

Rewriting Psychology with Six Novel Hypotheses

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Hypothesis #1: Rewriting Evolutionary Psychology

Humans are obsessed with their need for security. If you agree with geneticist Theodosius Dobzhansky (1973) that “Nothing in biology makes sense except in the light of evolution.” then obsession with security makes sense, because, contrary to evolutionary psychologists’ present understandings, natural selection selects for genes and traits on the basis of security.

It is generally agreed by evolutionary psychologists and evolutionary biologists that reproductive fitness (reproductive success) is the main determinant of natural selection. It is also agreed that human behavior is adaptive, and that adaptations are shaped by genes that increase reproductive fitness by prolonging survival into the reproductive years. But this formulation fails to recognize that there is no trait that can act directly to prolong survival. Although there is no “prolonging survival trait or gene”, there are traits that do prolong survival, but they do so by preventing death. Taking security measures to prevent death is the one existing mechanism by which survival is prolonged. That is, prevention of anything might occur if security (safety) measures are taken before the demise occurs. *Security is the proximate goal of adaptations; prolonging survival the ultimate goal.* All medical and public health measures that have dramatically increased human life expectancy – from surgical operations to antihypertensive and antibiotic medications and clean water – are security measures that act to prevent death. That security measures increase survival into the reproductive years, is the likely cause that the ensuing increased reproductive fitness results in natural selection.

Sexual selection also results in reproductive success and is naturally selected for, but is not an adaptation that increases security. For example, the beautifully plumed peacock's tail does not increase, it may even decrease, the peacock's security, but, because the ornate tail leads to sexual selection, it increases reproductive success, and, therefore, is selected for by natural selection. *Except for sexual selection human behavior is adaptive, so that security is the goal of almost everything we do. We value security more than we value anything else.* Security is a primary concern of our every interest: personal, social, financial, health, home, national, etc.

Natural selection selects for adaptations that increase security, which shifts the understanding of evolutionary psychology and human behavior from that of prolonging survival to that of increasing security: a

paradigm shift. Switching to a security paradigm may seem like a minor change, but if the hypotheses developed here, which are based on a security paradigm, are confirmed, monumental consequences from rewriting major segments of psychology and related disciplines will follow. Paradigm shifts are the cause of scientific revolutions (Kuhn 1962). Simply shifting natural selection's paradigm from prolonging survival to security results in the ability to understand large segments of psychology and of human behavior that are otherwise not understandable or have been wrongly understood. This essay provides an overview of how a security paradigm is able to revolutionize understandings of psychology and of human behavior.

Because natural selection selects adaptations based on a security paradigm, the goal of our behavior is to make us secure and/or feel secure. Being secure is recognized by the cognitive belief system (CBS), and when we appreciate that we are secure, we then feel secure, as recognized by the emotional belief system (EBS). *Because of natural selection, we and all living organisms are a synthesis of security systems. That belief systems are security systems will be discussed in the next section.*

Hypothesis #2: Rewriting Emotions

Much about emotions has remained a mystery. Evolutionary psychiatrist and psychologist, Randolph Nesse (2014) recognized that evolutionary psychologists do not agree on why emotions exist, how they are regulated, and, even, how many emotions there are. He has stated that a general theory of emotions is neither necessary nor possible. Presented here, however, are two novel hypotheses that together do explain a general theory of emotions:

1. *Emotional feelings are really beliefs.* Simple feelings, according to dictionary definitions and common usage, are: opinions, viewpoints, thoughts, mindsets, beliefs. When we feel that something is true, we believe it to be true. Feelings in this sense are beliefs based on nonconscious mental constructs. Emotional feelings are also beliefs, but in the form of conscious, affective physical sensations. It is difficult to grasp the idea that emotional feelings are beliefs because to do so involves bridging two domains: feelings, which are nonconscious mental constructs, and emotional feelings, which are conscious, affective physical sensations. The emotional system, of which emotional feelings are an integral part, acts as a belief system: the EBS. The purpose of a belief system is to form beliefs, and the primary purpose of a belief is to determine behavior. The more complex the brain, the more that beliefs determine behavior. The less complex the brain, the more that instincts, which are naturally selected for, determine behavior. According to triune brain theory (MacLean 1990), reptiles' instinctual behavior is based in the brain stem

and cerebellum, mammals' emotional behavior is based in the limbic system, and human rational behavior is based in the neocortex. Instinctual behaviors, which derive from genes that have been naturally selected for, are non-modifiable, whereas EBS's beliefs and behaviors are modifiable by CBS's beliefs and behaviors.

2. *The EBS, like all body systems, is a security system.* Security systems increase security. That an emotional feeling is a belief, whose one purpose is to increase security, mandates that there is only one form of emotional feelings: the emotional feeling of security. *The emotional feeling of security and its variations are affective feelings (beliefs) that are determined by the state of the subject's security*, with happiness or joy determined by an increase of security, anxiety or fear by a threat to security, and depression or sadness by a loss of security. Emotional feelings are automatic responses to security concerns. Positive emotional feelings are experienced as pleasurable and desirable, and motivate the subject to seek security; negative emotional feelings are disagreeable and undesirable and motivate the subject to avoid insecurity. Emotions are named after their associated emotional feeling: anxiety, sadness, happiness, anger, etc. And because there is only one basic emotional feeling, the emotional feeling of security, to feel secure is the goal of the behavior that derives from EBS's beliefs.

Emotional feelings are subjective and personal, so that the feeling of personal security is the core element of an emotional belief. Although happiness, anxiety, and sadness are basic emotional feelings that recognize an altered state of a person's security, there are other emotional feelings that, in addition to having a core element of personal security, explain the basis for the altered state of security. For example, anger is an emotional feeling directed at the cause of the loss of, or threat to, security; hate is an emotional feeling of hostility aimed at the source of the threat or cause of the loss of personal security; disgust is a gastro-intestinal antagonistic reaction (It makes me want to throw up.) to a personal security issue.

The reader is probably surprised and skeptical, as I initially was, to find that emotional feelings are beliefs, and that there is only one basic emotional feeling: the emotional feeling of security. This is an epic breakthrough in the understanding of emotions, which, until now, as noted above, has remained mostly unsettled. Once it became clear that the emotional feeling of security is the basic belief that derives from the emotional belief system (EBS), it readily became apparent that there was a second belief system: the cognitive belief system (CBS). This led to the understanding that human behavior primarily derives from beliefs that originate from an interaction between the EBS and the CBS. This interaction suggests the following scenario: Belief in the form of the emotional feeling of security initially derives from the EBS in the limbic system and is then modified by CBS's evidence-based

reasoning in the prefrontal cortex to conform to truth or reality. Interactions between the EBS and the CBS primarily determine the beliefs that decide our behaviors, but they also determine our values, worldviews, and cultures.

Both instinctual behaviors that are directly naturally selected for, and volitional behaviors that derive from beliefs that originate in belief systems, have personal security as their goal. Even the goal of evidence-based reasoning, which is the basis of CBS's beliefs, is to increase personal security. It does so by finding reality. That is, understanding the reality of a situation enhances the ability to counteract threats to security. EBS's beliefs seek subjective, personal security; CBS's beliefs, seek objective, reality-based security.

The EBS, the first belief system to evolve, is the foundational belief system and is the default belief system that is activated in emergencies. When people's security is threatened by an external threat, or by an internal threat, such as by the stress of sickness, fatigue, sleep-deprivation, frustration, or time constraint, they react emotionally, with the intensity of the reaction reflecting the perceived severity of the threat. In Kahneman's book, *Thinking, Fast and Slow* (2011), thinking fast is an EBS function and thinking slow a CBS function.

Emotions have three components: Component 1 consists of the emotional feeling of security, which is a belief that results in behavior aimed at increasing personal security. Component 2 also consists of behavioral changes such as facial, vocal, and postural expressions, which convey behavioral intent and personal security needs to others. Component 3 consists of physiologic changes, as from increased sympathetic tone or from cortisol and norepinephrine increase, in response to a threat to security.

Beliefs from the EBS in the form of emotional feelings have no correlation with reality; they, instead, correlate with the state of personal security. CBS understandings, however, correlate with reality depending upon which aspect of evidence-based reasoning is used to produce the understanding. If the understood belief is merely a random guess that is not based on evidence or reasoning, there is poor correlation with reality; if it is based on reasoning there is a good correlation with reality, although a drawback with reasoning is the ease by which it can be twisted by rationalizations; and if it is based on evidence (knowing) there is an excellent correlation with reality because evidence determines reality.

All human behavior, including all social interactions, and even play, is security-seeking. Play in humans measures physical and/or intellectual competence and the more competent we are the more secure we feel. This applies to solving puzzles, to playing a musical instrument, playing card or board games, or playing ball games. Everything we do can be traced to increasing our feeling of security, as assessed by the EBS.

The reason that we desire to feel secure has been considered (Jaffe 2010) to result from the emotional feeling of security initiating the release of dopamine into the nucleus accumbens, thereby triggering pleasant, affective, emotional feelings from the brain's reward system, the same system that results in opioid addiction. The desire to feel secure is so strong that it is the primary motivator of behavior and even of the desire to live. Feeling secure is a good feeling. Feeling insecure is dreadful. Those, who feel severely depressed, who have lost security and feel very insecure, may lose their will to live, particularly when they recognize that death would release them from the dreadful feeling of insecurity.

Belief in a god provides a coveted feeling of security, and it is to that end that in primitive societies human sacrifices were offered to appease gods. Islamist fundamentalists self-destruct on behalf of Allah, who provides them a feeling of total security. Those, in whom the EBS is their dominant belief system, value, respect, honor, revere, glorify, consider holy, and worship that which makes them feel secure. Theists, whose EBS is dominant, worship God because God makes them feel secure, even when they are not secure, which is placebo deception. Placebos, a product of a security paradigm, will be considered next.

Hypothesis #3: Rewriting the Understanding of Placebos and God

Current thinking favors the hypothesis that placebos derive from expectations, but that lacks a full understanding of their mechanism. The understanding of placebos, as developed here, is founded, like most everything in this essay, on a security paradigm, and is based on the hypothesis that *placebos increase the feeling of security without increasing security, itself*. This, surprisingly, unlocks the answer to society's most contentious question: Is there a God? The answer to the God question requires an understanding of placebos, which are considerably more ubiquitous than has been recognized. Placebos occur in many domains. The focus here is on placebos in the medical and religious domains, which, like the EBS, are deeply concerned with personal security.

The understanding of how placebos work requires recognizing that as our security increases, our feeling of being secure also increases. That is, when we are secure we feel secure. In the case of placebos, however, the feeling of security does not follow security. It, instead, originates from authority. *Only an authority can produce placebos because only authorities can increase a person's feeling of security (from the EBS) without first increasing security (from the CBS)*. This explanation requires a full understanding of what an authority is.

A comprehensive definition of authority, one not found in dictionaries, is: *An authority, is anyone: a friend, parent, relative, caregiver, expert, leader, clergyman, policeman, or God; or anything: The Bible, Quran, Constitution, or law, that is believed and obeyed because the believers feel that the authority will protect their security.* Authority is the source of EBS's beliefs, and of the behavior that follows the belief of human infants, who use only EBS's feelings for belief because they have not yet developed a functioning CBS that uses evidence-based reasoning for belief; and of non-human mammals, who, like infants, lack a well-functioning CBS. In the case of infants, the authority is the mother or caregiver, and in non-human mammals the authority that is followed and obeyed based on a hierarchical system of dominance and submission, is the alpha leader, or, in domesticated animals, their master. When an authority suggests that a placebo has powers that will increase a subject's security, it will not be believed by those whose CBS is dominant and who demand evidence for belief, but it will be believed and blindly followed by those whose EBS is dominant and who believe whatever an authority suggests, even if the suggested powers lack evidence and are imaginary.

Lying is a deception consisting of misinformation for which there is no evidence. The intent of lying is to increase the liar's security, so that those with a dominant EBS, whose primary goal is security, should be prone to lie. Also, an authority's beliefs are never evidence-based, for if they were, the belief would be considered to originate from evidence and the CBS, not from authority and the EBS. Placebo deception consists of misinformation from an authority, which, because it lacks evidence, increases the subject's feeling of security but does not increase security, itself. Therefore, both lying and placebo deception should be found more commonly in those with a dominant EBS, such as in right-leaning conservative Republicans who reason, often brilliantly, but do not require evidence for belief, than in those with a dominant CBS, such as left-leaning liberal Democrats who reason and do require evidence for belief. According to PolitiFact (2013) Republicans lie three times more often than Democrats. The use of evidence by the CBS prevents lying and placebo deception.

The ability to reason made Homo sapiens human. Both theists and those comprising the conservative right, and scientists and those comprising the liberal left, are human and are able to reason. But they reason at different levels of competence as determined by their learning and willingness to use evidence in their reasoning. The difference between theists and scientists is that theists base their beliefs on authority, the authority of Holy Scripture, which does not use evidence for belief, whereas scientists, who have learned the advantages of using evidence for belief, base their beliefs on evidence. Similarly, right leaning conservatives tend to favor EBS's authority for belief,

whereas left-leaning liberals favor CBS's evidence for belief. EBS's authorities, by definition, provide feelings of security, whereas CBS's evidence provides security, itself. Reasoning alone can approach reality but it takes evidence to actually find (determine) reality. In the course of cultural evolution humans first learned to reason, and then to reason with evidence.

Albert Einstein was wary of authority. He famously stated, "A foolish faith in authority is the worst enemy of the truth." (WashingtonsBlog 2013) Einstein escaped the Holocaust where Hitler's ruthless EBS-derived authoritarian dictatorship resulted in the murder of six million Jews and initiated a war that killed almost sixty million people. When Eichmann was asked whether he felt guilty about his having directed the killing of so many Jews, he answered "I was only following orders" (Arendt 1963), which translates to "...only following authority." Hitler's followers followed him because they had faith in his leadership (authority), which increased their feeling of security without increasing their security, itself. They were tricked by placebo deception.

There are countless instances where faith in authority has resulted in placebo deception, such as: the 1978 Jonestown massacre of 909 members of the People's Temple cult, who were led by the charismatic authority Jim Jones (Guinn 2017) and were made to feel secure even though they were anything but secure; the 1997 Heaven's Gate mass suicide of 38 followers of Marshall Applewhite (Hexham and Poewe 1997) which was also an example of placebo deception, where Applewhite made followers feel secure when they were not secure; and faith in the authority of Holy Scripture, which has led billions of theists to believe in God, a placebo deception. Infants and non-human mammals, who lack a developed CBS and derive their beliefs from their EBS and authority, live in a placebo-studded world.

Had Einstein's beliefs derived from authority instead of being evidence-based it is questionable that he would have discovered relativity because those whose EBS is dominant and base beliefs on authority consider authority to be the final word, so they have no need to look further for an answer, nor can they look further because their dominant EBS lacks the ability to competently reason with evidence. Authoritarians, in whom the EBS is dominant and whose beliefs are based on authority, resist reasoning to a compromise. This could explain the ongoing Israeli-Palestinian clash, where the ultra-Orthodox Jews and the correspondingly religious Muslims, both of whose EBS's are strongly dominant, cannot agree on a two-state solution, a solution that possibly could be agreed to if liberal, secular Jews and Palestinians, whose dominant beliefs derive from their CBS so that they have the will and the ability to compromise, were authorized to make decisions regarding a two-state solution.

A two belief system model involving the EBS and the CBS is unique in its ability to explain the dichotomy in human beliefs and behaviors. Bringing Galileo before the Inquisition portrays the divergence between science and religion, between evidence-based reasoning and faith in authority, between authoritarian (autocratic) and democratic (with its rights and freedoms) governance, between the liberal left and the conservative right, and between the CBS and the EBS. That is, science is based on evidence-based reasoning, and evidence-based reasoning is a source of CBS's liberal beliefs, whereas, religion is based on faith in the authority of Holy Scripture, and authority is a source of EBS's conservative beliefs. Faith is defined as belief without evidence for the belief, and authorities' beliefs lack evidence. Evidence determines reality so that faith in authority, lacking evidence, results in imaginary or false EBS-dominant beliefs, such as occurs with placebos. Faith in authority is also the source of nocebos. Placebos, such as heaven, increase a theist's feeling of security without increasing security, itself, whereas, nocebos, such as hell, decrease a theist's feeling of security without decreasing security, itself.

An inert drug or a sham operation becomes a placebo when a medical authority, a physician, ascribes to it the imaginary power to heal. EBS dominant patients, who derive their beliefs from authority, will unquestioningly believe the physician, so that they will feel that the placebo will heal them even if the placebo has no healing powers. Thus, placebo deception occurs when a physician's prescription makes the patient feel more secure, but not be more secure. But for placebo deception to occur the patient's beliefs must derive from EBS's authority; not from CBS's evidence. Most medical conditions threaten a patient's security, so that anxiety, which is an emotional reaction to a threat to security, is a component of most medical conditions. This is apparent with pain, which has a large anxiety component. Anxiety is partially or totally reversed when the placebo increases the patient's feeling of security, even though it cannot increase the patient's actual security. The hypothesis proposed here is that *medical placebos result when an authority, a physician, suggests that an inert drug has the power to heal, thereby making those with a dominant EBS feel more secure, which reverses the anxiety component of the ailment without reversing the ailment's pathogenesis. The mechanism by which placebos improve depressive states, in which security is lost, is the same as for anxiety states in which security is threatened: placebos increase feelings of security.* This suggests that those who are EBS dominant and use authority, not evidence, for belief should be more subject to medical placebo deception than those who are CBS dominant and do use evidence for belief.

Going to heaven gives theists a good feeling of security, but because heaven is imaginary, it does not result in actual security: a placebo effect. The religious realm is plagued by placebo deceptions. *The concept of a god is*

that of an entity with supernatural powers, which can be used to provide security to followers. Those with a dominant CBS do not believe in God or in gods because there is no objective, empirical evidence that God or gods have supernatural powers, provide security, or even exist. Theists, however, have a dominant EBS, so that they believe in God based on their faith in authority – in Abrahamic religions the authority is Holy Scripture: the Bible and the Quran – which (falsely) suggests to them that God does have supernatural powers that can provide them security, a suggestion they believe because they unquestioningly believe authority. An entity, such as a placebo, which provides the feeling of security but not security, itself, cannot be God because a god is an entity that provides security. That is, although an entity that provides security may be a god, an entity for which there is no evidence of providing security and provides only a feeling of security from an authority is a placebo, so that what theists call God is a placebo. Billions of people over thousands of years have been tricked by placebo deception into believing in nonexistent gods because their beliefs derived from their EBS, where beliefs are based on authority, not on evidence, but the more they learn to competently use and to accept evidence-based reasoning for belief, the less likely will they continue to be fooled by placebo deceptions.

That God does not exist is the elephant in the room, which cannot be seen by theists whose dominant EBS's beliefs derive from authority, even though it is obvious to those who use evidence from a dominant CBS for belief. According to Ingraham (2017), Republicans are more religious than Democrats, which makes sense because God is a placebo and both placebos and Republicans derive belief from a dominant EBS's authority. The understanding that God is a placebo should end the evils of religious faith, but the evils are not due to religion per se, but are due to the dominance of the EBS, from which religious faith, violence, and intolerance, such as in racism, white supremacy, and anti-Semitism, spring. Switching from a dominant EBS to a dominant CBS would minimize or eliminate the evils of religious faith, violence, and intolerance.

Faith, as in faith-healing, faith-based medicine, and religious faith, lacks evidence, derives from the EBS, and results in placebo deception. The faithful, whose beliefs derive from authority rather than evidence, should more commonly be found to be EBS dominant than the faithless non-believers, who should more commonly be found to be CBS dominant. Since EBS's beliefs derive from authority, whereas CBS's beliefs do not, this could be confirmed by demonstrating an increased hypnotizability of those whose EBS is dominant. That is, if hypnotism represents the power of suggestion, and if the subject considers the hypnotist to be an authority who makes suggestions, then those with a dominant EBS should be more hypnotizable than those with a dominant CBS. Indeed, E.T. Long (1968)

reported that highly hypnotizable subjects were significantly more religious (faithful) than their less hypnotizable counterparts.

Placebo deception has resulted in theists' false belief that God exists. If God does not exist there can be no God-given ethics. However, a morality-based ethics built on a security paradigm exists and is robust, and will be addressed next.

Hypothesis #4: Rewriting Morality and Altruism

In almost all cultures and religions, some form of the Golden Rule, of doing to others as you would have them do to you, which is an ethic of reciprocity, is considered the basis of moral behavior. Because of natural selection, people desire security (as assessed by the CBS) and secure feelings (as assessed by the EBS) more than they desire anything else, so that moral behavior consists of increasing another's security/secure feelings. And, because of natural selection, security is the universal "good". The basis of CBS's moral behavior is empathy: *understanding* others, and standing in their shoes. This should not be confused with sympathy, which, defined as *feeling* another's pain, derives from the EBS's emotional feelings.

Moral behavior is benevolent behavior that increases another's security/secure feelings at an insignificant cost to the actor, whereas altruistic behavior is moral behavior that increases another's security/secure feelings but at a significant cost to the altruist's own security/secure feelings. Although empathy can bring about moral behavior, its ability to bring about altruistic behavior is limited by the cost to the altruist's security/secure feelings. Emotional attaching that derives from the EBS, however, can bring about both moral and altruistic behaviors. There is much to be said about how and why emotional attaching does bring about altruistic behavior, while empathy's ability to bring about altruistic behavior is limited, but, first, current understandings of altruism will be considered.

E.O. Wilson (1975) the founder of sociobiology, which is the forerunner of evolutionary psychology, stated "The central theoretical problem of sociobiology is: How can altruism, which reduces reproductive fitness, possibly evolve by natural selection?" In an attempt to resolve this issue, kin selection (inclusive fitness) theory (Hamilton 1964), which Wilson first endorsed, and group selection (multilevel selection) theory (E. Sober and D. Wilson 1999), which he subsequently favored, were developed. Selection theories have played a conspicuous role in attempting to explain altruism in humans. There is now a huge literature and extensive interest regarding which

selection theory better explains how altruistic behavior results from natural selection. But I believe that utilizing selection theories to explain altruism is futile.

In the essay “An Evolutionary Theory of Everything,” (Jaffe 2015) I argued that both kin selection and group selection theories are unfounded. The argument was based on the consideration that selection theories wrongly assumed that altruistic behavior evolved by natural selection and, therefore, is instinctual, but that is unlikely because, although there may remain a few instincts in humans, such as fear of snakes or of heights, instinctual behavior in humans is generally agreed to be almost non-existent. Altruistic behavior is instead a volitional behavior that derives from beliefs that emanate from belief systems, as almost all human behavior does. Eusocial insects, as ants, termites, bees, and wasps, however, do not have a belief system, so that their behavior is instinctual and derives from genes and traits that are naturally selected for. It appears that the instinctual behavior of eusocial insects has been confused with the belief-derived behavior that is present in humans, who do have a belief system, and it is this conflation that has led to the widely accepted but mistaken idea that altruistic behavior in humans is naturally selected for, rather than deriving from a belief that originates in a belief system. This error is understandable because it has not been recognized that human behavior derives from beliefs that originate in belief systems, an idea that became tenable only after it was recognized that emotional feelings are beliefs, thereby leading to the notion that there must be a belief system to form the beliefs.

In a 2014 review of evolutionary psychology Todd Shackelford, Editor-in-Chief of *Evolutionary Psychological Science* (wrongly, in my opinion) stated, “Evolutionary psychology represents a relatively new, and long overdue, paradigm shift in which the architecture of the mind is understood as a product of specific and recurrent selection pressures operating over deep evolutionary time.” ***I argue that the idea that human behavior derives from naturally selected adaptations as a consequence of selection pressures rather than from beliefs that derive from belief systems, is a major, fundamental mistake by evolutionary psychologists.*** Although evolutionary biologists select for biological traits in a one-step process, evolutionary psychologists require a two-step process in selecting for human behavior: The first step involves natural selection selecting for the emotional and cognitive belief systems, and the second step involves the belief systems forming the beliefs that determine behavior. Although instinctive behavior derives from selection pressures, humans have very few instincts, so that almost all of human behavior derives not from selection pressures but from beliefs that have origin in belief systems. This is a fundamental change in the understanding of how evolutionary psychology works.

Although selection theories do not provide an explanation of how altruism works, attachment theory does. When attachment theory was first proposed (John Bowlby 1958), it was applied to infants and children emotionally attaching to their primary caregivers. Different styles of attachment, based on how secure the child was made to feel by the caregiver have been described (Ainsworth 1989). Attachment style is the role of attachment theory that is emphasized by psychologists today. If, however, emotional attaching is considered not in terms of attachment style but as a mechanism for transferring security/secure feelings reciprocally between attachments, this would provide an understanding of how altruistic behavior is possible.

People routinely act in self-interest to increase their own security/secure feelings. Moral and altruistic acts, as defined here, are benevolent acts that increase another's security/secure feelings. Consequently, moral and altruistic behaviors must increase both the benefactor's and the beneficiary's security/secure feelings. This can be accomplished by an act of reciprocity, of doing to others as you would have them do to you, of tit-for-tat, which is enabled by emotional attaching: If I treat you benevolently by increasing your security/secure feelings you will attach me to you and once we are attached you will treat me as you treat yourself, and will treat me benevolently by increasing or pledging to increase my security/secure feelings. ***Emotional attaching is the EBS-determined mechanism that provides for security/secure feeling transfer between those attached, resulting in both moral and altruistic behaviors.***

Benevolent behavior can derive from either EBS's emotional attaching or from CBS's empathizing. Empathy is risk averse. The amount of sacrifice that a rational person is willing to make to help another is limited by the amount of risk involved. For example, we may be willing to help a person or a philanthropic cause with which we empathize, realizing that the help we offered would in the case of moral behavior insignificantly decrease our own security, but we would usually hesitate to act altruistically if the risk of significantly jeopardizing our own security is great. Empathy as the mechanism for altruistic behavior is limited because those whose CBS is dominant and are able to empathize are also able to evaluate risk, so that they limit their behavior to how much risk they consider reasonable to assume when trying to help the needy. For example, if a person whose CBS is dominant, but can't swim, happens upon a drowning stranger, it would be reasonable to believe that it would be too risky to jump into the deep water in an attempt to rescue the stranger because both would then drown. Reasoning limits empathy-based (CBS-based) altruistic behavior by deciding what is an acceptable risk. Moral behavior is benevolent, increases another's security/secure feelings, and is associated with minor risk. But the level of risk required for

moral behavior to rise to the level considered to be altruistic has not been defined. Does the risk of donating blood or a kidney to one who is needy rise to the level of altruistic behavior, and if it does, will the risk be acceptable to the putative altruist?

EBS-based altruistic behavior is limited not by the level of risk, as in the case of CBS's empathy, but by the closeness of attachment bonding. Altruistic acts are more security intense than are simple moral acts, so that altruistic behavior involves a larger amount of security/secure feeling transfer between attachments than occurs with simple moral behavior. ***EBS's altruistic behavior occurs only when an attachment is closely emotionally bonded to the altruist. The closer the bonding, the more security that the altruist will be willing to sacrifice on behalf of the attachment.*** Conversely, the weaker the attachment, the less security the altruist will be willing to sacrifice on behalf of the attachment. This is suggested in *The Expanding Circle* (Singer 1981/2011): Those at the center of an expanding circle are treated more benevolently than those at the periphery of the circle.

While moral behavior from CBS's empathizing is usually repaid by recognition and gratitude, moral and altruistic behaviors that derive from the EBS's emotional attaching, are reciprocated with security/secure feelings. There is a broad range of emotional attaching – from mini-attaching that derives from a minor security transfer and results in only moral behavior, to major close attachment-bonding that derives from a major security transfer and results in altruistic behavior. The reciprocal transfer of security can be initiated by either party to the attachment. Security transfers that start with the altruist transferring security to the attachment, is one of the reasons that Trivers's reciprocal altruism breaks down.

Robert Trivers (1971) suggested that E.O. Wilson's dilemma involving altruistic behavior could be resolved by reciprocal altruism, which is based on a concept of reciprocity. But this did not solve the problem for two reasons: (1) Like in kin selection and group selection theories, reciprocal altruism theory (wrongly) considers altruistic behavior to be instinctive and to derive directly from being naturally selected for. As noted earlier, however, instinctive behavior is essentially absent in humans. It, instead, derives from a belief system's beliefs as almost all human behavior does. (2) Reciprocal altruism breaks down if the attachment dies before reciprocating, or, as in game theory, if there are cheaters (defectors) who do not reciprocate. Attaching, however, can work forwards or backwards. Cheaters, who do not reciprocate, would be eliminated if altruists first receive security from their attachments, rather than if altruists first provide security to their attachments.

Mini-attaching, sets the tone for considerate actions. It drives hospitality, kindness, and gifting, where a favor, which increases the security-feeling that leads to attaching, is returned with a favor. It is the tactic used to attract and attach a potential friend or mate, a principle of salesmanship, a scheme by those looking for political and other favors, and, like attaching in general, is the basis of cooperation.

People emotionally attach anyone or anything that provides them security (Jaffe 2010). Close family and friends usually provide significant security/secure feelings and are usually closely attachment bonded. The more security/secure feeling that is provided by attaching, the closer will be the attachment bonding, and the closer the attachment bonding the more likely that the altruist will sacrifice his/her own security to benefit the attachment.

The closeness by which attachments are bonded to each other by secure feelings determines the degree to which they are considered one, and the more they feel emotionally fused into a single entity, the more they consider action on behalf of an attachment to be action on behalf of themselves. Thus, when altruists sacrifice themselves to protect a closely held attachment they emotionally feel that their sacrifice is protection for themselves. When spouses are closely attachment bonded they feel that they are one with each other, so that when the security/secure feeling of one member of a couple is increased or decreased, so is the security/secure feeling of the other. Close attaching is the basis of the outlawed Hindu practice of suttee (sati), where a widow is immolated after her husband dies.

The act of reciprocating is generally recognized as the basis of benevolent behavior, but what needs to be recognized is that emotional attaching is the mechanism by which those who are EBS dominant reciprocate. Attaching behavior, which is the agent of reciprocal security/secure feeling transfer, results in behaviors that are both selfish, aimed at increasing personal security as all behavior is, and selfless, aimed at increasing the attachment's security.

Altruists sacrifice their security on behalf of people, ideas, or causes to which they have become closely attached. Parents usually are closely bonded with their children, with whom they hold genes in common, and who are potential sources of security, and sacrifice for them. When Patrick Henry said, "Give me liberty or give me death," it was because he felt closely attached to the concept of liberty. Japanese Kamikaze pilots sacrificed their lives because of their loyalty to the emperor, who provided them security/secure-feelings and, therefore, was a close attachment. Islamic suicide bombers sacrifice themselves in the name of Allah, with whom they are closely attached because Allah provides them a feeling of total security. Throughout history martyrs sacrificed themselves for their

God, their ruler, their country, or a cause to which they felt closely attached because it provided them significant security/secure-feelings.

Everything we do is done to increase our security/secure feelings. Our possessions – cars, food, homes, pets, and art – are first emotionally attached and then are physically attached (acquired) because they increase our security/secure feelings. Thus, everything we do or hold is done or held to increase security/secure feelings. More than for any other reason, people emotionally attach on the basis of commonalities, which are concerns that increase security/secure feelings that are held in common. In a war zone, there is a great threat to security, which is a commonality shared by army buddies who become closely attached and act altruistically toward each other. In-groups consist of those who attach to each other in order to support shared concerns, such as: citizenship, class, clubs, dislikes, dominant belief systems, education, ethnicity, experiences, family, friends, games played, gangs, gender, genes, hobbies, home locations, ideas, jobs, likes, political parties, problems, religions, schools attended, sexual orientation, sports and sports-teams, and tribes. We feel more secure and are more secure with whom we share interests in common than with whom we have nothing in common, and often seek out those with whom we share concerns. In-group members are emotionally attachment bonded to other members in their group in proportion to the amount of security/secure feelings they receive from being in the group and from the others in the group.

Having both an in-group and an out-group is the reason that emotional attaching is a double-edged sword, which results in those in the in-group being emotionally attached and treated benevolently, whereas those in the out-group are unattached and are treated malevolently. Sectarianism, tribalism, racism, white nationalism, anti-Semitism, intolerance of and discrimination against those in out-groups, such as those in the LGBTQ community, occur in those with a strongly dominant EBS, but not in those with a strongly dominant CBS, whose benevolent behavior results not from emotional attaching but from empathizing. Empathy does not discriminate between in-groups and out-groups, so that, unlike the case of those whose EBS is dominant, everyone tends to be treated equally by those whose CBS is dominant. Interestingly, the hormone oxytocin acts similarly to emotional attaching's double-edged sword (De Dreu 2011).

Obtaining women's rights is unrelated to emotional attaching. Gender inequality is based on the consideration that the EBS, which lacks cognitive ability and is physically oriented, deals with physical security, whereas the CBS, which is a cognitive system and is intellectually oriented, deals with intellectual security. Men generally are more physically powerful and better able than women to provide physical security. This had

established male dominance over females in the past, when the EBS and physical clout were more important than they are today. But as the CBS has led an advance from a physical to an intellectual culture, because women's intellectual ability matches that of men's, women are now tending toward co-dominance with men. This, however, is not the case in less developed and in strongly religious societies, where the EBS remains strongly dominant.

Hypothesis #5: Rewriting Political Truths

About 200 to 300 thousand years ago, which was many millions of years after mammals developed an EBS, a developing CBS culminated in Homo sapiens. Slow, generation by generation, progressive learning to use evidence-based reasoning competently, has resulted in cultural evolutionary changes, which have transformed humans from being primitive savages toward being civilized. Learning to reason competently resulted in the Age of Reason in the 17th century, and was followed by the Enlightenment in the 18th century. Recognizing the important role of evidence in science started in the 17th century with development of the scientific method, as demonstrated by Galileo (1564-1642), who used evidence to verify belief, but only in the second half of the 20th century, when the medical literature began to explore the superiority of "evidence-based medicine" over "the art of medicine" was it generally recognized that evidence-based reasoning is required to find truth. But what is truth?

A belief is an idea which is accepted to be true. If an idea is not considered to be truthful it will not be believed. There are a number of theories of what truth is. Reality is the basis of the correspondence theory of truth, and is the usual way truth is defined and understood. The CBS uses evidence-based reasoning to determine its truth of reality. On the other hand, the object of EBS's beliefs and behaviors is personal security. Our two belief systems base their beliefs on different truths: ***CBS's truth is reality and EBS's truth is personal security***. The more that evidence based reasoning, which is the source of CBS's truth of reality is chosen as the basis of belief, the more dominant the CBS will become, whereas the more that personal security, which is EBS's truth, is chosen as the basis of belief the more dominant the EBS will become. Having two truths opens a new way of understanding behavior, particularly political behavior, which is extremely useful in the era of the Trump presidency. Trump's behavior and the behavior of his base make sense only by understanding that the truth of their dominant belief system, the EBS, is personal security.

Trump's EBS is strongly dominant, so that he holds his truth of personal security tightly. His inordinate need for security not only results in his being an inveterate liar -- the reason people lie is to increase their security --

but it also prompts him to build a wall and to restrict immigration to keep out those who would threaten his security. Narcissism, which possibly results from an excessively dominant EBS, orients everything to self. Narcissists trust only themselves to provide security. Trump is an authoritarian, and like all authoritarian leaders, seeks total control of everyone's behavior in order to assure his own security. And because his EBS is so dominant, which, due to a zero sum relationship makes his CBS recessive, he is anti-intellectual and anti-science, and downplays the hazards of global warming and the need for environmental protections.

Those with a dominant EBS believe and follow authority because they feel that the authority will increase their security. Trump's populist base, which consists mostly of the less educated working class whose EBS is dominant, follow him because EBS's beliefs derive from authority, and he has the charm of a charismatic authority: a leader who so believes in himself that his followers feel secure when they follow him. His followers revere him for the same reason that theists, whose EBS is also dominant, revere God: They feel that God will bring them security. In reality, Trump and God primarily increase their followers' feeling of security, not their security, itself, resulting in placebo deception. Trump is a demagogue who appeals to the emotions of those who are EBS dominant, but does not appeal to those who are CBS dominant, who use evidence-based reasoning for belief. Those, who are younger, better educated, and more liberal, and are more likely to be CBS dominant, generally abhor Trump.

Republicans in Congress, whose EBS is dominant -- not nearly as strongly dominant as Trump's, but significantly more dominant than Democrats in Congress -- show a lack of integrity when they feel compelled to vote the party line, which they do because their political party determines their security. ***Corruption occurs when personal security, which is EBS's truth, is chosen over reality, whereas integrity results when reality, which is CBS's truth, is chosen over personal security.*** Even those, who are very competent in evidence-based reasoning, may be EBS dominant if their desire for personal security is so strong that it exceeds their desire for reality.

A belief system's dominance varies in degree, ranging across a spectrum that extends from extreme EBS dominance to extreme CBS dominance. Dominance increases when a belief system's truth is chosen by the subject over the truth of the other belief system for determining belief. For example, when security is threatened, such as from poverty or a disaster, EBS's truth of personal security is chosen over CBS's truth of reality, so that the EBS increases dominance. Insecurity results from perceived threats to security and the greater the feeling of insecurity, with everything else being equal, the more likely will the EBS, with its security-seeking beliefs, be dominant. On the other hand, because evidence-based reasoning determines CBS's truth-determined dominance, as competence in the

use of evidence-based reasoning is learned and increased, so does CBS's dominance.

CBS's truth of evidence-based reasoning is the basis of liberal, left leaning belief and behavior because the ability to reason with evidence results in open mindedness and the ability to change. Conversely, EBS's truth of personal security, as with authority, lacks open mindedness and the ability to change, is conservative in that it conserves traditional institutions and values. The fact that each of the two belief systems has its own truth explains why there is a left-leaning liberal party, which is called Democratic, and a right-leaning conservative political party, which in the U.S. is called Republican.

Beliefs, and the behaviors that follow the beliefs, may be compartmentalized, as in the case of Francis Collins, director of The National Institutes of Health, who is both a theist with beliefs based on EBS's truth of security, and a scientist with beliefs based on CBS's truth of reality, or in the case of those who are very concerned about financial security and are fiscally conservative, with their financial concerns based on EBS's truth of personal security, but are also socially liberal with their liberal beliefs based on CBS's truth of evidence-based reality. Cultures are strongly influenced by belief systems, because belief systems determine beliefs, beliefs determine behaviors, and beliefs and behaviors determine cultures. Changing dominance of belief from the EBS to the CBS by choosing truth based on reality over truth based on security, is the mechanism underlying cultural evolution, which will be addressed next.

Hypothesis #6: Rewriting Cultural Evolution

Mammals are born with an EBS. That which, more than anything else, sets Homo sapiens apart from other mammals, is the development of a CBS, which interacts with an already developed EBS to form beliefs and behaviors. The beliefs that are dominantly expressed when the two belief systems interact are determined by the truth that the believer favors. *Cultural evolution occurred and continues to occur as a result of humans switching their preferred truth from EBS's personal security, to CBS's evidence-based reasoning's reality. Thus, cultural evolution results from an increasing dominance of the CBS, and a decreasing dominance of the EBS in a zero sum relationship.*

It is important to recognize the zero sum dominance relationship between the two belief systems. Mullainathan and Shafir (2013) found that scarcity decreases cognitive ability. They hypothesize that it does so by decreasing bandwidth or mental capacity. From my perspective, however, scarcity is stressful. It is a threat to

security, which increases the EBS's dominance. Because of a zero sum relationship, as the EBS's dominance increases the CBS's dominance decreases, which I consider a likely reason that scarcity, like any stress, results in decreased cognitive ability. This correlates with the generally recognized finding that when people become more emotional they become less reasonable. The zero sum relationship between the two belief systems has universal application including to teaching. "Teachers who give kids opportunities to make choices can help develop children's executive function skills, which then helps them stay focused and keep their emotions under control." (Guernsey 2019)

The emotional feeling of security is the basic belief that derives from the EBS. It is an inherent feeling (belief) that we and other mammals are born with, persists throughout our lifetime, and is activated by our security status. The emotional feeling of security is innate and cannot be eliminated, but it can be modified and minimized by beliefs from the CBS. Unlike EBS's beliefs, CBS's beliefs are not innate. They are learned, presumably by a process of, or similar to, learning to competently use evidence-based reasoning. *Cultural evolution is a result of Homo sapiens progressively learning to competently use evidence-based reasoning for belief. This explains both the behavioral changes as human infants mature to adults, and the behavioral changes as humans have culturally evolved and are continuing to evolve from being savages to being civilized. It accounts for the Flynn effect (Flynn 1987), which is the observed rise in I.Q. test scores of about three points per decade, until, apparently, when competence in the use of evidence-based reasoning is attained, a test score ceiling is reached. This suggests that once humankind becomes competent in the use of evidence-based reasoning for belief, a civilized culture will have largely been realized, so that cultural evolution as we know it will likely cease.*

Comparison between the EBS-derived beliefs/behaviors and the CBS-derived beliefs/behaviors are listed:

1. The behavior that derives from EBS's beliefs is physically oriented, including physical violence and wars, whereas the behavior that springs from CBS's beliefs is intellectually oriented, non-physical, and non-violent. Shifting dominance from the EBS to the CBS has the potential of decreasing or, conceivably, eliminating violence and wars.
2. Because emotional feelings are personal and the EBS is a security system, EBS's beliefs (without emotional attaching) result in behavior that provides only personal security, whereas CBS's beliefs, which result in empathetic behavior, provide security to others.

3. Because the EBS does not have the ability to reason, its conservative beliefs maintain the status quo, resist change, and act to maintain traditions such as religious rituals, whereas the CBS does have the ability to reason, so that its beliefs are liberal, forward looking, broad-minded, open to compromising, to questioning, to new ideas, to change, and to progress.
4. Whereas the EBS lacks the ability for independent thinking and relies on authority for belief, so that it favors authoritarian governance, the CBS provides beliefs with the ability for independent thinking and favors a democracy with its freedoms and rights.
5. Whereas EBS's beliefs lack evidence so that lies, fake news, and conspiracy theories are believed by those whose EBS is dominant, they are not believed by those whose CBS is dominant and use evidence for belief. In addition, because the EBS's beliefs are based on authority, not evidence, this leads to placebo deception and belief in a non-existent God, whereas CBS's beliefs are evidence-based, which eliminates placebo deception and belief in God.
6. EBS's beliefs, because of emotional attaching, result in benevolent behavior toward those in an in-group, and to intolerance of and discrimination against those in out-groups, thereby leading to racism, anti-Semitism, sectarianism, tribalism, white nationalism, homophobia, and xenophobia. On the other hand, CBS's beliefs, which are based on empathizing, result in equality, tolerance, and non-discriminatory behavior. Switching from EBS dominance to CBS dominance eliminates intolerance and discrimination.
7. Whereas the EBS is a subjective system because feelings are subjective, the CBS uses evidence to distinguish between the imaginary and the real, which not only results in scientific and technological progress but affects all disciplines, thereby yielding an objective understanding of the world.

This list points to significant CBS-derived behavioral advantages over those that are EBS-derived. The differences between the behaviors that originate in the beliefs from the two belief systems explain why the beliefs, behaviors, and culture determined by the EBS are more primitive and savage, even to include genocides like the Holocaust, than that determined by the CBS, which are more advanced, humane, and civilized.

Cultural evolution appears to be accelerating. Women's-rights movements, LGBTQ-rights movements, and pro-democracy movements are on the march, while religiosity in the West is plummeting, all consistent with the Law of Accelerating Returns (Kurzweil 2005) according to which the rate of change of evolutionary systems tends to increase exponentially. Decreasing religiosity increases the rate of cultural evolutionary changes, which has been

slowed by religion. This is because religion glorifies faith in authority, which enhances belief from the EBS at the expense of evidence-based reasoning from the CBS, the reverse of how cultural evolution works. The impact of religion on belief is huge because EBS's truth as held by theists is personal security, and theists believe that God, like no other entity, provides total personal security. But that is changing, and changing rapidly. In 2017, 34% of Americans were nones, (not affiliated with a religion) (American Family Survey 2017). Some countries lag in evolving culturally, both because the insecurity caused by poverty increases EBS dominance and decreases cognitive ability, and because religion, which derives from the EBS, dominates their culture.

As the move toward CBS dominance increased at the expense of the EBS, in a cultural evolutionary process, learning to competently use evidence for determining belief triggered scientific and technological explosions, starting with the Scientific Age in the sixteenth century. It is also the likely cause of the decreasing world violence that has been so well documented by Steven Pinker (2011). Decreasing world violence is a large segment of the trek toward becoming more humane and civilized. It is a result of humans learning to competently use evidence-based reasoning, which increases beliefs and behaviors that emanate from a progressively dominant CBS, while decreasing beliefs and behaviors that emanate from a decreasingly dominant EBS.

Education increases liberalism because education increases dominance of the CBS from which liberalism derives. A Pew Research Center report (2015) found a widening gap between highly-educated and non-highly-educated Americans, with the highly educated being more liberal than the non-highly-educated. It found that students are more liberal after completing college than they were before they started. The share of college-grads and post-grads who are "consistently liberal" has grown sharply in the last twenty years, suggesting that students, while at college, increase competence in evidence-based reasoning or in a similar method for mental processing of information. The consideration that education increases liberalism poses a dilemma for EBS-derived entities such as religions and authoritarian governments. The more people become educated, the more they become CBS dominant and liberal, which decreases their faith in religion and increases their hunger for freedom and democracy.

When security or the source of security is threatened, insecurity results. The EBS favors personal security and opposes insecurity. Whereas personal security motivates actions, insecurity motivates reactions. Insecurity is the primary reason for the emotional feeling of hate and for the resultant hateful behavior, both of which derive from the EBS. Insecurity is also a root cause of terrorism, violence, and war. Violent behavior springs from the EBS: from an emotional fight or flight reaction that originates in the amygdala in response to a threat to security, whereas non-

violent behavior derives from CBS's evidence based reasoning. Those who are EBS dominant respond emotionally to threats to their security, whereas those who are CBS dominant respond rationally. Controlling emotions, remaining calm, and empathetically understanding the standpoint of others are CBS-determined, non-violent measures taught for anger management, and conflict resolution. Jesus, Gandhi, and Martin Luther King responded non-violently to security threats. Political resistance movements between 1900 and 2006 found that three quarters of the non-violent movements succeeded, but only a third of the violent movements succeeded. (Chenoweth and Stephan 2011) It is rare for democracies, which stem from the CBS, to war against each other (Shermer 2014). History suggests that EBS-derived authoritarian governments are more belligerent and less willing to compromise than are CBS-derived democracies. CBS derived self-control, as displayed in the Marshmallow Test (Mischel and Staub 1965), has a positive long term payoff.

As noted above, the behaviors that derive from the CBS's beliefs are much more humane and civilized than those that derive from the EBS. For example, violence and war derive from the EBS, and might be reduced or even eliminated if CBS dominance replaced EBS dominance as the primary source of belief. This is grounded on the understanding that the EBS is a physical system that is best fit for animals and savages, and employs physical means to increase security, whereas, the CBS is a rational, civilizing system that employs intellectual means to increase security. Humanism, as presented by Harvard's psychologist Steven Pinker (2018), by Columbia's philosopher Philip Kitcher (2014), and by secular humanist's Paul Kurtz (2016) endorses a non-theistic, humane, civilizing philosophy, which, when analyzed, primarily derives from beliefs that emanate from the CBS.

It is possible to switch dominance from the EBS to the CBS. Compartmentalization of belief, as in the case of Francis Collins, results in switching back and forth between belief system dominance. To calm down from being emotionally upset requires switching from the EBS to the CBS for the dominant source of belief. Self-control changes EBS dominance to CBS dominance. And it is likely that cultural evolution results from switching EBS dominance to CBS dominance. If the understanding that progressive learning to competently use evidence-based reasoning, the source of CBS's truth of reality and the main cause of cultural evolution, is valid, it may be possible to further accelerate the already accelerating humanizing and civilizing characteristics that occur with cultural evolution by teaching evidence based reasoning.

If, as proposed in this article, cultural evolution with its humanizing and civilizing features results from switching dominance from the EBS to the CBS; if it is possible to willfully shift behavior that springs from the EBS

to the CBS as has been suggested; and if this is accomplished by humans progressively learning to use evidence-based reasoning, then it might be possible to further accelerate cultural evolution and its desirable features by teaching competence in evidence-based reasoning. The degree to which teaching evidence-based reasoning accelerates humanizing and civilizing qualities has yet to be determined. There exist many programs that teach critical thinking that involves evidence-based reasoning. These programs are not oriented to test for changes in humanizing and civilizing virtues that are posited to result from increasing dominance of the CBS at the expense of the EBS.

As starters, the University of Michigan's psychology department has undertaken a study to compare people with and without college degrees to determine if extra practice with evidence-based reasoning will not only change their attitudes, but will detect a ceiling effect for change, similar to when the change in I.Q. test scores reach a ceiling in the Flynn effect. That is, those who are already competent in evidence-based reasoning and are strongly CBS dominant may have limited gains in CBS-derived behaviors because they already possess them, whereas those who have not yet learned to competently use evidence-based reasoning and are EBS dominant, such as the less educated, may gain much from practicing using evidence-based reasoning in order to gain competence in its use. If a proof of concept can be established, then a far-reaching program for teaching evidence-based reasoning would be in order. The potential benefits to humanity are great. *There is much to be gained by further investigating the novel hypotheses presented in this article that have resulted from employing a security paradigm for understanding evolutionary psychology, both because this offers revolutionary, innovative understandings of psychology and human behavior, and because this opens a possible new approach for changing humanity for the better.*

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