

## **The Critical Role of Security in Belief and Belief Systems**

### **Introduction**

This essay presents new understandings of belief systems, which determine our beliefs, and in turn determine our behaviors. These understandings are of existential interest in that they present a novel approach to the understanding of religion and of politics. The essay speaks to questions such as why do some people believe in God, while others are non-believers, and why are there two major political leanings: liberal and conservative? The answer offered here is that we have inherited two belief systems, with each contributing a set of beliefs.

My interest in how belief systems work began in 2002 when, while musing about 9/11 of the previous year, I asked myself “What makes me (or anyone) tick?” I became so absorbed in seeking the answer to the “tick” question that I retired from the practice of medicine in order to do so. It took eight years of vigorous searching before I found the fundamental concept that provided an answer to that question. In 2010, I published *The Primal Instinct*, which proposed that, because of natural selection, all human behavior is based on security, so that security is the Rosetta Stone for the understanding of our beliefs and behaviors, and of the belief systems, which determine the beliefs. I have subsequently placed a series of essays on my website, [www.mdjaffe.com](http://www.mdjaffe.com), which clarified, rectified, and expanded concepts introduced in the book.

Belief systems introduce an interesting and extremely useful new method for understanding and categorizing beliefs and behaviors. The task of this essay is to explain, on the basis of a security paradigm, how belief systems, beliefs, and behaviors actually work. If that task is successfully met, it will also explain how placebo deception influences religious and political beliefs, and how cultural evolution, which results when the cognitive belief system (CBS), which is an upgraded form of the emotional belief system (EBS), increasingly dominates belief and, thereby, transforms us from a savage to a civilized state – and much more.

## **Natural Selection Selects for Security**

To understand how belief systems work, we must first understand how natural selection works, because our belief systems have been naturally selected for. The currently generally accepted understanding of evolutionary biologists and evolutionary psychologists is that natural selection selects for traits that increase reproductive success. They believe that traits that sufficiently prolonged our ancestors' survival, so as to include their reproductive years, increased their reproductive success. But simple reasoning, without need for any additional study, reveals that a survivalist theory of natural selection is a subtle but monumental mistake and should be replaced by a security theory of natural selection.

A survivalist theory of natural selection is wrong because there is no known trait that can directly prolong survival. Genes code for traits that are behaviors (mechanisms) or for structures that enable behaviors to prolong survival by preventing early death. Prolonging survival (increasing life expectancy) is a goal that can be accomplished only by taking security (safety) measures to prevent death from occurring. Security measures are taken to prevent bad outcomes of any type. Only preventive measures can prevent death. Prevention is crucial to the understanding of how natural selection works. Other than for security measures, there is no recognized mechanism to prolong survival. Even therapeutic measures taken against disease are security measures taken to prevent death. We, and all living organisms, are an aggregate of adaptations that have been naturally selected for because they increase security.

Switching from a survivalist to a security paradigm for the understanding of behavior may seem minor, but it has major consequences. As a result, the behaviors of all living organisms, including all plants and animals, and the parts, systems, and organs of all living organisms, have security as their goal, so that everything we do, both physically and mentally, even telling the

truth or lying, is done to increase our security. The new understandings of belief and behavior based on a security paradigm, which are presented in this essay, are far from trivial. They introduce a new chapter in evolutionary psychology.

Surprisingly, the need to feel secure is so strong that it is more important than life itself. Those who have lost their security and/or their feeling of security that follows security, and have become deeply depressed, sometimes commit suicide. In primitive societies human sacrifices were offered to appease gods with the hopes that the gods would provide them security. Islamist fundamentalists kill themselves and others on behalf of Allah, who, they believe, provides them total security. And countries war against each other to increase their security or merely their feeling of security. The mechanism that makes people so avidly seek security is the same mechanism that compels drug addicts to rabidly seek drugs: the brain's reward system. The reward system has programmed us to seek security at all costs.

## **We Have Two Belief Systems, Each with Its Own Beliefs, Behaviors, Culture, Values, and Worldview**

We have inherited two belief systems: an emotional belief system (EBS), which evolved in mammals more than 65 million years ago, and a relatively recently developed (possibly beginning a couple hundred thousand years ago depending on how it is measured) cognitive belief system (CBS). The CBS's beliefs derive from evidence-based reasoning, whereas, the EBS's beliefs, which are in the form of emotional feelings, derive from authority.

Confusingly, there are two sources for the emotional feeling of security. One source results from the fact that people feel secure when they recognize that they are secure. The second source of the emotional feeling of security is authority. Other than for experience and memory, authority is the source of belief in animals who have not evolved a CBS, and in human infants

whose CBS has not yet developed. In animals, where there is a system of dominance and submission, the authority that is followed and obeyed is the alpha leader, and in infants and young children the chief authority is the parent or care-giver. Although the CBS seeks security from evidence-based truth, the EBS seeks the feeling of security from authority. An authority is anyone or anything that increases a person's feeling of security. But, as I have pointed out in *The Primal Instinct* and in essays on [www.mdjaffe.com](http://www.mdjaffe.com), emotional attachments are also anyone or anything that increases a person's feeling of security. Thus authorities are emotional attachments and emotional attachments are authorities. Love results from emotional attaching. This explains why authoritarian leaders are loved by their followers.

A critical difference between belief systems is the source of their beliefs: the EBS from authority; the CBS from evidence-based reasoning. This is illustrated when Galileo was brought before the Inquisition. The source of the Inquisitors' beliefs, which derived from their emotional belief system, was the authority of Holy Scripture, whereas the source of Galileo's cognitive system's beliefs was evidence-based reasoning. Authority and the EBS compete with evidence and the CBS for dominance of belief. In *Galileo's Torch*, a play by James Reston, Galileo's daughter warns him: "Father, there are enemies of science in the church."

Those who subscribe primarily to the EBS for belief have faith in authority and follow authoritarian leaders, not because the authority or authoritarian leaders actually bring security, but because they provide a *feeling* of security. Beliefs from the EBS are expressed in terms of the feeling of security, whereas beliefs from the CBS are expressed in terms of security, itself. Both belief systems have security as their ultimate goal because they are body systems and all body systems, such as our musculoskeletal system that makes movement possible, are security systems. They are adaptations that were naturally selected for because they increased security and, thereby, prolonged survival. I have made the radical claim that upends present understandings of

emotions: that because natural selection selects only for traits that increase security, there is only one emotional feeling: the emotional feeling of security. To feel secure is the one concern of the EBS. All affective (emotional) feelings are variations of the emotional feeling of security. We feel happy when we feel (believe) that we are secure, anxious when we feel (believe) that our security is threatened, and sad when we feel (believe) that we have lost security. Positive affective feelings, such as happiness or joy, are pleasant and motivate us to seek security; negative affective feelings, such as anxiety, fear, or sadness, are unpleasant and motivate us to avoid insecurity.

Feelings, such as anger, envy, and shame, are often considered to be emotional feelings, but I consider them to be more than that. Emotional feelings involve only the EBS, but anger, envy, and shame involve the CBS in addition to the EBS; and the feeling of surprise, which is often considered to be an emotional feeling, involves the sympathetic nervous system in addition to the EBS. In my view, that the emotional feeling of security is the core emotional feeling is a highly theoretical but totally workable hypothesis.

Security is so important to us that we value it above all else. We respect, honor, venerate, adore, praise, glorify, and extol that which makes us feel secure. We consider holy that which provides the feeling of security. Polytheistic gods were worshiped because it was believed that they provided security in specific domains. The faithful pray to their monotheistic God who, they believe, provides total security.

As in the case of Galileo and the Inquisition, the two belief systems differ in their source of security: the EBS from authority, and the CBS from evidence-based reasoning. Truth from evidence-based reasoning leads to security. That is, although the ultimate goal of the CBS is security, the proximate goal of its evidence-based reasoning is truth, because understanding the truth or the reality (truth is reality) of a situation enhances the ability to counteract threats to

security. Thus, beliefs that derive from the CBS are highly valued because they are truthful and, therefore, provide actual security. If beliefs are not truthful, if they are not evidence-based, those who use the CBS for belief would not believe them.

Conflicts between authoritarian and democratic governments, between the political left and the political right, or between those who are and those who are not religious, are really conflicts between the two belief systems, and the magnitude of the conflict corresponds to the degree of dominance of the dominant belief system. Worldviews are determined by beliefs and by belief-determined attitudes, both of which derive from belief systems.

The EBS, which is the dominant system of political conservatives and religious believers, results in behavior based more on security and stability than on truth and change. Except in infants and savages, behavior is rarely a consequence of only one belief system, but has various amounts of input from both belief systems, thereby producing beliefs with various degrees of dominance. Belief from belief systems can also be mixed in another way, such as frequently occurs in those who are socially liberal but fiscally conservative. Liberal values derive from the CBS but may be replaced by conservative values that derive from the EBS in the realm of finances if there is a strong desire for financial security.

### **Volitional Behaviors Require a Belief System**

Instinctive behaviors do not require a belief system. They are naturally selected as traits that increase security. Instinctive behaviors occur frequently in animals but rarely in humans. Almost all human behavior is volitional. Volitional behavior requires a belief system in order to produce beliefs that determine behaviors. Consequently, volitional behaviors stem from beliefs that derive from information processed by our two belief systems.

The understanding that belief systems are necessary for volitional behavior to occur has exposed what should be an embarrassing mistake by evolutionary psychologists. A large literature has sprung up trying to explain how it is possible that altruistic behavior, which increases another's security but decreases the altruist's security, could be naturally selected for. After all, natural selection is supposed to increase security, not decrease it. There has been an ongoing contest between two possible explanations to circumvent this dilemma, with one camp proposing kin selection (inclusive fitness) and the other camp arguing for group selection (multilevel selection) as mechanisms by which to pass on altruistic genes. But both camps are patently wrong. It is apparent that the evolutionary psychologists and many others involved in the argument have not recognized that altruistic behavior in humans is not instinctive, but is conscious, purposive, choice-driven, changeable, volitional behavior that is not naturally selected for, but, instead, emanates from beliefs that derive from a belief system. Evolutionary psychologists have been led astray because they have generalized the instinctive behavior of social insects to humans, who, instead of instinctive behaviors, have belief systems that make volitional behavior possible.

### **Altruistic Behavior from Both Belief Systems**

The beliefs that emanate from the EBS are in the form of emotional feelings, which are subjective and personal. Thus, the type of security that the EBS seeks to provide is *personal* security. The EBS, however, can also provide beliefs that increase another's security. Altruism is generally considered to be behavior that increases another's security, particularly if associated with some loss of the altruist's own security. As I initially described in *The Primal Instinct*, altruistic behavior can be explained by emotional attaching. All mammals, including humans of all ages, have a functioning EBS and automatically emotionally attach to those who provide

them security. (The EBS is an automatic, security-seeking belief system.) When people are emotionally attached they treat their attachment as they treat themselves, which is as the Golden Rule commands: to provide security for others just as we seek security – really the feeling of security – for ourselves. Emotional attaching is the reason that we have friendships, and why those in a group support each other.

Emotional attaching, however, is a double-edged sword. Those, in whom the EBS is dominant, treat altruistically only those to whom they are emotionally attached. This narrow-mindedness results in egregious behavior: feelings of supremacy, sectarianism, tribalism, racism, and antisemitism; in prejudice favoring attached insiders but intolerance and discrimination against unattached outsiders; and in Trump's America First and Brexit's nationalism. It results in discord between religions, nations, races, ethnicities, political parties, those with opposing ideologies and belief systems, and even between fans of different sports teams.

In the article "Oxytocin promotes human ethnocentrism" by CKW De Dreu et al. published in the 2011 *Proceedings of the National Academy of Sciences*, the claim is made that although oxytocin fosters in-group social (emotional) attaching, it leads to inter-group derogation: to feelings of superiority, and to inter-group prejudice, conflict, and violence. On that basis, the hormone oxytocin, like emotional attaching, is a double-edged sword. It benefits those who are in the in-group, but leads to intolerance and prejudice aimed at those in the out-group.

Altruistic behavior can also derive from the CBS. Although the EBS determines sympathetic feelings such as "I feel your pain," the CBS determines empathetic understandings such as "I understand your problem." Empathetic behavior is altruistic, but is not limited to those attached. It treats everyone equally. According to a Pew Research Center's 2014 report, liberals place more emphasis on teaching their children empathy and tolerance toward others than conservatives do. And the 2010 article "Compassionate liberals and polite conservatives:

associations of agreeableness with political ideology and moral values” by J.B. Hirsh et al., published in *Personality & Social Psychology Bulletin*, found that liberals were more empathetic than conservatives. Liberals, in whom the CBS is more likely to be dominant, empathize with the needy and legislate more to benefit them than do conservatives whose EBS is more likely to be dominant, and who legislate more on behalf of their own personal security or to benefit an emotional attachment.

## **Placebos Are Produced by Authorities; Placebo Deception by the Emotional Feeling of Security**

As defined here, faith is belief without evidence for the belief, and trust is belief with evidence for the belief. Evidence determines truth or reality, so that beliefs that derive from the CBS's evidence-based reasoning are truthful and trustworthy, whereas, beliefs that emanate from the EBS's faith in authority, lack evidence and need not be truthful or trustworthy. Knowing, which is a type of belief that determines truth and reality, is determined by evidence. Thinking, which is a rational type of belief that also derives from the CBS has good correlation with reality, but needs evidence to confirm that its belief is based on reason and not on a rationalization.

An emotional feeling is a type of belief that originates in the EBS. Its understanding depends upon in which of two contexts it is used: It either has an excellent correlation with reality when it follows evidence-based reasoning that derives from the CBS – people feel secure when they believe that they are secure – or it lacks evidence, and is considered imaginary, when it derives from EBS's faith in authority. When an emotional feeling is used in the latter context, placebo deception results.

All beliefs that derive from faith in authority are imaginary. If they were real they would derive from evidence and the CBS and not from faith, authority, or the EBS. Beliefs that

originate in the CBS have an excellent correlation with truth and reality, whereas, beliefs that originate in the EBS do not. It appears that the more dominant the EBS, the less truthfulness and the less integrity and the more corruption that results, whereas, the more dominant the CBS, the more truthfulness and integrity and the less corruption that results. Corruption is often rampant in poor, backward countries where the EBS is notably dominant. A strongly dominant EBS without a counterbalancing CBS in a country's citizenry may be both the cause and the result of a country being backward.

Religious belief derives from the EBS, and is based on faith in the authority of Holy Scripture. Belief in Trump and in his political agenda also derives from the EBS, and is based on faith in the authority of Trump himself. Conversely, scientific belief, whose mission is to seek security through truth, is evidence-based, not authority based, and derives from the CBS. Albert Einstein recognized that “A foolish faith in authority is the worst enemy of the truth.” Had Einstein’s beliefs derived from authority, he never would have discovered relativity. Einstein escaped the Holocaust where Hitler’s authoritarian dictatorship resulted in the murder of six million Jews and initiated a war that killed almost sixty million people. Hitler’s followers followed him because they had faith in his authority, which made them feel secure. As Hannah Arendt famously noted when Eichmann was asked whether he felt guilty about his having directed the killing of so many Jews, he answered “I was just following orders,” which, in the language of the EBS, translates to “I was only obeying authority.”

A major problem with the EBS and with authority, is that the beliefs that they render lack evidence and, therefore, are the basis of imagined misinformation and of placebos Placebos are much more pervasive and insidious than generally recognized. Although the usual explanation of placebos is that they result from expectations, that understanding is sketchy. Just as a security paradigm has been essential for the understandings of the novel ideas presented in this paper, a

security paradigm is also the key to the full understanding of how placebos and placebo deception work. A security paradigm has made possible broadening the understanding of placebos, ranging from medical placebos, which are the prototype of placebos, to include political and religious placebos that are discussed here, and judicial, social, and economic placebos that are not discussed.

Placebos increase a subject's feeling of security without increasing security, itself. Confusion between beliefs involving security and the feeling of security is a result of there being two sources for the emotional feeling of security. As noted earlier, a feeling of security can derive from either the existing level of security, in which case its origin is evidence from the CBS, or it can derive from authority, which is the source of the EBS's beliefs. Beliefs that derive from authority increase the feeling of security without increasing security itself, which is what a placebo does. An inert drug or a sham operation, or an imaginary entity, such as a god or heaven, become a placebo when an authority ascribes to it special powers, powers with no evidence that they actually exist and, therefore, are imaginary: the power to heal a medical condition or supernatural powers that can be used to benefit a theist in the case of a religious placebo. Authority is the culprit in placebo production, so that those who have faith in authority are subject to a placebo effect.

Only authority can make a placebo because only authority has the capability of increasing the feeling of security without increasing security first. Those in whom the EBS is dominant have faith in authority, so that they believe that the placebo has special powers simply because an authority claims that it does, even when there is no evidence for the belief. Authority increases the feeling of security without increasing security itself, which is what a placebo does. Placebo deception, on the other hand, occurs when subjects are led to believe that the placebo actually increases their security, even though only their feeling of security is increased. Deception occurs

from conflating the feeling of security with security. This happens for two closely related reasons: First, those whose beliefs stem from the emotional feeling of security, believe on the basis of feeling – a feeling is a belief – so that whenever they feel secure they believe that they are secure. Second, because the feeling of security routinely follows when security exists, subjects have learned to believe that when they feel secure they are secure.

Medical placebos can be understood by recognizing that anxiety results when a threat to security decreases a person's feeling of security. Medical placebos, in which a medical authority, a physician, ascribes imaginary healing powers to the placebo and, thereby, makes patients feel (believe) that they are secure, reverses the anxiety component of disease. (For a detailed explanation of medical placebos see Essay 2 on my website, [www.mdjaffe.com](http://www.mdjaffe.com).) Although placebos increase the feeling of security without increasing security itself, nocebos, such as hell, decrease the feeling of security without decreasing security itself.

The concept of God is that of an entity with supernatural powers that can provide believers with security. Although those in whom their CBS is dominant, tend not to believe in God because there is no evidence that God has supernatural powers or provides security, those in whom their EBS is dominant do believe in God, based on their faith in authority – in Abrahamic religions the authority is Holy Scripture: the Bible and the Quran – which suggests to them that God has supernatural powers that will provide security to the deserving, and they strive to be the deserving.

Entities, such as placebos, which provide the feeling of security but not security itself, cannot be gods because gods provide security. That is, although an entity that provides security may be a god, an entity that provides only a feeling of security is a placebo. What theists call God is really a placebo. **Billions of people over thousands of years have been tricked by placebo deception into believing in gods.** There is no stronger argument against the existence

of gods than that provided by placebos. No other argument against a god concept is necessary. None! That gods do not exist is the elephant in the room. It cannot be seen by those who use authority and their EBS for belief, even though it is obvious to those who use evidence and their CBS for belief.

Can a placebo argument also be used in respect to Trump and his political agenda? I believe it can. Trump's political agenda is made up of placebos. Although God is imaginary, Trump and his agenda are real. To be a placebo an entity does not have to be imaginary, although many placebos, such as gods or heaven, are imaginary. But amulets and prayers are placebos and are real. It is the powers that have been ascribed to the placebo by an authority that are imaginary.

Trump and his agenda are placebos that deceived millions of American voters into voting for him. Whereas belief in God stems from the authority of Holy Scripture, belief in Trump and in his agenda stems from the authority of Trump, himself. Trump is totally self-centered and acts with total authority. His classic narcissism exudes authority by projecting the impression that he is a superb leader, even though, as Craig Malkin, author of *Rethinking Narcissism*, points out: Trump's narcissistic behavior is really a cover up for low self-esteem. Trump's followers ignore the lack of evidence for his highly exaggerated claims and disregard his blatant lies because their beliefs, like Trump's, derive from their EBS's faith in authority. And because authority and not evidence is the final arbiter of belief that derives from the EBS, those in whom that system is dominant will not change their minds in spite of evidence to the contrary.

Trump is an excellent example of a politician who is his own authority, and, because authorities, and only authorities, can produce placebos, he and his agenda are political placebos. He deceives his followers with imaginary promises and with lies, making them feel more secure, even though they are not more secure. He is a populist who appeals to the less-educated

working-class, whose security-seeking EBS is dominant, so that they do not use evidence to detect that they are being deceived by placebo deception.

Belief in authority and in placebos is faith-based, and faith-based beliefs lack evidence. When the medical profession used placebo-controlled, double-blinded studies to determine evidence of efficacy of drugs and of surgical procedures, it also assessed the role of a placebo effect. Placebos and faith-based belief, which derive from authority and the EBS, can be eliminated by evidence-based beliefs, which emanate from the CBS.

### **Our Two Belief Systems Compete for Dominance of Belief**

We have two belief systems that compete for dominance: The CBS, which primarily seeks truth from evidence, and the EBS, which seeks the feeling of security from authority. There is a clash between religion, which seeks the feeling of security from authority, and science, which seeks truth from evidence-based reasoning; between the political conservative right, which favors both the feeling of security and the status quo, which emanate from the EBS, and the liberal left, which favors truth and change, which derive from the CBS; between supposedly apolitical Supreme Court justices, whose worldview primarily derives from their EBS, and Supreme Court justices, whose worldview derives primarily from their CBS; between those who zealously endorse Trump, whose political agenda derives from the EBS, and those whose beliefs primarily derive from the CBS and who strongly oppose Trump. The EBS's beliefs are clearly portrayed in Trump's political agenda, which, as I write, is in the process of reversing Obama's CBS's agenda. Agendas make apparent the dominant belief system of the proposer of the agenda. And the agendas are a cluster of beliefs and behaviors that emanate from the dominant belief system.

The basic difference between theists and atheists, between authoritarian and democratic governments, and between those for and against Trump, is whether their beliefs derive primarily from their EBS or from their CBS. Those, in whom the CBS's evidence-based reasoning is dominant, tend to favor autonomy, democratic freedoms, human rights, women's rights, abortion rights, LGBT rights, civil rights, change, openness, the new, and the modern. They are able to think for themselves and not depend on authority for belief. They are the liberal left, the skeptics, the intellectuals, the atheists, the humanists, the professionals, the academics, the scientists, and the liberal media, who seek both truth and change based on evidence-based reasoning. They question authority and are the first to be silenced, jailed, or eliminated by a power-grabbing authoritarian dictator.

The more security that an entity is believed to provide the more he, she, or it is revered by those in whom the EBS is dominant. Authoritarians obey, follow, and admire strong leadership, which makes them feel secure. For that reason, they follow, obey, and idolize God and Trump. Bob Altemeyer, author of *The Authoritarians*, and others have written extensively about the close association of right-wing authoritarians and belief in God. And according to Matthew MacWilliams, an expert on authoritarianism, writing in *Politico Magazine* in January, 2016: authoritarianism is the one statistically significant trait “that predicts whether you are a Trump supporter.”

### **The Role of Belief Systems in Cultural Evolution**

The only developed belief system that animals and human infants have is the EBS, so that animals and infants are able to respond only emotionally and only to security concerns. Without a developed CBS, they are not able to reason or to consider intellectual problems, so that their understanding of the world is limited to feelings that have personal security relevance. The more

a culture is determined by the EBS, the more backward and savage it tends to be; the more by the CBS, the more advanced and civilized it tends to be.

The EBS automatically responds to security concerns, but the evidence-based reasoning that determines the CBS's beliefs must be learned. Progressively learning to use the CBS's evidence-based reasoning is likely the primary cultural evolutionary mechanism by which humans have evolved from being savages to being civilized. Of the many factors that influence belief system preference, the role of cultural evolution, resulting from progressively advancing the use evidence-based reasoning, appears to be the most important. A 2015 report from the Pew Research Center finds that students are more liberal (with more dominance of their CBS) at the end of college than at the beginning of college. It found a widening gap between liberalism and conservatism and between highly-educated and non-highly-educated Americans. The share of college grads and post-grads who are "consistently liberal" has grown sharply in the last 20 years. Similarly, the Flynn effect is an example of cultural evolution, of progressively learning, generation by generation, to use the CBS competently.

Human belief and volitional behavior result from a mix involving the two belief systems, which vie for dominance and for the degree of dominance in a zero-sum game. As one belief system gains dominance, the other loses it. It is likely that learning is the chief mechanism of an ongoing cultural evolutionary process that started many generations ago when humans were early hominids and acted like animals. As humans have progressively learned to utilize evidence-based reasoning, their CBS's dominance has increased at the expense of their EBS, resulting in the accelerating humanizing and civilizing process of cultural evolution.

People do not attain cognitive competence at the same rate, so that they do not culturally evolve at the same rate. Holding ideas that are ahead of their time or behind their time points to the unevenness of acquiring cognitive competence. Cultural evolution stems from the CBS's

evidence-based reasoning, which occurs at the expense of authority-oriented belief that derives from the EBS. It is because of cultural evolution that governance by authoritarian rulers, which derives from the EBS, such as by kings, emperors, or autocrats, is being replaced by democracies, and why there is a progressively loud outcry for human rights, which derive from the CBS's quest for altruistic equality. We each experience a mini-cultural evolution as we gain competence in evidence-based reasoning, so that we become less self-centered, more rational, and more civilized as our infantile behavior, which results from only the EBS, is partially replaced by CBS beliefs, as we mature from childhood to adulthood.

That the EBS's beliefs are currently more dominant in the United States than the CBS's beliefs is demonstrated by the clash between science, which is the prototype of the CBS's truth-seeking, and religion, which is the prototype of the EBS's security-seeking. According to Pew Research, in 2014, 89% of Americans believed in God. But belief in God is trending downward in the United States. For example, in 2007 the religiously unaffiliated (nones) accounted for 16% of Americans, whereas in 2014 they accounted for 23 %. While religiosity is trending downward, presumably due to cultural evolution, human rights, which derive from the CBS, are, at least in developed, democratic countries, trending upward, also presumably due to cultural evolution. If cultural evolution is a guide, in the not too distant future, we may be approaching a crossroads, where the CBS could catch or even surpass the EBS for dominance of belief and of culture in the West. Ray Kurzweil in his 2005 book, *The Singularity Is Near*, proposed "The Law of Accelerating Returns" according to which the rate of change in a wide variety of evolutionary systems tends to increase exponentially. Because cultural evolution is an evolutionary system that appears to be accelerating exponentially, we could arrive at the crossroads surprisingly soon.

## **The Role of Belief Systems in Politics**

According to Cary Funk of the Pew Research Center writing in Dec. 2013 *Political Psychology*, studies of twins show that 56% of political beliefs are genetic. Inheriting political beliefs may be due to inheriting a predisposition favoring a belief system. The fundamental difference between right-leaning, political conservatives and left-leaning political liberals is that conservative beliefs derive from a dominant EBS, whereas liberal beliefs derive from a dominant CBS.

Political conservatives prefer to maintain the status quo because they do not have the ability to change. Their behavior derives from the EBS whose source of belief is authority. Authority is the final arbiter of belief that emanates from the EBS, so that no change beyond authority is necessary for those in whom the EBS is dominant. On the other hand, political liberals prefer change. Their beliefs derive from the CBS's evidence-based reasoning, which allows for autonomous thinking which results in change.

The political right's behavior derives from security-seeking, which emanates from the EBS, whereas the political left's behavior derives from evidence-based reasoning, which emanates from the CBS. The more sensitive people are to security threats the more likely that their political leaning will favor EBS's conservatism, whereas the more competent they are in evidence-based reasoning the more likely that their political leaning will favor CBS's liberalism. Those with inherited traits that make them more sensitive to security threats are more likely to have a dominant EBS and be politically conservative.

Drew Westen, author of *The Political Brain*, points out that higher anxiety in preschool predicts conservatism in adulthood. This corresponds with the finding that politically conservative adults were more afraid of the dark than liberal adults when each were four years old. These findings presumably are due to an inherited increased sensitivity to security threats, which favors dominance of belief by the EBS. Beliefs and their subsequent behaviors that derive

from a dominant belief system are the principal beliefs and behaviors expressed, but not to the exclusion of the beliefs and behaviors from a non-dominant belief system, which also may be expressed, but less often and to a lesser degree.

J.R. Hibbing et al., writing in the 2014 *Behavioral and Brain Sciences* journal on “Differences in negativity bias underlie variations in political ideology” cite a number of their 495 listed references showing the relationship between political ideology (conservative or liberal) to features of the environment that are negative or aversive, (such as threats to security.) The studies referenced confirm claims made in this paper: that conservative political attitudes derive primarily from EBS's security-seeking, whereas liberal attitudes derive primarily from the CBS's evidence-based reasoning. In that regard the following examples from Hibbing's paper are telling:

1. Reminders of mortality, such as images of tombstones, hospitals, or the elderly, (which suggest threats to security, which activate the EBS) increased conservative leanings.
2. Those who favor more authoritarian parenting styles are more likely to be conservative. (EBS's beliefs are based on authority.)
3. Conservatives tend to value security and conformity, and liberals tend to value self-expression and stimulation. (Evidence-based reasoning from the CBS provides liberals the ability to think for themselves.)
4. Conservatives more than liberals take into account authority (see 2 above) and in-group/out-group status (determined by emotional attaching from the EBS).
5. Favoring change (from the CBS's ability to think new ideas and not have to depend on EBS's authority), and equality (from the CBS's ability to empathize) are the two central variables distinguishing liberals and conservatives.
6. Compared with liberals, conservatives have stronger attachments to tradition, conformity, and order (because they rely on EBS's authority and are short on CBS's ability to reason to new ideas).
7. Conservatives (whose EBS lacks reasoning ability) have a lower tolerance for ambiguity.
8. Liberals are more exploratory and open to new experience than conservatives. (CBS's evidence-based reasoning gives them

that ability.) 9. Negative valenced visual stimuli (threats to security) increase (the emotionally-activated) sympathetic nervous system reactions in conservatives (who favor their EBS) more than do liberals. 10. Conservatives favor defense spending, roadblocks to immigration, and harsh treatment of criminals ( because their EBS, which is their dominant belief system, emphasizes security for themselves). 11. Conservatives are averse to compromise (for the same reason that they have a lower tolerance for ambiguity: the EBS lacks reasoning ability).

The dominance of belief systems not due to genetics is acquired. Most adults remain attached to the religion and denomination in which they were raised because beliefs gained in childhood often carry over into adulthood. Traumatic life experiences can make a person more sensitive to security threats. There was a 38% increase of conservatism after 9/11. Yet to be worked out, however, are the genetic factors that enhance sensitivity to security threats, with hopes that the sensitivity can be reversed. For example, there is interest in how the *DRD4* gene that codes for a dopamine receptor is related to political ideology.

Trump's political agenda is framed by his EBS, a system which presently dominates American culture. Like most good salespeople, Trump recognizes that more people currently respond to an appeal to emotions than respond to an appeal to evidence-based reasoning. That could be the reason that he is a populist and by definition a demagogue whose promises appeal to the unsophisticated, less educated, working-class voter, whose EBS is dominant and is, therefore, vulnerable to placebo deception. Cultural evolution predicts that as people become better educated and learn to rely more on their CBS for belief they will tend to switch dominance from their EBS to their CBS. The recent election statistics from Pew Research point in that direction: Among white voters, college graduates supported Clinton, whose CBS is dominant, over Trump, whose EBS is dominant, by a 14 point margin, while those without college degrees backed Trump over Clinton by an even larger 25-point margin. A strong case can be made that Trump

won the election because his base, whose EBS was strongly dominant, did not have the cognitive competence to detect placebo deception. A similar case can be made that people believe in God because they do not have the the cognitive competence, and do not use evidence, for detecting placebo deception. There are, however, many theists, many Trumpists, and many conservative Republicans, who are cognitively astute, but their cognitive competence may be overridden by their intense desire for security, in which case they may turn to the EBS and to authority, for their source of belief. They may, for various emotional reasons, just *feel* that there is a God or *feel* that Trump's agenda will bring them security. The conflict between those for and against Trump for president, like that between religion and science, and between religious fundamentalists and secularists, is really a clash between belief systems and the degree to which they dominate belief. The greater the threat to security, the more the EBS will automatically be called into play, whereas the more humans learn to proficiently utilize evidence-based reasoning, the more the CBS will dominate belief. Those, in whom the EBS is dominant, arrive at their beliefs on the basis of faith in authority rather than on the basis of trust in evidence, so that they are unable to question their beliefs, which they, therefore, hold very tightly. And the more tightly they hold beliefs that derive from their EBS, the less likely will they listen to reason or evidence from the CBS that questions the beliefs.

Trump's EBS is dominant so that he is obsessed with security, which he greatly values over truth. He lacks integrity, which values truth over security. His lies magnify his security threats. He is strong on national defense and on increasing its funding, on building a wall between the United States and Mexico for security reasons, and on restricting those from Muslim countries to enter the United States because of security concerns involving possible terrorism. His entire life has been oriented to increasing his financial security at the expense of his integrity. Trump's strong loyalty feelings reflect his emotional attaching, which also determines his

intolerance to those to whom he is not emotionally attached, and reflect his narrow-minded, sectarian, nationalistic orientation rather than the broad-minded, universalized worldview that derives from the CBS's ability to understand and to empathize. Trump is an example of those in whom the EBS is strongly dominant and who lack interest in science, scholarship, and human rights. Their beliefs impede scientific progress by reducing government research funding, and opposing environmental protection and anti-global-warming programs. The various rights movements, even though opposed by beliefs that emanate from the EBS, have come about because of cultural evolution resulting from gains in dominance of the CBS. As noted above, those whose EBS is dominant tolerate ambiguity poorly and are more confrontational and less willing to compromise than are those whose CBS is dominant because they depend upon authority for their beliefs and have difficulty forming or modifying beliefs by themselves.

After Trump assumed the presidency, the political beliefs and behaviors that derive from the emotional belief system became ascendant in the United States. But if the history of the cultural evolution of humankind is any predictor, this will be reversed. Those in whom the CBS is dominant believe their beliefs on the basis of evidence, not authority, whereas those in whom the EBS is dominant, such as Trump's followers and religious fundamentalists, believe beliefs that derive from authority. But beliefs that derive from authority have a glaring defect: They increase the feeling of security but not security, itself and, therefore, are placebos. To obtain real security and not be fooled by a placebo's feeling of security, we need to downplay the EBS and focus on enhancing the CBS, such as by teaching the importance of evidence and the hazard of authority. This would broaden our worldview, increase tolerance of others, promote human rights, improve education, health, and science, and would accelerate cultural evolution and the humanizing and civilizing of the world. Being civilized beats being a savage.

## **Are War and Violence Really Inevitable?**

The seminal idea of this paper is that natural selection selects for traits that increase security. Based on that idea, a number of novel hypotheses have been developed, such as that all human behavior seeks security, and that religion and politics are understandable in terms of belief systems. The most existential claim, one having a profound effect on world culture, derives from a new understanding of how placebos work. This has resulted in the understanding that theists have been tricked by placebo deception into believing in a nonexistent God. But there is a second concept that might, if developed, also result in a profound change in our civilization. It is the possibility of eliminating violence and war by switching dominance of belief systems.

Does losing one's temper or losing self-control result from switching dominance from the CBS to the EBS, and does calming down result from switching dominance back to the CBS from the EBS? If so, there are significant advantages to intentionally switch from a dominant EBS to a dominant CBS. The potential advantages, if this could be worked out, are staggering. Switching belief system dominance results in cultural evolution and in a civilizing process that includes reducing or eliminating violence and wars. It is intriguing to speculate that if we were able to willfully switch dominance from the EBS to the CBS that we could decrease or possibly avoid violence and war.

As pointed out by Michael Shermer in his article "Perpetual Peace: Are democracies less warlike?" in the November, 2014 *Scientific American*, it is rare for democracies, (whose beliefs about governance derive from the CBS) to war against each other. Authoritarian governments, (whose beliefs about governance derive from the EBS) are more belligerent and less compromising, than democracies. The possibility of eliminating violence and wars is predicated on the notion that the EBS is a physical system so that those in whom that system is dominant are more prone to physical violence and war than are those whose "cool-headed," nonviolent,

intellectual CBS is dominant. Thus, although weapons of mass destruction derive from our CBS, the real concern is that those in whom the EBS is dominant, such as authoritarian Iran and North Korea, will put them to use in defense of their security. The EBS provides for physical behavior which serves the needs of animals, whereas, the CBS provides for intellectual behavior, which better serves the needs of modern humans. Physical violence and war result from an emotional fight or flight reaction that originates in the amygdala, located in the brain's limbic system, in response to a threat to security. It is likely that physical violence or war would not occur if there were no EBS. Religious wars result when the EBS is activated by threats to security. ISIS and Islamist fundamentalist terrorists, who react violently to perceived threats to Allah, the source of their security, are brutal, reflecting the use of their EBS as their source of belief. Wars, violence, and brutality, all derive from the EBS. They are consequences of activating the EBS not just from a threat to religious security, but to any threat to perceived security.

Steven Pinker in *The Better Angels of Our Nature* makes a strong case that the world is becoming less violent. In earlier essays I have argued that the decreasing violence may be due to a cultural evolutionary process by which the EBS, which leads to violence, becomes less dominant as the nonviolent CBS gains in dominance, so that the world is becoming more empathetic, humane, and civilized. Violence and war are possibly not inevitable. It may be possible to circumvent violence by shifting dominance from the EBS to the CBS. This is the method taken by Jesus, Gandhi, and Martin Luther King in their nonviolent response to threats to security, and is the method in anger management and conflict resolution, where remaining calm, controlling emotions, and empathetically understanding the standpoint of others shift dominance from the EBS to the CBS.

If, as is claimed in this paper, cultural evolution stems from humans progressively increasing their competence in the use of evidence-based reasoning, which results in decreased

dominance of the EBS, would it not be possible to decrease, or, conceivably, eliminate, violence and war, which derive from the EBS, by teaching the use of evidence-based reasoning? There already exist many programs that teach evidence-based reasoning by teaching critical, scientific, or Socratic thinking to students who range from ten years of age up through college age and beyond, and the development of more programs is ongoing. What needs to be confirmed is whether increased competence in evidence-based reasoning, the only recognized mechanism used by the CBS to determine belief, can be taught by teaching critical thinking, and whether this would then shift dominance away from the EBS and toward the CBS, thereby resulting in behaviors that would not only decrease violence and war, but would increase empathy, tolerance, and the many varieties of human rights, shift beliefs and politics to the left, would eliminate all religious and political placebos, and would decrease sectarianism, tribalism, racism, antisemitism, and authoritarian dictatorships. These changes in belief and behavior could easily be tested for by measuring whether they result from teaching critical thinking. It is exciting to contemplate that if they do, then the widespread teaching of critical thinking would be a practical, but as yet unrecognized, way to promote the already accelerating cultural evolutionary changes and their civilizing advantages. Universally expanding the teaching of critical thinking, throughout America and the world, to the young and the old, could result in the greatest boon, ever, to humanity. The possible benefits to society are so attractive that it would be immoral not to test the hypothesis that teaching critical thinking would, in many ways, make this a better world. It could be a dream come true.