other. A dialogue has been opened by **Badcock** (1986) in *The Problem of Altruism*, and in articles by Lockard and by **Slavin**, but this major problem has otherwise attracted little attention. This article addresses the problem of the evolution of repression and also considers the origins of the defenses, and intrapsychic conflict. The goal is to convince the reader that the facts discovered by psychoanalysis need evolutionary explanations of how they have been shaped

by natural selection. The strategy is to propose evolutionary functions for a variety of psychodynamic phenomena, in hopes that some will be convincing, and that the others will at least illustrate worthy problems.

SEVERAL INADEQUATE EXPLANATIONS

Why is effective repression so essential to the normal operation of the mind? Four intuitively appealing possibilities that are commonly proposed turn out to be insufficient in the light of modern evolutionary theory: (1) repression limits the burden on the central processing unit of the mind; (2) repression regulates the intensity of sensations allowed into the mind; (3) repression results from the operation of brain mechanisms and these mechanisms provide a sufficient explanation; and (4) repression is essential for the smooth functioning of society.

First, there is the possibility that repression functions to focus the mind's energy on the task at hand so the central processor is not overloaded. The capacity of any information processing device is limited, so efficiency is served by a mechanism that prioritizes tasks and presents them one at a time to the central processor. A person who simultaneously tries to cook dinner, write plays, and plan how to ask for a raise is likely to do poorly at the table, with the critics, and in the payroll line. Similarly, a person who has the capacity to dismiss previously considered alternative plans that will not be used has an advantage. When one expressway is taken instead of another, it is wasteful to think about the problems that might have come up on the alternate route. Repression may well serve these functions to some extent, but active firm repression is not only not needed to deal with these situations, it may result in disadvantages. Suppression, or other mechanisms that regulate attention, would be sufficient. It must be acknowledged that repression does function to keep urgent drives out of awareness. Because it is unnecessary to have full-fledged repression for this purpose alone, however, it is worthwhile to consider the possibility that its drive regulation function is a derivative of some other original function.

A related possibility is that repression regulates the intensity of stimulation so as to avoid overwhelming the mechanisms of the mind, in the same way that the eye's iris regulates the stimulation admitted to the retina (Shevrin, 1962). This is an observed function that repression does serve, but again, the question is why other

simpler more flexible mechanisms wouldn't suffice. Also, it is less external stimuli than internal drives that are regulated. It would seem simple enough for natural selection to modulate the force of such drives, instead of creating a whole separate machinery of repression to control them in a secondary way. In summary, repression does regulate the experience and expression of drives, but this function does not offer a complete explanation of the distinct nature of repression. The regulation of drives may be a derivative that has emerged after the capacity for repression was created for some other purpose.

It is clear that the capacity for repression, like all other mental capacities, results from operation of the brain. If we had a complete understanding of the wiring of all the brain's neurons, would this explain repression? It would be one part of a proximate explanation, but the evolutionary explanation of repression is a completely separate matter. Biological traits require both a proximate explanation of anatomy and physiology and also an evolutionary explanation (sometimes called an ultimate explanation) of the selective forces that have shaped them to their present form. Recognition of the need for two separate kinds of explanations for biological phenomena is a broad conceptual advance, relatively unappreciated in psychology, the history of which is detailed in Mayr's (1982) *Growth of Biological Thought*. Tinbergen (1963) and others have used this distinction for years, but the case is especially clearly summarized by Mayr:

... no biological problem is solved until both the proximate and the evolutionary causation has been elucidated. Furthermore, the study of evolutionary causes is as legitimate a part of biology as is the study of the usually physico-chemical proximate causes. (p. 73)

Mayr describes biology as two related but distinct areas of inquiry:

... biology can be divided into the study of proximate causes, the subject of physiological sciences (broadly conceived), and into the study of ultimate (evolutionary) causes, the subject matter of natural history. . . . The two biologies that are concerned with the two kinds of causations are remarkably self-contained. Proximate causes relate to the function of an organism and its parts as well as its development, from functional morphology down to biochemistry. Evolutionary, historical, or ultimate causes, on the other hand, attempt to explain why an organism is the way it is. Organisms, in contrast to inanimate objects, have two different sets of causes because organisms have a genetic program. . . . (pp. 67, 68)

For example, a complete explanation of a firefly's glow requires both a proximate explanation of how the glow organ works (its anatomy, physiology, and regulatory mechanisms), and also an evolutionary explanation of why the glow apparatus was shaped by natural selection (it increases fitness by serving the function of locating mates). Psychiatry and psychology have generally only sought proximate causes (Nesse, 1984, 1987), but this is about to change dramatically as more and more scientists recognize the major advances that an evolutionary perspective has brought to the field of animal behavior. A proximate explanation of repression will require understanding of mental function at many levels of organization—brain anatomy, neural structure and function, and cognition and the mechanisms of psychodynamics. But even if the wiring and anatomic details of every neuron were known, and psychological mechanisms were described in detail, a separate evolutionary explanation for the existence of repression would still be necessary.

The second appealing but inadequate explanation for repression—that it is necessary for the existence of society—is undermined by another recent advance in evolutionary theory. Most people still think, as biologists once did, that natural selection operates for the benefit of a species. This turns out to be incorrect. It now is clear that natural selection is weak at the level of the group as compared with the level of the individual, and the benefits that result in selection of a trait almost always go to individuals and their genes, not to groups or species. This issue was brought to a head by the problem of how to explain altruistic behaviors. In biology, altruism is a technical term that refers to behavior that helps another individual but that results in a net fitness cost to the individual who performs it. The existence of altruistic behaviors has been awkward for evolutionary theory from the beginning. How, for instance, could the tendency of the honeybee to sting intruders be explained? The individual bee dies in the process, so bees with this trait are at a selective disadvantage and the trait should therefore be eliminated. What about the predator warning call given by birds and ground squirrels? How can these be maintained, since the caller with the genes for this trait is at increased risk of predation? Such altruistic behaviors do benefit the group and the species, and these benefits were widely accepted as a sufficient explanation during the first part of this century. As knowledge about genes and their role in evolution grew, however, such

“group-selection” explanations were recognized to be unsatisfactory, but they persisted because no alternative was available.

The problem of altruism was solved by William Hamilton in 1964. He recognized that kin have some proportion of genes that are exactly identical, therefore, a gene that increases the survival or reproduction of enough kin can become more frequent in the gene pool even if it causes the death of the individual. This idea of “kin selection” is the most significant single advance in modern evolutionary behavioral biology. It can be quantitatively stated as follows: a gene that induces altruistic behavior will be selected for whenever the cost to the altruist is less than the benefit to kin times the proportion of genes in common ($C < B \cdot r$). This is often illustrated by W. B. S. Haldane’s apocryphal reply when he was asked whether he would give his life for his brother. “No,” he said, “Not for one brother. But I would for two brothers. Or eight cousins!” Hamilton’s insight provided the long-sought alternative for group selection and thus invalidated most existing evolutionary explanations for behavioral traits and simultaneously set a new and much more explicit criterion for evolutionary explanations of behavior. An evolutionary explanation must now demonstrate how the behavior increases the frequency in the gene pool of the genes that are responsible for it. This gene’s eye view of behavior was adopted most explicitly by Dawkins in *The Selfish Gene* (1976).

The demise of group-selection explanations means that the capacity for repression cannot be explained by its benefit to society in general. Any adaptive function proposed to explain repression must increase the reproductive success of the individual or its kin. But, how can repression possibly increase reproductive success? Repression often seems to decrease reproductive success, for instance, when it results in sexual inhibitions. On the other side, the absence of repression often seems beneficial. People who have been psychoanalyzed, for example, can become aware of primitive impulses without acting on them. If distortion of reality is disadvantageous and awareness of repressed material is advantageous, why hasn’t natural selection shaped a mind that operates this way in the first place? From an evolutionary perspective, the fact of repression is a first-class mystery. Like altruism, it is an anomaly, and, therefore, of special interest to biologists because the study of traits that seem incompatible with evolutionary theory has often led to important advances.

What about the whole enterprise of trying to understand capaci-

ties like repression from an evolutionary viewpoint? Is it somehow logically flawed or illegitimate? Some still confuse evolutionary explanations with teleological thinking, even though teleology has been largely eliminated from biology and bears only superficial resemblance to evolutionary explanations. Among biologists this is steadily less of a problem, but many others do not understand that teleological explanations attribute cause to future events (an intrinsically illogical idea) while evolutionary explanations of a trait are based on forces of selection in the past. The functions of a trait result in higher than average Darwinian fitness, but no goal directedness is implied. It is simply that those organisms who survive and reproduce the most effectively end up passing on more of their genes.

A different possible fundamental flaw, one that must be taken more seriously, is the possibility that certain capacities may not have any evolutionary function. It is certainly not correct to dismiss all searches for the evolutionary functions of human mental traits, but it remains conceivable that some traits, perhaps including repression, are merely epiphenomena of other functional units of the mental apparatus. It is possible that repression might serve several functions, and it might serve them poorly because of constraints imposed by the available precursors or the vagaries of selection. How is one to tell which biological characters have been shaped by natural selection and which have not, which are exquisitely adapted to their function and which are poor compromises? There are no agreed-upon standards of evidence, so such questions tend quickly to become muddled.

Often, the most convincing evidence that a trait has been directly shaped by natural selection (and serves a function and is therefore not an epiphenomenon) is found in a consideration of how its form fits its function. The same argument that supports the proposed specific hypothesis about function also may be used to support the general premise that the trait being considered has been shaped by natural selection. Consideration of these issues has already filled many books and no consensus in sight. It is clear to me that not all traits serve functions, a trait may serve more than one function, traits are rarely perfectly adapted to their function, multiple phylogenetic and random factors constrain adaptation, and stating a plausible function for a trait is vastly different from a scientific test of a specific hypotheses about the function of a trait. Nonetheless, it is perfectly legitimate to try to understand the evolutionary functions and origins of all biological traits, including

psychological ones, and this often is best accomplished by assuming that they serve some specific functions, and then seeing if this conjecture parsimoniously accounts for the evidence and makes new predictions that turn out to be correct.

In the specific case of the capacity for repression, there are several reasons to think that it is not an epiphenomenon or a result of drift or other happenstance. Repression is complex, it is consistently present in people, and it is intimately connected with behaviors crucial to reproductive success. Though not foolproof, these criteria make it more likely that repression was shaped by natural selection.

WHY ISN'T THE HUMAN MIND SIMPLER?

The human mind is inordinately complex and delicate, as compared with any number of designs that can be readily imagined. The quirks that make it complex and delicate (repression, intrapsychic conflict, etc.) cannot readily be explained as mere necessary parts of the apparatus. This further justifies serious consideration of the possibility that the psychodynamic apparatus evolved to serve specific, important, and perhaps peculiar functions. Imagined alternate possible designs for the human mind do not offer a strong argument, but they can undermine the easy assumption that no other kind of mind is possible than the one we have. Alternatives are possible, and the capacities for repression and defenses are thus especially worthy of our best attempts to provide an evolutionary explanation.

For example, the ego defenses seem obviously necessary to make repression possible. But why isn't simple repression sufficient? Why are there so many defenses, and why are they so elaborate? At every moment, a barrage of primitive impulses struggle for expression without our least awareness. Projection, reaction formation, sublimation, and the rest of the defenses are not in evidence, simple unadorned repression is sufficient. One would think that natural selection would have strengthened this capacity so that we could be spared the energy drain, distraction, and distortion of reality that are required by the use of other defenses. Yet, there is not just repression, but more than two dozen distinct defenses. Why is this? The simple explanation, that they are necessary for repression, is a proximate explanation and does not adequately explain their existence. *Slavin (1985)*, in the main published article that addresses the question, puts it well,

The inherent need to disguise and subjectively misrepresent reality which is implied in the operation of ego defense would seem to be, on the face of it, a dysfunctional and maladaptive process. (p. 413)

The capacity for repression in general, as distinct from the specific defense mechanism of repression, is also problematic, as already noted, because it distorts reality. People can function perfectly well with conscious awareness of many primitive impulses that they need not act on. Why wasn't the mind designed this way in the first place? At the very least, one might expect suppressed impulses to be available to consciousness with modest effort. In fact, however, much repression is impenetrable. We recognize what is repressed only by its dim reflections in dreams, slips of the tongue, and otherwise inexplicable parapraes and symptoms. The whole process takes large amounts of energy and distracts us from important concerns. It is implausible that repression exists merely to control impulses or to simplify mental life.

The constant presence of intrapsychic conflict at the core of the mind is also problematic. Warring forces clash constantly. The battles are two-sided: id impulses versus ego representations of external reality and superego norms. These conflicts waste substantial time and energy. Why not have a simpler system that sets the priority of a variety of drives according to current needs, opportunities, and risks? Why are there only two forces instead of many opposing forces advocating for a variety of behaviors that conflict in multifaceted ways? The enduring opposition of impulses and inhibitions at the center of the mental apparatus is an unseemly design. Is there some reason why there are just two main motivational systems that are so inherently in conflict? What exactly is conflict between? Id impulses and ego representations of superego inhibitions, yes, but what evolutionary functions could have shaped these agencies? For what do they advocate, and why?

The human mind is far more complex than it needs to be, the capacities for defenses and repression do not seem intrinsically necessary, and the two-sided conflicts at the center of psychological life seem wasteful. This does not imply that natural selection always creates the simplest possible structure, but the mind could have been shaped to a multitude of other forms that would have been simpler, more efficient, and less fragile. Why is the human mind so complex? Are the convoluted patterns of our minds merely remnants of phylogenetic paths, quirks of evolutionary history, and constraints on perfection? Or, is there some reason, some

special selection pressure, that accounts for the Byzantine complexity of the mind?

DETERMINATES OF HUMAN REPRODUCTIVE SUCCESS

Before addressing repression and the defenses, we must consider the factors that determine human reproductive success. Strength, speed, and ability to resist infections are all important to survival, and therefore to Darwinian fitness. But, Darwinian fitness is determined entirely by reproductive success of the self and kin; survival is important only as it contributes to this (Nesse, 1988). Thus, it is no surprise that psychic energy is fundamentally sexual in character, that sexual thoughts are pervasive in human mental life, and that sexual pleasure is intense. In the concept of libido, Freud remarkably anticipated a perspective that has come to dominate evolutionary thinking only in recent decades. Reproduction is crucial to fitness, but what specific factors determine human reproductive success? General robustness and physical skills are important, but far more important is the ability to conduct relationships. Alexander (1989) has argued this at length and the following section depends substantially on his work. People evolved in small groups and their social skills in these groups must have been major determinants of their reproductive success. Relationships increase fitness not only by exchanges of help with kin, but also by gaining the benefits of reciprocity with others, that is, by exchanging favors when that offers a net benefit to both parties. In such circumstances, especially if the exchange is delayed or in different currencies, both flagrant defection and subtle cheating are expected and inevitable. To succeed relative to someone else, which is the only kind of success that is preserved in gene frequencies, an individual must be able to gain a little more than the average other person. This leads to an unending arms race. The system that results should simultaneously allow the individual to reap the benefits of reciprocity exchanges, to protect himself or herself from gross and subtle forms of cheating, and to practice those forms of cheating and exploitation that local conditions make adaptive. Individuals should differ, not in being altruists or cheaters, but in strategies they use to manipulate others (Trivers, 1981). These abilities to negotiate relationships successfully and to form and use alliances effectively may be the most complex human skills. In the past 100,000 years, as physical forces of selection have become less

important, the ability to negotiate relationships successfully has become vastly more important. This selection pressure should be reflected in the distinctive characteristics of the human mind.

INTRAPSYCHIC CONFLICT

Intrapsychic conflict is such an obvious feature of the mental landscape that we take it for granted. It is easy to assume that no alternative is possible. We know that conflict is generally between the impulses of the id and the inhibitions of the ego representations of reality and superego. But what constituencies are represented on each side?

It is not simply different drives. When a hungry person is reading a good book, there is a conflict and the hunger may be repressed for a time, but there is no difficulty in becoming aware of it if one wants to. What about the conflicts that interest us, those that result in firm repression and defensive operations? What are they between? It is a question that Freud addressed repeatedly, but never answered satisfactorily (MacDonald, 1986; Sulloway, 1979). At one time I suspected that natural selection might have created two distinct channels of motivation, one to motivate behaviors that directly increase an individual's reproductive success, and another indirectly increases fitness by helping kin. Although at first attractive, the idea does not fit with clinical evidence. For instance, when a mother is conflicted about whether to feed herself first or her baby, it isn't obvious what the role of the superego is. The wish to feed the baby seems to emerge as much from the id as the superego.

A conjecture that better fits the evidence is based on the observation that people often must choose between two alternatives, one that offers immediate satisfaction (that directly increases personal reproductive success) and one that offers delayed satisfaction, usually via altruistic self-sacrifice in the short run with the expectation of a net gain via reciprocation in the long run. On the one side, id impulses push toward behaviors that lead to immediate and direct increases in fitness. On the other side, superego and ego use guilt and anxiety to decrease the likelihood of these impulsive behaviors and motivate, by self-esteem and other emotional satisfactions, behaviors that help someone else in the short run. Such conflicts are not limited to certain people or circumstances, we all face them all the time. When a beautiful woman suggests a second drink to a young man who is supposed to drive a friend to the

airport, the dilemma can be excruciating. Such situations are so common, and the payoffs that result from different choices are likely to be so different in amount and kind, that natural selection may have divided motivation into two streams, one to advocate for each strategy. The id motivates behaviors that result in an immediate benefit at some cost to reputation and relationships; the superego motivates behaviors that result in an immediate cost, but that provide delayed benefits via reciprocity relationships. The intensity and ubiquity of conflicts between the two forces are an indication of the importance of such decisions. A person who always takes the short-term strategy will have few friends and will be attacked by the group. A person who always gives way to the needs and expectations of others is likely to have fewer children than his or her friends/exploiters. The crucial fitness decisions humans must make are almost always between altruism and selfishness, just as moral philosophers have long recognized. The dilemma is present in every situation at every instant. Making these decisions correctly is so crucial to human reproductive success that they are the central focus of our moral codes and our thinking, both conscious and unconscious. Freud's distinction between id and superego parallels two inherently conflicting strategies for maximizing fitness. Continuous mental conflict may be essential because automatically giving the upper hand to either strategy leads to fitness disaster.

REPRESSION

An evolutionary explanation that accounts for repression must propose some benefit that comes from rigidly and completely excluding an idea from consciousness, while yet keeping it near the centers of motivation. Such a proposal has been mentioned several times by Trivers and by Alexander over the last 15 years, but it has gone almost unrecognized. They sometimes seem to say they are trying to understand the unconscious, but it is clear that they mean the Freudian unconscious and, more specifically, the capacity for keeping material unconscious, so I will focus on repression. They propose that repression offers an advantage because it allows people to deceive themselves about their own true motives, and thus better deceive others as they unconsciously pursue these covert selfish motives. Deception is a required strategy in all relationships, and is, they argue, best pursued without even knowing it, so that others are given no clues.

[Man] will not see in himself what he does not wish to see, or what he does not wish his neighbors and fellows to see; and he is reluctant to see in other organisms what he will not see in himself. All of biology, all of science, all of human endeavors have been guided to some large extent by this circumstance. (Alexander, 1975, p. 97)

If (as Dawkins argues) deceit is fundamental to animal communication, then there must be strong selection to spot deception and this ought, in turn, to select for a degree of self-deception, rendering some facts and motives unconscious so as not to betray- by the subtle signs of self-knowledge-the deception being practiced. Thus, the conventional view that natural selection favors nervous systems which produce ever more accurate images of the world must be a very naive view of mental evolution. (Trivers, 1976, p. vi)

... the separateness of our individual self-interests, and the conflicts among us that derive from this separateness, have created a social milieu in which, paradoxically, the only way we can actually maximize our own self-interest and deceive successfully is by continually denying-at least in certain social arenas-that we are doing such things. By conveying the impression that we do not intend to deceive, and that we are in fact altruistic and have the interests of others at heart, we actually advance our own (evolutionary) self-interests . . . we have evolved to deceive even ourselves about our true motives. (Alexander, 1979, p. 134)

... the very worst thing one could reveal to associates and potential interactants is that he is, first and foremost, a self-interested individual. One way of avoiding the impression that this might be so is to deny that hedonism or self-interest could possibly be a creed. Another is to believe sincerely that one is not self-interested. (Alexander, 1987, p. 120)

This radical proposal deserves several illustrations. A man who believes that he will do anything for his new love and who can sincerely promise her his undying devotion, will be far more likely to garner her sexual favors than a man who says the same things without believing them (Symons, 1979). A person who hates an exploiting superior, but experiences only admiration and feelings of inadequacy, will have a considerable advantage over a someone who is aware of rage and competitive feelings (Hartung, 1988). We tend to assume that the brain has been shaped for accurate perception of reality, but it is evident that, in some situations, distorted perceptions of reality may enhance fitness, and selection will tend to incorporate those tendencies to distortion (Trivers, 1981).

Trivers and Alexander both emphasize the benefits that come

from pursuing covert motives without awareness of these motives. There are, however, many distinct ways that repression could enhance fitness. I will describe a variety of plausible benefits of repression so that they can be used to analyze the proposal that repression was shaped because of the benefits it may offer in the course of deceptive manipulations.

In addition to concealing a covert motive that is being pursued, repression may hide a fall-back strategy that is held in reserve. For instance, a dissatisfied spouse may embark on a campaign to please the mate, carefully hiding by repression, the alternate strategy, simultaneously being considered and planned, of leaving for someone else. It need not be unsavory strategies that are repressed. Often it is useful to repress warm feelings. For instance, when a person threatens to leave a relationship, the threat lacks sincerity unless warm feelings are repressed. This explains the dramatic swings between intense love and bitter hatred experienced by couples who are in the process of trying either to change or leave the relationship.

A third way in which repression can increase fitness is by concealing a strategy that will never be pursued because it conflicts with fundamental values (and thus would have too great an emotional or fitness cost) or because it would just never be worthwhile. This function of repression is substantially the same as the impulse control function long recognized by psychoanalysis. Psychoanalysis emphasizes the need to maintain integrity of the ego, while an evolutionary view emphasizes that the disastrous social and fitness consequences of experiencing (and thus perhaps revealing) certain motives, strategies, or fantasies. For instance, perverse sexual wishes, not uncommonly uncovered during psychoanalysis, are not repressed so they can be pursued covertly, or at some later date. They just would not increase fitness under any circumstances, and are best kept unconscious.

This third possibility is different from the original Alexander/Trivers proposal in that the strategy is never pursued. All three functions are based on deception, but in the first two the hidden motive is held close to the centers of motivation so it can be pursued when it is advantageous, while in this third case, there is no need to keep the motive close to centers of motivation because there is no benefit in pursuing the motive. The deception serves to protect the person's reputation and relationships. All three functions use deception to sustain an appearance of altruism. The

difference is whether or not the selfish motives are acted on currently, possibly later, or never. If the answer is never, then concealing impulses becomes the same thing as controlling them.

A fourth function of repression is illustrated when one must repress the transgression of an ally so as to maintain an important relationship. A personal slight might have been a misunderstanding instead of a defection. Even if it was a defection, it might be better to ignore it so as to maintain the relationship. This function has been suggested by Lockard (1977) and by Lloyd (1984). In this case it is not one's own motives that are repressed, but those of someone else. This is especially valuable when the other is more powerful (Hartung, in press). Deception is still at the root of this function of repression, but the motive is to maintain long-term relationships, not to pursue short-term selfish gain.

Not only motives are repressed. Guilt can be kept unconscious just as rigidly, and with equal benefit. When it is best to fight without ambivalence, the guilty inhibited person is at a disadvantage. When benefit comes from brazenly denying that an action was self-serving, the expression of guilt is worse than useless. In many situations, however, the expression of guilt is beneficial. When a person wants to repair a relationship, and denial or excuses won't work, then expression of abject guilt is called for. A mere apology is worth little, emotional expressions of remorse are better, but tangible reparations of self-punishment are necessary for full reconciliation. This is hard for most theories to explain, but an evolutionary view of reciprocity relationships suggests that it is quite sensible to be skeptical of apologies unless the guilty party takes some action that decreases fitness by at least as much as was gained by the transgression. Such actions are convincing indicators that the transgression will not be repeated. It would not be surprising if people had a built-in tendency to try to reestablish relationships in this way. This may offer clues to the explanation of masochism.

There are undoubtedly other situations in which the capacity for repression can offer an advantage, but the above possibilities are sufficient to allow more detailed consideration of the hypothesis that repression evolved to enhance the ability to deceive others. In one sense, the hypothesis is correct. In all examples, the benefit to the individual is contingent on, or at least involves, deception of others. The use of the word "deception" implies, however, that the benefits of repression come mainly from short-term manipulations, in a word, from cheating. In fact, the self-deception of

repression more often functions to preserve a valuable relationship. Most often, it inhibits the individual from acting in a way that would give a short-term benefit. Most repressed motives are never pursued. The emphasis on the ubiquity and utility of deception in much current work on evolution and human behavior has been a valuable antithesis to the naively reassuring group selectionism of previous decades. In this case, however, it obscures the broader function of repression. The most valuable function of repression, it seems to me, is to enhance the individual's ability to sustain long-term relationships by denying drives for personal short-term gain, by overlooking opportunities to cheat, and by fostering beliefs in the positive qualities of others. Repression fosters benevolent self-deception and deception of others more often than it fosters subtle cheating. The capacity for self-deception does enhance the ability to deceive others in order to pursue covert selfish motives. But, in my opinion, this offers only part of an explanation for the evolution of the capacity for repression.

Most often, it is either drives or inhibitions that are repressed. This fits well with the proposed model of intrapsychic conflict. With each decision, fitness is pursued either in the short run or in the long run. When the long run wins out, as it does most of the time, the drive is repressed. When the short-term benefit is pursued, guilt is repressed. Almost always, it is beneficial for one or the other to be repressed. People who lack the capacity for repression (obsessives and certain psychotics) experience horrible ambivalence and cannot ally their conscious mind with just one side. Thus, their secret strategies are exposed to the world, while guilt simultaneously inhibits self-serving action.

The most comprehensive review of the implications of evolutionary biology for psychoanalysis has been provided by **Badcock** (1986). He emphasizes the crucial importance of deception in negotiating relationships and reviews the development of the idea that repression serves to enhance deception. He notes that the use of the word "unconscious" in this context refers not to the general unconscious, but to the Freudian unconscious, that is, the locus of actively repressed material (p. 43). Without this clarification it is easy to waste time trying to understand the functions of the unconscious in general, a task that is unnecessary because there is no reason to expect that there has been an advantage to experiencing blood pressure regulation, gall bladder activity, and the myriad other bodily regulations that go on outside our awareness. He moves quickly from the advantages of self-deception to the origins

of the Oedipal complex and a variety of other fascinating speculations about the evolutionary significance of other psychoanalytic phenomena. Another careful review (Lockard, 1980) covers the history of the idea and the few data-oriented studies that bear on it. Lockard and Paulhaus (1988) offers wide ranging reviews.

A distinct position on this problem has been advanced by **Slavin** (1987). He emphasizes the advantages of deception in the negotiation of the parent-offspring conflict, first described by **Trivers** (1974) in a seminal paper that outlines the inevitability of conflicts that occur between parents with remaining reproductive capacity and their offspring who have been inevitably shaped to manipulate the parents to provide more resources and help than is in the parent's best reproductive interests. Because the parent is more powerful, it is expected that the parent will manipulate the offspring to behave in ways that are in the best interests of the parent but not the offspring. Parental sanctions against sibling conflict are a good example. **Slavin** notes that deception is the best weapon that the youngster has, and it is likely to be used fully. The child's wishes that are acceptable to the parent stay conscious while others that would be punished if detected, are pursued unconsciously. Repression is a "built-in mechanism to help ensure autonomy from the family environment" (p. 425). His exposition is convincing, but seems to me to be a special case of the more general functions of repression outlined above. His proposal has the special merit of providing an explanation for why children might express, and even act according to moral principles provided by the parents, even when such actions are not in the child's interests. And it suggests that there should be a stage at the time of separation from the parents, when obedience to the dictates of the superego should weaken.

EVOLUTIONARY FUNCTIONS OF THE DEFENSES

One general strategy of deception, well described by **Slavin**, is to act younger than the actual age, thus manipulating the parent into providing resources that would only be in the parent's interest to provide for a younger offspring. This offers an explanation for the capacity for regression. The notion that regression may serve as a strategy of deception is of enormous interest. It helps to account for the ubiquity of regression in stressful situations where increased investment is in the parent's best interests. The ubiquity of

regression may have led to its use as a general signal of a need for aid, perhaps one used routinely and automatically by adults as well as children. **Slavin** provides a detailed description of the benefits of deception for both parties in parent-child interactions, and convincingly argues that the mental agencies function to modulate the use of these defenses. In adults, however, he decreases emphasis on the benefits of deception and implies that it may involve regression to earlier modes of interaction. It would be nice to find that these deceptive strategies are used mainly by children and regressed adults, but I fear that, in fact, children's ability to use repression in the service of deception may be but an early and relatively crude precursor of skills that become so smooth in adulthood that they are easily overlooked.

The suggestion that repression functions by enhancing the capacity for deception leads naturally to the supposition that other defenses may also. This may explain why the defenses are so many and so elaborate. The various ego defenses may be elaborate and specialized strategies for deception. Although the benefits of repression may mainly support long-term strategies, the benefits of the specific ego defenses may arise mainly from their support of short-term deceptive strategies.

Reaction formation, for example, may be more effective than simple repression at promoting deception in certain circumstances. The man who is aroused by a proposition from an attractive woman may loudly proclaim the next day at church that he is starting an antipornography group. Whether he pursues the sexual opportunity or not, he effectively hides his secret. If he overdoes it, of course, people will recognize that "he doth protest too much," but it is surprising how reluctant people are to consider impure motives in loud moralists. Projection is effective for similar reasons. If someone angrily accuses other people of a failing, most people are distracted from the possibility that the person is trying to conceal the same failing and they will be reluctant to accuse him or her or it. Also, the person who experiences his or her own impulses in others will often accurately anticipate the unsavory motives of others, especially if they face similar choices.

Empathy is valuable because it allows a person to experience the world as another does and, therefore, to act towards the person in ways that are especially finely tuned to the other person's special needs. This allows people to anticipate the needs of their friends. It also, however, allows them intuitively to know what will effectively deceive (and manipulate) a specific other individual. This is

a far cry from the usual more benevolent view of the capacity for empathy, but it may offer at least as powerful an explanation.

Identification with the aggressor is one of the so-called "primitive defenses." The case of Patty Hearst horrified the country but exerted a fascination and sympathy as well, because many people intuitively knew that a kidnapped woman might be able to survive only by psychologically joining her captors. What most people don't know is that such kidnappings continue to be a part of everyday life in several parts of the world, and have undoubtedly been common during human evolution. A person with an unchangeable loyalty to one group would be at a substantial disadvantage in the environment of evolutionary adaptedness.

What about splitting? It is a strategy as important to adult human relationships as the ability to distinguish good and bad milk are to the infant. A person with the ability to split the affections of others has a powerful weapon, especially in situations where relationship partners are otherwise unavailable. By using splitting, a person can disrupt and establish alliance and gain a chance to form an alliance with one of the previous partners. This works only if the chosen partner is idealized and thus can be deceptively flattered and promised the moon, and if the other party is depreciated so as to disengage the affections of the chosen new ally. A person with the ability to split the affections of others has a powerful weapon. By disrupting an established alliance the splitter gains a chance to form a relationship with one of the previous partners. The chosen partner is idealized and thus can be deceptively flattered and promised the moon without facts getting in the way. The other party is depreciated so as to disengage the affections of the chosen new ally. Splitting is a mechanism for negotiating interpersonal triangles. People who use splitting extensively tend, because of both projection and their past experience, to expect that others cannot be trusted. In such situations, it may be best to defect first, preferably by provoking the other person into rejection so that he or she appears responsible. The splitter can then maintain a blameless self-image and can try to further exploit the guilt of the other person. Narcissists and borderlines use these strategies excessively and are therefore unable to sustain satisfying relationships, but they are just trying to relate in the ways they know best. One might guess that children would learn to emphasize splitting as a major mode of interpersonal manipulation in situations where emotional support became available mainly by splitting an already unstable parental relationship. One might

also expect such strategies to be frequent in people who have not experienced stable reciprocity relationships, and who have learned to manipulate people by extreme and unconscious forms of flattery followed by defection. They are understandably suspicious when someone is unaccountably kind to them.

What about passive aggressive behavior? It is infuriating and often self-defeating, but it may be the best way for a powerless person to manipulate a more powerful person who would retaliate massively if any overt defiance were recognized. Whining, bitching, malingering, **hypochondrias**, and similar strategies are also useful when dealing with a more powerful person.

Introjection of values and beliefs serves early in life to allow the transmission of cultural norms and traditions. Later in life, unconscious introjection of the leader's wishes is likely to benefit the individual as well as the group, especially if the leader is powerful and has substantial resources to distribute. Identification with a powerful person offers profound advantages, while accurate perception of the situation might be disastrous.

The more "mature" defenses distort reality more subtly. Rationalization explains the behavior of the self and others in ways that distract from the true motives, a benefit both to deception of others, and to maintaining self-esteem when a defection by another or the self must be accepted. Intellectualization keeps affect separate from the content that arouses it, so that pleasure or anger is not shown in public at moments that would lead to trouble. Then there are the defenses that are the most mature of all: humor and sublimation. Humor turns problematic confrontations into play so that neither party is required to compete seriously, with the risks that would entail. It is also a way of gracefully giving way without acknowledgment of inferior status. It can also be used to insult a third party subtly so as to define the in-group and out-group (Alexander, 1986). In sublimation, the desired activity is carried out in displacement and some derivative satisfactions is achieved. The activity offers benefits to the individual, even if they are quite distant from the original aim.

Finally we come to asceticism and altruism. It is no accident that these defenses are valued above others. What could be better or more admirable (or beneficial for us!) than the person who abjures personal pleasure and resources for the sake of helping others? These people are our saints and we admire and encourage them, even if we don't always emulate them. The defense of altruism gives the self over to the satisfactions of pride and self-esteem

as substitutes for resources and sex. Our saints are poor and uninterested in money and sex, as they must be, for we quickly suspect the self-proclaimed altruist or ascetic who takes pleasure in personal satisfactions.

We all like to appear to be altruists, but neurotics try especially hard. They experience themselves as morally superior to other people and they pride themselves on their altruistic behavior. They tend to become bitter after experience with the disappointingly selfish nature of most people. Paradoxically, however, they are also wary of those who say that all people are basically motivated to pursue their self-interests one way or another. Such proposals threaten their fundamental strategy of appearing to be an ideal reciprocator, and ideal relationship partner.

Just one step further is the strategy of appearing to be a naive, vulnerable person ready to be exploited. If some people are self-destructively beneficent (i.e., make altruistic mistakes), it might be profitable to try to convince others that one is such a **mistake-maker** so as to be accepted as a cooperator in order that the other will be beneficent in expectation of large return through "mistakes" later (Alexander, 1987). This is not a bad description of certain forms of neurosis. Such people tend to attract exploiters, but they don't end the relationship when the other tries to defect. Instead, they induce guilt, demand expensive reparations, and unconsciously inflict all kinds of subtle revenge if the partner does not comply. Both partners in such relationships are liable to exert substantial efforts to undermine the self-esteem of the other in order to induce the belief that that no alternative relationships are possible and it is not possible to leave. It makes perfect sense that such people are particularly reluctant to admit any less-than-altruistic impulse in themselves. Such an admission would wreck their whole strategy.

PSYCHOANALYSIS AND EVOLUTIONARY BIOLOGY

The specific proposals about intrapsychic conflict, the capacity for repression, and the ego defenses must all be regarded as only suggestions. Finding ways to test them will likely prove devilishly difficult. In the meantime, they are at least consistent with modern evolutionary biology and psychoanalysis, and may provide a starting point. The stronger conclusion is that the mental structures discovered by psychoanalysis are biological capacities that have

been shaped by natural selection, and, therefore, that they must have evolutionary explanations. The search for these explanations must begin with an understanding of the evolutionary origins of repression and intrapsychic conflict, but it will quickly advance to address oedipal wishes, castration anxiety, the developmental stages, transference, concepts of self, narcissism, and many others. All may be profitably considered in the light of the new evolutionary theory. This work may provide the foundation in biology that has long been sought by psychoanalysis. It is conceivable that attempts to answer these new questions will lead to rapid progress in psychodynamics, and perhaps ultimately to long overdue respect from the rest of science.

The proposal about repression has many disturbing implications. Perhaps most disturbing is the suggestion that we cannot trust ourselves. When we experience ourselves as most generous, we may merely be manipulating others for our own benefit in especially subtle ways. When we are feeling most angry, we may be especially guilty. It has been no secret that self-knowledge is difficult to attain. Freud revealed the enormity of the task by showing that our conscious experience is just the tip of the iceberg. Now, if it is correct that the defenses serve mainly to deceive ourselves so that we can better deceive others, the task is found to be many-fold more difficult than it seemed, if not altogether impossible. Whoever would undertake the task of self-exploration would do well to begin with the task of understanding why we are so self-deceived, why, that is, people with the capacity for repression have a selective advantage.

Another implication is equally disturbing. We humans have been trying to understand how our minds work for thousands of years. We have made progress, but the field of psychology remains frustrating, a collection of facts and theories that do scant justice to the complexity of the human mind. It is tempting to think that we have simply been going about it wrong, that a coherent psychology is possible. But, what if the convoluted structure of the mind is neither accidental nor intrinsically necessary for mental function? What if the arms race between deception and ability to detect deception has created layer on layer of complexity, layers that are useful in the social competition that largely determines human reproductive success. This may be the real reason why the human mind is not like a computer. Not only are our minds shaped for fitness maximization, instead of accuracy and rationality, but they have also been shaped by natural selection to be impenetrable to

others, and, therefore, to ourselves. No wonder psychology is so infernally complicated.

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