

Book Review

A Kin-selected Explanation of Suicide Bombing

A review of *Soldiers of God: Primal Emotions and Religious Terrorists* by Jay D. Glass, Ph.D. Donnington Press, Corona del Mar, California, 2003.

by

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The appeal of evolutionary theory is that it can explain a broad range of behaviours elegantly and satisfactorily with little need for *ad hoc* rationalizations of untidy deviations from theory. In the hands of a skilful theoretician and writer, even baffling behaviours that would appear to compromise fundamental evolutionary imperatives, such as those of survival and reproduction, can be accommodated to an evolutionary perspective, rendered more comprehensible, and be shown to fit with theory. One such behaviour must surely be the volunteering for suicide missions by young adult humans who will generally not have gained the chance to reproduce by the time their short lives have come to a spectacular end. In his book *Soldiers of God*, Jay D. Glass attempts to bring this behaviour under the lens of theory, using “the facts and logic of science to solve the mystery” (as he puts it) and specifically to bring a perspective informed by “sociobiology¹ [to provide] insights into...the primal origins behind the emotions that motivate us [and presumably especially suicide bombers] to act the way that we do” (p. 17). He fails in this endeavour almost as spectacularly as his subjects are successful theirs; his work is poorly written, theoretically muddled, logically inconsistent, and factually wrong.

The thesis he is trying to set forward is that given a normal distribution of behavioural options, a small minority of—mostly young male—individuals can be induced to engage in acts of aggression that will in their committing probably lead to the perpetrators’ own demises as well. One of the reasons—or perhaps the

main reason according to our author—is that young, low-status males' inbred desire for status can be manipulated by an alpha male, to whom they feel a compelling need to submit and who orders them off to do his own dirty work. With the large conceptual apparatus available to humans, this need to submit to a dominant male can be projected onto a divinity, with all sorts of mayhem ensuing as a consequence, once devotees of that divinity begin imagining what His will may be.

This really does not go too far in providing an understanding of the particular motivations that may propel certain young men on the lip of the curve into rash sneak attacks. Indeed, a credible evolutionary explanation of regularly occurring behaviour patterns (which the various suicidal forms of combat unfortunately are becoming) must show how, regardless of motivation, the behaviour ultimately enhances the reproductive success of the organisms engaging in it or that of their close kin and more crucially of any surviving offspring that they or their kin may leave. Our author is either not interested in or incapable of providing that.

Instead he, a neuroscientist and psychologist, according to the blurb on the back cover of the book, is preoccupied by the emotional states of suicide bombers, claiming that he will look deeply “into the mind [sic]² of religious terrorists” to find out why they commit their acts “in the name of the most virtuous of virtuous men, God” (p. 11)³ and explore “the emotional experiences terrorists will have as a result of committing their acts” (p. 22).⁴ This goes well beyond what theory should attempt. What is more, theory may explain behaviour, but it cannot influence it. Despite that, our author ambitiously claims that he will demonstrate how it can: “as a science based upon facts and logic, a sociobiological answer should help us understand how to alter the conditions that breed individuals capable of such acts” (p. 17).⁵

His concern for the emotions of suicide bombers leads him into a logical bind. For, he seems to think it essential to this argument to establish that suicide bombing is rational behaviour. In order to make that claim, he must distinguish between what he calls “emotional thinking” and logical thinking, citing as illustrations “two extreme cases” (p. 19—20). The first of these, “the battle in our minds between emotional and logical decision making is represented by the disease AIDS.” The second “is the person who commits murder”. These according to the author stem from two primal human motivations⁶ provoking “rational thoughts that lead to decisions which lead to disastrous outcomes.” By the same logic, the motivation to commit an act of terrorism also arises from primal motivations, but the decision to undertake the act is a rational choice.

This tension between emotionally motivated behaviour and rational decision-making is a central theme of the book. Yet, the author cannot seem to keep the distinctions clear, for he directly informs us that humans are “victims of

their own nervous systems, compelled to make decisions and to act in ways driven by these primal motivations” (p. 21). As such, suicide bombing is, he says, a “completely illogical act...another example of self-destructive behavior forced upon people by motivations inherited from their animal ancestors” (p. 23), motivations that force “us to make decisions that in the clear light of unemotional logic would appear bizarre, even to those who commit these acts” (p. 24). In order to resolve this, he later defines the dichotomy as “the two ways humans think: logical and rational” (p. 94), inventing a category that he calls “rational-emotional” in order to accommodate his novel interpretation. By this sleight of hand, he is able to maintain that the “emotions and thoughts of the terrorists...lead them to the “rational” decision to commit suicide and murder in the name of God” (p. 29). Despite that, by the end of the book, he is labelling these rational actors “madmen” (pp. 124 and 133) and “monsters” (p. 144). Once he does that, their behaviours no longer fall under the purview of evolutionary theory, as it is not generally concerned with pathology. In the end, his is a false dichotomy anyway. For, evolutionary theory does not require actors to behave rationally or even to understand their own motivations (imagine forcing such a condition onto explanations of insect behaviour).

Whether suicide bombers, or anyone else, for that matter is motivated to act by emotion or by patient deliberation is hardly the point. Either one could motivate behaviour, and indeed each, as the author is keen to remind us, is “determined by the neurotransmitters and nerve cells of [the brain]. The neurotransmitters and nerve cells whose functional organization and activity is preprogrammed in [the] genes” (p. 29). This not saying much. For the same reason, I just got up from writing this review to fix a cup of coffee. More to the point, it does not reveal much more about the motivations for suicide bombing than to state that the terrorists commit their acts because they happened to think of doing it. Even more troubling is that it does nothing to distinguish the motivations of suicide bombers from those of orchid cultivators. Far from it, the author implies that the compulsion to commit horribly destructive acts is irrepressible, presumably in all of us.

The blueprint for the thoughts and feelings we experience during the course of our lives must...be contained in our genes. These are the thoughts and feelings that drive suicidal terrorists to wreak their havoc. Within our genes is a remembrance of things past, not just from our nearest human ancestors, but also from our nearest animal ancestors. Genes and primal drives are forces of Mother Nature,⁷ just as constant, powerful, and unstoppable in affecting our lives as Her earthquakes and hurricanes (p. 25).

If that is the case, why is suicide bombing not more common than it is? Simple, our author tells us, some people are more inclined toward it than others.

The biological constituents of our brain determine our behaviour...[E]ach of these constituents is distributed according to the normal distribution. Therefore, we must also conclude that the behaviors that are controlled by the brain will be distributed according to the normal distribution as well.

That is why the instinctual traits ...are not driving each one of us to the same degree. However, the bell-shaped curve also says that most of us will feel these needs to about the same degree. Therefore, thank God and Mother Nature with her⁸ principle of standard-biological-variability, not all persons have the extreme needs that lead them to commit acts of suicidal terrorism. Others whose needs are more centered around the average human values can grow up in the same environment and not become vicious killers (p. 34).

I think we might already have deduced something like this without his help. His dressing up this conclusion in references to the bell curve is a crude attempt to put a bit of scientific respectability on what is otherwise and unremarkable observation very clumsily stated. So clumsy is it that the author backs himself into a corner, apparently making a plea for understanding and tolerance of suicide bombers since they, poor things, are simply acting out their natural tendencies.

Just as it is readily accepted that the genes which control height are distributed according the bell-shaped normal distribution, so too must we accept that the variety of sexual behaviours controlled by our genes are also distributed in this way. For those on the extreme ends of the bell, their “nonstereotypical” male or female behaviours should be accepted and valued in just the same way we do for someone 6’10” tall.

These basic principals of genetics apply...as well...[to] the behaviours of religious terrorists [who] are driven by two of the instinctual drives. These drives, no different than⁹ anything else biological¹⁰ are distributed according to the bell-shaped normal distribution (pp. 54-55).

This addled thinking does not bode well for the remainder of the argument, which attempts explaining the conditions under which those so inclined might be compelled to act.

Indeed, it is here that the author's thinking becomes truly bizarre. For, in order to explain the compulsion of some to turn their bodies into walking (or flying) bombs, he concocts a theory of the nature of religious impulses in humans. This he constructs around the quaint notion that early humans were incapable of noticing cause and effect or of cataloguing the regularities of their environments into an organized scheme of reality.

Just imagine if you lived in a world where the logic and discovery of science did not exist and no one knows¹¹ about the solar system. The sun, moon, and stars loomed brightly up there in the sky. Actually, even the concept of sky was equally unknown....The animals and plants, rivers, lakes or oceans, what could they have been about? How could [our distant ancestors] have related to the miracles of birth and death, sickness or health, famine or time-of-plenty? The very maintenance of one's own life from day-to-day [sic]¹² was dependent upon all these powerful and mysterious events. (p. 102)

In this narrative, humans' complete bafflement at the forces of nature will have compelled them to attempt to impose order on chaos with mythology. Whether or not that is true, the premise is wrong. Anyone who has lived longer than a week will begin to notice that the sun surely does rise on schedule every morning; there was no need for humans to wait for science to draw that conclusion for them. Indeed, if early humans had not been capable of that, then later ones could never have invented science in the first place.

Be that as it may, in our author's continuing saga of the development of a theology of suicide bombing, humans assuaged their anxiety produced by the sheer uncertainty of life with animistic pantheisms. To bolster the point, the author compiles a compendium of religious concepts from a variety of ancient and preliterate societies, from the Assyrians to the Aztecs, from the Dakota to the Cree, from the Yoruba to the Norse, listing off the names of their gods to illustrate their hopeless faith in the forces of nature. These he contrasts with the monotheistic religions, which, according to his way of thinking, appeared as a result of humankind's having invented science. Once science came along to explain away the uncertainties of life (the sun does indeed rise every day, the seasons do come more-or-less on schedule, crops will grow), the only anxiety-producing elements remaining in the human environment were other humans, who now "lived shoulder-to-shoulder [sic] in the crowded trading centers of the

fertile crescent.¹³ The teachings of Judaism, Christianity, and Islam were directed at these new anxieties” (p. 107).

In the process of explaining this, the author tosses about a brace of non-sequiturs, one being that the tendency for humans to slaughter each other in the name of their gods must be imprinted in the genes. This, of course, is far from being established. The second is that low-status males, in an attempt to establish their place in a hierarchy, will commit rash acts of blind obedience.

This, then, is the crux of the argument: in the *Hominidae*, especially the chimps, lower status males assuage their anxiety by submission to a dominant male; the human response to anxiety is to transfer their submission to a god and head off to kill in his name. Of course, the dominant male remains in place in human societies to assure that submission to the gods redounds to his own advantage too. Sometimes in history some particularly alpha males show up to command the submission of large groups of lower status males (eventually numbering in the millions) and to show the way to a better world, where every subordinate male fits into the order of things. And that is why suicide bombers do what they do.

It is when the author steps into a discussion of religions, an exercise for which he is remarkably unsuited, that he is on the most perilous of grounds. For, even if his hypothesis were true that the propensity to commit murder in the name of a god is a heritable trait, it beggars credulity to suppose that belief in any particular god or set of gods is more likely to provoke believers to act. Natural selection could be expected to work on the tendency toward belief and the propensity to act murderously on belief; but the monotheistic religions with which the author is particularly concerned (and under which he erroneously classifies Hinduism, p. 106) have not been practiced long enough on the face of the earth for natural selection to have been able to work on them, even were it disposed toward doing so.

What is more, irrespective of the merits of the case for a genetic predisposition to kill in the name of a god, the author gets the facts about his religions hopelessly wrong. Let us confine ourselves to his discussion of Islam, which is the author’s principal concern as well. His assertion that the advent of Islam occasioned the “slaughter of Jews and Christians in the Sixth—Seventh Century” [sic]¹⁴ and that it was spread “westward to Spain and eastward to what is now known¹⁵ as Afghanistan and Pakistan...not by spiritual conversion but by shedding blood—convert or die” (p. 37 & 38) echoes popular misconceptions.

The expansion of Islam out of the Arabian Peninsula in the seventh century AD (not the sixth) was not accompanied by wholesale slaughter. There were, of course, military encounters, some of them with armies composed of Christians, but for the most part, the adherents of other faiths were not ill treated by their Muslim overlords. The Christians of Egypt, for example, welcomed the

Muslims, whose poll tax on non-Muslims imposed a lighter burden on them than had the taxes levied by their distant imperial rulers in Byzantium. What is more, the Muslim conquerors of Egypt paid no attention to the doctrinal differences between the Byzantine Church and the native Coptic Church. As far as the Muslims were concerned, one creed was much the same as the next, and they permitted the Copts to adhere unmolested to a doctrine that the Byzantine Church had considered heresy and had persecuted. Finally, for the first several centuries of their rule, the Muslim elites preferred that the subject peoples of the empire not convert, lest they lay claim to the same privileges accorded to those elites.

When the author returns to this theme later in the book, his tenuous grasp of history becomes glaringly apparent. He places the birth of the prophet Muhammad at AD 570 (more-or-less correctly; the date is not known for certain, but tradition places it then). If he began preaching at the age of forty, as is commonly supposed, then Islam did not even appear until the seventh century, much less begin to expand outside of the Arabian Peninsula. The author tacitly acknowledges this when he mentions that the Muslims did not gain Mecca, the principal city of Arabia, until AD 630. Thenceforth, his dates go awry:

Islam...by 700 AD had displaced much of the Holy Roman Empire, extending as far to the west as Spain and in the East, to what is now Pakistan and Afghanistan [sic] (p, 112).

In fact, Muslim armies first crossed into the Iberian Peninsula in AD 712. The furthest extent of the initial thrust of Muslim military expansion eastward came in 751 when Muslim armies pushed into the western reaches of China. Over the next several centuries, Islam continued to expand further east into India, whence traders carried it on into Indonesia (and others southwards into Africa). The Muslim advance westward (and northward) was quelled by the Franks, not the other way round, in 732. The Frankish Holy Roman Empire did not come into being until 962 and was not even called by that name until several centuries later. The Western Roman Empire had already collapsed in the sixth century and the Eastern Empire persisted until the middle of the fifteenth century, when it was finally overthrown by the Ottoman Turks, not the Arabs. The Greek empire that the author mentions (p. 119) never existed.

When an author gets so many important details wrong, his entire thesis is thrown into doubt. So it is here. He is even wrong, both theoretically and factually, in positing a necessary religious motivation for suicide bombing in the first place. A recent study (Pape, 2003, an expanded version of which has just appeared as a book) demonstrates that of all suicide terrorist attacks committed between the years 1980 and 2001, roughly 40% of them (75 out of 186) were committed by the Tamil Tigers, the leading practitioner of the tactic, whose

philosophy includes elements of Marxism; what is more, even when the attacks are committed by Muslim groups, one third of those attacks have been perpetrated by secularists like the Kurdistan Workers' Party, the Popular Front for the Liberation of Palestine (another Marxist group), and the Al-Aksa Martyrs Brigade. As the author of that study observes, "although religious motives may matter, modern suicide terrorism is not limited to Islamic fundamentalism" (p. 343). It is, on the other hand, a strategy employed by nationalist groups "whose main goal has been to establish or maintain self-determination for their community's homeland by compelling the enemy to withdraw" (p. 344). This, indeed, is the stated goal of terrorist groups, including those who launched the kamikazes who dive-bombed buildings in America.

Where religion does seem to play a role is when the faiths of the opposing groups are different. This has been observed by economist Eli Berman and political scientist David Laitin (forthcoming, p. 10) who also comment that

[S]uicide attackers might well be maximizing a reasonable set of goals. Such goals include performing the ultimate sacrifice to enhance the possibility of reward in the hereafter, or perhaps to improve the lives of their families and compatriots.

According to...rational choice models, there is nothing irrational about a calculated suicide, given either: a) a belief in the hereafter combined with a belief that the suicidal act will be rewarded in the hereafter, or b) altruism towards family or compatriots combined with the belief that the suicidal act will enhance their lives. A given population is likely to hold at least some people who satisfy these conditions.

Altruism may apply to both religious and secular terrorists... In the case of suicide attacks, not only is a high sense of altruism for others required, but probably also an exaggerated belief in the social benefit of a successful attack...the key fact is that only a very small proportion of the population [is needed] (pp. 10 & 11).

These authors appear to have been influenced by evolutionary theory, and, in fact, the framework for incorporating their view of suicide bombing into an evolutionary model has already been assembled. Although he does not apply it to suicide bombing specifically, Steven Pinker in his book *The Blank Slate* (2002) makes much the same argument as *Soldiers of God* about the propensity for violence being encoded into the genes as "part of our design" (as Pinker puts it, p. 316), and he does so more convincingly. A primary reason for this is that Pinker

couches his argument in general terms, thereby allowing for the behaviour in question to fall more comfortably under theory precisely because it does not require *ad hoc* accretions to the theory, such as the implication that Muslim suicide bombers have been especially predisposed to violence by their genes and religion.

Indeed, that proposition has no place in theory, as Pinker deftly counters (quoted here at length partly to illustrate the compelling force of a well written argument):

[T]he entire question of what went wrong (socially or biologically) when a person engages in violence is badly posed....[W]hether a violent mindset is called heroic or pathological often depends on whose ox has been gored. Freedom fighter or terrorist...martyr or kamikaze...these are value judgements, not scientific classifications. I doubt the brains or genes of most of the lauded protagonists would differ from those of their vilified counterparts....Violence is a social and political problem, not just a biological and psychological one. Nonetheless, the phenomena that we call “social” and “political” are not external happenings that mysteriously affect human affairs like sunspots; they are shared understandings among individuals at a given time and place. So one cannot understand violence without a thorough understanding of the human mind (p. 317).

From that perspective, Pinker argues that there are three motivations that commonly spur humans to violence, which he calls (after Hobbes) competition, diffidence (in the original sense of the word “distrust”), and glory (which Pinker re-translates into “honour”). Put even more simply, humans use violence or the threat of violence for gaining resources, for defence of those resources, or for the deterrence of attempts by others to gain or regain those resources. It is not difficult to see how an organism willing to fight for any of these would contribute to the survival of its own kin, even if the individual perished in the attempt at acquiring a resource, deterring another from attempting to acquire it, or defending it against an actual attempt. As Pinker explains it, “if an obstacle stands in the way of something an organism needs, it should neutralize the obstacle by disabling or eliminating it. This includes obstacles that happen to be other human beings—say, ones that are monopolizing desirable land” (p. 319). He goes on to explain that especially in situations occurring outside the rule of law, the credible threat of the use of violence will act to deter incursions against a people or their resources, and among those credible threats is the demonstrated readiness to seek revenge. In the situations in which the human species evolved, those with

inherited proclivities to employ measured violence under certain circumstances like the threat of loss of resources or of annihilation (which in earlier days would have amounted to the same thing) or in defence of kin, would be more likely to survive (or at least their close kin with whom they shared those proclivities would) than would be those who possessed them not.

These principles go a long way toward explaining why young men especially can be induced to go to war, and that once in war, a few of them can be motivated to sacrifice all for their comrades in suicidal frontal assaults upon the enemy. (I suggest that Berman's principle of club good—*vide* <http://dss.ucsd.edu/~elib>—would apply to armies as well as militias.) Young men are the more expendable of the two sexes, the minimal parental investment they donate to offspring being tiny compared to that of women (even if the women only gestate the offspring to term and then abandon them to the care of others, usually relatives). In modern armies, in which recruits are probably not closely related, the humans that make up these armies will act as though they and their comrades were. So too with faiths, creeds, and ethnicities.

What we call “ethnic groups” are very large extended families, and though in a modern ethnic group the family ties are too distant for kin-based altruism to be significant, this was not true of the smaller coalitions in which we evolved. Even today ethnic groups often *perceive* themselves as large families, and the role of ethnic loyalties in group-against-group violence is all too obvious (Pinker, p. 323, his emphasis).

In this light, the phenomenon of suicide bombing can be much more easily understood. Suicide bombers are acting as if they were defending kin, deterring aggression against kin, or exacting revenge for acts of past aggression against kin. The statements that the various groups who carry out these attacks release also state exactly that. In the much smaller societies in which humans evolved, the number of individuals engaging in rash suicidal operations against foes would perforce have been small, but a group harbouring such individuals would have possessed an effective deterrent capacity to dissuade others from aggressing against them or monopolizing resources.

Perhaps without intending it, Pape corroborates this in today's suicide bombers:

Most suicide terrorism is undertaken as a strategic effort toward achieving particular political goals; it is not simply the product of irrational individuals or an expression of fanatic hatred. The main purpose of suicide terrorism is to use the threat of punishment to

coerce a target government to change policy, especially to cause democratic states to withdraw forces from territory terrorists view as their homeland (p. 345).

Pape also points out that democracies are the target not because the terrorists “hate our freedom,” as the argument in its crudest form goes, but because democracies are regarded as being particularly susceptible to this form of coercion (pp. 350—351). This too is stated by the terrorist organizations, apparently with some justification, as suicide campaigns have been successful in their aims about half the time (p. 352).

Clearly, both Pinker and Glass are making the same plea: human behaviour cannot fully be understood without acknowledging and considering the biological imperatives underlying it. The difference between the two, disregarding that one is a far better writer, is that throughout his book, Pinker is attempting to construct a theory of human behaviour that rightly speaks in broad, inclusive terms, accommodating much of the repertoire of behaviours, while in his, Glass appears to be vilifying a particular group of humans. This is where he goes wrong. Evolutionary theory cannot be overly concerned with individual cases or proximate causes (as perhaps economic and political theory can, being evidently better equipped to address them). To the evolutionary theorist, the particular faith to which organisms adhere should be irrelevant.

This is the fundamental difficulty with his book: in broad outline, the author is capable of stating the tenets of theory. It is the particulars that give him so much trouble, and the audacity of his assertions read like a parody of the biological determinism that critics force into the mouths of evolutionary theorists. The book has a certain evangelistic fervour to it, betrayed by its cover, which resembles nothing so much as one of those garish end-times best sellers, and the tendentiousness of the writing seems to conceal some deeper agenda.

What that agenda is becomes clear in the final chapter, where the author preaches the gospel of market fundamentalism as a panacea for terrorism. So here is the author’s true faith revealed at last—at least as dangerous as radical Islam—the practice of which has brought more deaths over the last generation than have all the terrorist attacks in the world combined. But, the author does not seem to be concerned with attacks in other parts of the world—except perhaps where they afflict Israel. Somehow, this does not seem out of character. He is outraged at the terrorist attack against America, and that appears to be his motivation in tacking together his hodgepodge of evolutionary shibboleths in an attempt to explain “why they hate us”.

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Notes

1. In 2003, the year of publication, this author is still using the term sociobiology, which has long since been replaced by terms like evolutionary psychology (Segerstråle, 2000: 317—20), as the discussion revolves around human behaviour, whose origin is embodied in the overly-large human brain.
2. The book is rife with such lack of concordance between nouns or between pronouns, and their antecedents. For example, "someone with an authoritarian, judgmental, and controlling personality, depending upon the environment in which they were raised could become a school teacher or a policeman" (p. 15—16); "Animal behaviorists describe an animal...as looking chipper and feeling good about themselves" (p. 51); "for children it is necessary that they practice these...skills that will be so necessary for their survival as an adult" (p. 57); "if we cannot be the richest and most powerful, we sure [sic] can become an expert at [some hobby]" (p. 80); "These two biochemically very distinct personality types create two very distinct rationales as to the way one should lead their life" (p. 93); "Everyone wanted to feel good about themselves" (p. 114); "If one had served Allah with sufficient devotion they would go to heaven" (p. 127). He also confuses the use of the apostrophe: "thanks to genetics which retain most of the specie's traits" (p. 33); "The analogy between prophet's Jesus, Moses, and Muhammad" (p. 86); "The animal's respond instinctively" (p. 90). As we go along, I will flag more of the author's many solecisms and literary offences.
3. Does this mean that in the author's conception God is a man? Is this, then, an unwitting betrayal of his own religious belief, if indeed it is his, that God incarnated himself as a man and from that point He was ever afterwards both spirit and flesh?
4. Suicide bombers cannot continue to experience emotion "as a result of committing their acts," as they would be dead if the acts were successful.
5. As written, this looks as if the sociobiological answer is the science, whereas it is sociobiology itself that is. This particular lapse could have been corrected with a few flourishes of the editor's pen. As could another, in which, discussing submissive displays in chimps (which he

repeatedly and erroneously identifies as our nearest animal ancestors, p. 14, p. 73, p. 101), the author makes it appear that it is a dominant male who assumes a position of lordosis—something a dominant male would never do: “To show allegiance, all a chimp had to do was to display the universal sign of submission to the dominant male. By simply getting down on his knees and presenting himself in such a submissive posture, the dominant male would give a reciprocal sign showing his acceptance of the chimp as one of his parishioners” (p. 75). [Parishioners!?] Yet another becomes hopelessly entangled: “Once personified as Deities, they could show submission and ask the Gods to show kindness toward them” (p. 99). This makes it look as if they who are showing submission and petitioning the kindness of the gods have become personified as deities. Incidentally, there is no need to capitalize nouns, a pattern of error throughout the book; he is not writing German.

6. As he puts it, in what is surely a debatable assertion, “Aids is about sex. Murder is about dominance...two of the most important motivations behind human behavior.” The expository device “x is about” is characteristic of the colloquial tone of the entire book, cf., “Both careers are about a position of authority where one controls people and passes judgment upon them. Professional football is all about committing excessive violence against another person” (p. 16). Another is a repeated allusion to betting, as in “A belief in God and killing is his name...are a good bet as having their origins in our genes” (p. 49), or “anxiety [is] a sure bet as part of our human emotional experience that has its origins in our genes” (p. 72), or again, “I would bet that most terrorists, martyrs, born-again Christians, and other such “fundamentalists” are not people on the top of their game” (p. 89). Note also that, the colloquialism aside, *people at the top of their games*, would be more correct (unless they are all playing the same game). Other colloquialisms he employs are for example “Scientists known as animal behaviorists [more properly *ethologists*]...reaching conclusions about what drives *critters* to act the way they do” (p. 24); “when our genes were being *set in stone*, it was *a jungle out there—the survival of the fittest*” (p. 70, three in a row!); “If you didn’t show allegiance to him, he would *beat the crap out of you* and drive you out of his territory” (pp. 73—74); “*Like a fly to shit*, Mohammed found a home, where, through affiliation with an earthly all-powerful dominant male,...[he]became somebody and felt good about himself” (p. 136).
7. The author hardly ever uses the word ‘nature’ without the anthropomorphizing epithet ‘mother’, see pp. 53, 55, 56, 57, 66, 67, 69, 71, 73, 74, 137, and 147. I may have missed a few. Inexplicably, in a book that attempts to provide evolutionary explanations of behaviour, the author is strangely silent about natural selection. Perhaps this is a good thing; otherwise, readers may have found their sensibilities assaulted by such fearsome devises as Mother Nature’s selection!
8. Here he places the pronoun in lower case; above he capitalizes it.
9. That is, “no different *from*...”
10. A comma should close this phrase.
11. This is a violation of the sequence of tenses: “no one *knew* about the solar system”
12. This should only be hyphenated if it is used as an adjective, viz: day-to-day life.
13. Referring to a specific geographical area, Fertile Crescent should be capitalized.
14. There is no need to capitalize sixth, seventh, or century, which should be in the plural here.
15. Why does he not say, “what is now known as Spain”? The modern country of Spain did not exist at the time either.