Darwinism and Meaning

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Abstract

Darwinism presents a paradox. It discredits the notion that one's life has any intrinsic meaning, yet it predicts that we are designed by Darwinian natural selection to generally insist that it must—and so necessarily designed to misunderstand and doubt Darwinism. The implications of this paradox are explored here, including the question of where then does the Darwinist find meaning in life? The main source, it is proposed, is from cognitive domains for meaning inherited from sentient ancestors—domains that reveal our evolved human nature as the fool that it is: given to distractions and delusions of many kinds, designed by natural selection primarily for one essential purpose—to allay our instinctual fear of failed legacy, rooted in our uniquely human awareness that we are not immortal. Darwinism, however, also teaches that genuine legacy is a fate enjoyed only by individual genes. Accordingly, as argued here, those genes with the grandest legacy—and hence rampant within us—are of two types: "legacy-drive" genes delude us into thinking that the legacy can be individually and personally ours; and "leisure-drive" genes distract us from the agonizing truth that it can never be. The most rudimental delusion of legacy is the perception of offspring as vehicles for memetic legacy—the transmission of resident memes from one's mind to the minds and behaviors of offspring—thus also ensuring genetic legacy: the transmission of resident genes, including importantly, genes inherited from ancestors that influence both legacy and leisure drives. Today, legacy- and leisure-drive genes reveal their phenotypes across a wide range of human affairs, and together with the phenotypes of survival- and sex-drive genes, they provide a foundation for a novel view of the Darwinian roots of cultural evolution.

Keywords

culture, delusions, distractions, human nature, immortality, legacy, leisure, memes, religion

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I see many people die because they judge that life is not worth living. I see others paradoxically getting killed for the ideas or illusions that give them a reason for living (what is called a reason for living is also an excellent reason for dying). I therefore conclude that the meaning of life is the most urgent of questions.

— Camus ([1942] 1955)

In *The Blind Watchmaker*, Dawkins (1986: 316) remarks, with apparent surprise or uncertainty, the following: "It is almost as if the human brain were specifically designed to misunderstand Darwinism, and to find it hard to believe." Yet, as examined below, one can argue—from first principles of Darwinism itself, and therefore unsurprisingly—that the human mind is indeed generally designed to misunderstand and disbelieve the very process that designed it to do so: Darwinian natural selection. The limitations of the human brain, therefore, may be entitled to more patience and less exasperation, particularly from Darwinists.

The problem begins with the fact that humans are routinely very fond of feeling a deep sense of purpose or "meaning" in life. And the problem unfolds from the fact that Darwinism summarily dismantles the conceptual foundations for the oldest and the most widely consulted (and still thriving) cultural institution for finding it—religion. The conventional Darwinian position is exemplified by Simpson (1949: 344): "Man is the result of a purposeless and materialistic process that did not have him in mind. He was not planned. He is a state of matter, a form of life . . . akin . . . to all of life and indeed to all that is material." "In short," as Barash (2000: 1014) wrote half a century later, "there is no intrinsic, evolutionary meaning to being alive. We simply are. And so are our genes. Indeed, we *are* because of our genes, which *are* for no other reason than that their antecedents have avoided being eliminated." Accordingly, some of the most celebrated contemporary Darwinists—pulling no punches—refer to religion with nothing but contempt (Dawkins 2006), even calling its practice a mental illness (Dawkins 1989: 330).

The more urgent question, therefore, is not the meaning of life, or whether it even has any intrinsic meaning, but rather, why are humans—including Darwinists, who apparently should know better—so readily compelled to seek it impulsively? Answers can be found in the "universal acid" (Dennett 1995) of Darwinism itself.

Pleasure-Based Meaning

We must, therefore, pursue the things that make for happiness, seeing that when happiness is present, we have everything; but when it is absent, we do everything to possess it. (Epicurus, quoted from O'Connor 1993: 61)

The above question can be addressed on one level in terms of "enjoying life to the fullest"—or in other words, to "flourish." Typically, this is associated with the accumulation of pleasure rewards, pursued for their own sake (i.e., the purpose is in the pleasure), and triggered in most if not in all cases by actions related in one way or another to those that must have rewarded the reproductive success of our ancestors. The most conspicuous examples include the sensual pleasures, like the taste of nutritious foods (promoting survival), and the enjoyment of sex (promoting reproduction). Such pleasure pursuits can be organized as cultural norms under such labels as "hedonism" and "playboy" (and also under labels for abuse, such as obesity, pedophilia, and rape). Other kinds of pleasure sources may be more emotional (Nettle 2005; Barash 2007), involving things like romantic love, parental care, and love for family (connected obviously with sex and gene transmission), or striving for and attaining an edge over a rival (promoting success in competition for limited resources, including mates)—again because, one can reasonably surmise that these kinds of pursuits promoted the fitness of our ancestors, and therefore so did finding pleasure in them. The same would apply in seeking opportunities to cultivate social alliances, or to exercise philanthropic, virtuous, empathic, or moral behavior (see, e.g., Murphy 1982; Krebs 2008; Keltner 2009). As Chardin (1964: 204) wrote: "Evolution, in rebounding reflectively upon itself, acquires morality for the purpose of its further advance."

Some forms of pleasure-based meaning might be intellectual—e.g., organized under cultural institution labels like "the academy," or "the elite." For the Darwinist, for example, particular sources of pleasure or happiness are likely to be associated with a sense of finding—through the "lens" of Darwinism—a greater depth of understanding of nature. This is the sense of meaning in life ascribed to in Dawkins' (1998: x) *Unweaving the Rainbow*, based on "the sense of wonder in science," and specifically the wonder, both incited and deciphered, by Darwinism. But the same kind of intellectual pleasure from "wonder" was presumably associated with any cognitive domain that provided, for our ancestors, a perception of having found answers to pressing questions about life and nature—including questions that incited fear, and cognitive domains connected with spiritualism extending back to the earliest forms of animism and shamanism. For our distant ancestors, solving nature's challenges and dilemmas—e.g., guiding the tribe through unknown or hostile territory, averting a new predator found there, discovering how to effectively hunt a new prey, or discerning what new-found plants are edible—conceivably triggered a cognitive "pleasure module." Pleasure was associated with calming fears of the unknown and bolstering self-esteem, thus fueling motivation to discover additional practical solutions to the mysteries of life and nature, and hence success in survival and reproduction. For some of the more puzzling cases, the mind's restless curiosity was presumably settled satisfactorily by deferring instead to spiritualism or deity (Feierman 2009). These "solution"

achievements undoubtedly also yielded advantages associated with elevated social status, including greater attractiveness to mates. Both consequences would have rewarded reproductive success. Also, therefore, would the restless curiosity in the first place.

Accordingly, a child-like sense of wonder and discovery about life and nature, instilled and satisfied today for adults through activities like science, including Darwinism, just feels good (Barzun 1964). It's fun, for the same reason that sex is (Diamond 1997), because by associating it with pleasure, our ancestors' genes—including those involved in associating it with pleasure—were propelled into future generations. As Eagleton (2007) observes, referring to the cosmos: "Its underlying laws reveal a beauty, a symmetry and economy which are capable of moving scientists to tears." Hence, notes Stamos (2008: 229), "We find in scientists such as Charles Darwin and Carl Sagan enormously meaningful and stimulating lives, and they each knew it."

Remarkably (and thankfully), however, incomplete or only meager success in the delivery of these pleasures and joys of life—and hence the often-denied tears of joy in the eyes of most scientists—may normally be of little consequence. As Nettle (2005: 168) argues:

> Evolution's purposes are served if it can trick us into working for things that are good for our fitness. It can do this by making us believe that those things bring happiness, and that happiness is what we want. It doesn't have to actually deliver the happiness in the end. The idea of happiness has done its job if it has kept us trying. In other words, evolution hasn't set us up for the attainment of happiness, merely its pursuit. . . . We don't necessarily learn from experience that this is a trick, because we are not necessarily designed to do so.

This is because any fitness penalty from being fooled in the pursuit of happiness (if there is any at all) is outweighed by the fitness rewards that result from being susceptible to it. Foolishness, therefore, abounds. This is like the mature and faithful dog that dutifully obeys its master's command, and never learns (because it is not so designed) that it's just a trick—that the food treat reward received from its master's hand during training in earlier years, is never again forthcoming.

Legacy-Based Meaning

Humans, however, routinely seek more than just a life lived to the fullest. They commonly strive for a "deeper" meaning in life—a meaning connected with something much more profound and ultimate than just a summation of transient pleasures. Meaning here is based on a sense of intrinsic and imperishable self-worth for one's mind. It includes the kind of meaning that makes life not just worth living but also for some—as Camus ([1942] 1955) distinguishes above in *The Myth of Sisyphus*—worth dying for. As Dawkins (1995: 96) exclaims, "We humans have purpose on the brain." Echoing Murphy (1982), "This speaks," says Stamos (2008: 227), "to a human instinct for the meaning of life, an instinct that cannot be satisfied in just any way."

And herein, I contend, lies a paradox of Darwinism: While Darwinism, like existentialism (Barash 2000), discredits the notion that one's existence has any grand, cosmic, or intrinsic purpose (at least not in any sense that cannot also be applied in principle to a fly), at the same time, the obsession with this notion by the human mind (but not by flies) must itself certainly be rooted in the effects of Darwinian natural selection. Evidence lies in the "ubiquity of the question of the meaning of life," as Stamos (2008: 227) illustrates:

> It recurs in religion after religion and throughout the history of philosophy, existentialists make a living out of it, scientists feel the need to address it in one way or another, novels and movies torture themselves over it, and it crops up again and again at the top of public opinion polls and statistical surveys.

One way to define this deeper sense of purpose and self-worth in life, beyond just "pleasure-based" meaning, is in terms of *legacy*. Humans think and behave in ways that can be interpreted as revealing an intrinsic drive to extend the presence, self-esteem, or impact of one's life beyond oneself—to seek assurance that one's existence is (and always will be) more significant than just the day-to-day routine of being alive. The latter, of course, is good enough for the interests of one's genes, provided that it involves staying alive long enough to have sex, preferably plenty of it. This is essentially all that matters for fitness in other species. Accomplishing this well for our species however—and for our sentient ancestors in particular—generally required more than this: It required a mind structured by a complex array of compulsions and motivations for transcendence. Stamos (2008) draws attention to this notion from Nozick (1981: 594): "Attempts to find meaning in life seek to transcend the limits of an individual life. The narrower the limits of a life, the less meaningful it is." As the saying goes, we want to "make a difference." According to Austrian psychologist Alfred Adler (1870–1937), the "supreme law" of life is that "the sense of worth of the self shall not be allowed to be diminished" (quoted from Ansbacher 1985: 203). Forrest (2003: 875) writes:

> The purpose of human existence implies a future with a task to be accomplished or a plan to be fulfilled—but there is no evidence that human beings exist in order to accomplish a task or in order to fulfill a plan determined by anyone but ourselves.

The critical question here, of course, is, "Why on earth does all of this matter to us so much?"

An explanation begins with the defining feature of the human condition: the "conundrum of consciousness." Among other things (see, e.g., Parker 1997; Barash 2007; Stamos 2008; Denton et al. 2009), the human fitness advantage of

consciousness is associated with a capacity (the likes of which apparently pales in all other species) to self-reflect on one's own past, and anticipate and plan for one's own future, including importantly, in the long term. When natural selection gave us this, therefore, it necessarily allowed us to foresee our own death; we became acutely aware that we are not immortal. This may have been all well and fine, but *natural selection was not finished*: It also made us deeply troubled by this awareness, and more specifically, by the awareness of our severely limited capacity to "leave something of oneself" for the future. In other words, selection gave us not so much a fear of inevitable mortality per se, but rather, a fear of what inevitable mortality denies: legacy, i.e., the legacy of one's conscious mind, represented by the cherished memes—one's personal ideas, beliefs, values, and sense of self-worth—residing there.

Prescriptions associated with pleasure-based meaning like *carpe diem* or "live in the moment" (something that apparently other animals do well, as did presumably our distant hunter-gatherer ancestors), therefore, commonly have limited success for the modern human mind because it cannot live for long in the present (Killingsworth and Gilbert 2010). Our evolved consciousness (except when subdued by dreamless sleep or meditation therapy) reminds us relentlessly that the present, effectively, does not really exist, except as merely a fleeting transition between the past and the future. The human mind is generally designed to focus instead on the continuum of time—as the agency of transcendence. Accordingly, the mind is largely preoccupied with reminiscence or regret about yesterday, and anticipation or worry about tomorrow. Most importantly, we need "something to look forward to." *The critical point is this*: Natural selection must be responsible here, as "inference to the best explanation," for we know that practically no human with sanity responds with indifference or joy to the impermanence of one's life.

According to one explanation, fear that one's life is not immortal may be just an annoying by-product of our awareness of it (Becker 1973), combined with our intrinsic general apprehension and fear of the unknown (mortality in this case). A general fear of the unknown probably rewarded the reproductive success of our distant ancestors, even though much of the time it turned out to be unwarranted, e.g., fear of a dark cave or wooded thicket that turned out to be free of danger (Wolpert 2006). In other words, the fitness cost (if any) of being wrong much—or even most—of the time (about the cave or thicket) was negligible compared to the fitness benefit of being right, even just once.

An equally plausible but more intriguing explanation, in my view, is that by responding with anguish and fear (instead of indifference or joy) to the knowledge that immortality does not exist, our predecessors were more likely to become ancestors—i.e., the *specific* fear of mortality is not simply a byproduct of the *general* "fear of the unknown." And here, we may propose, is a prime example of the "universal acid" of Darwinism at work: Just as fear of an imagined (usually absent) danger was, on average, a good thing for the fitness of our ancestors, the same was true for anxiety connected with awareness of inevitable mortality and the prospect of failed legacy. (And ironically, although one's life is what one fears most to lose, when lost [as it turns out], one never misses it (Bierce 1911)). But the fitness-rewarding mechanism in the latter case is less obvious: Anxiety, about knowing there is no immortality, rewarded fitness because it was routinely accompanied by cognitive attraction to something that both ameliorated the anxiety, *and at the same time*, promoted reproductive success directly: *cognitive attraction to offspring production*. Striking evidence is seen in recent studies showing that mortality priming evokes greater desire for offspring—or attraction to the idea of producing offspring (Wisman and Goldenberg 2005; Fritsche et al. 2007; Mathews and Sear 2008; Zhou et al. 2008, 2009). For our sentient ancestors, offspring must have represented apparently malleable and controllable vehicles for one's memetic legacy, i.e., the transmission of self-identifying "memes"—personal values, beliefs, and perceptions of self-worth—residing in the minds and behaviors of a parent, to the future, through the minds and behaviors of offspring. Importantly, it is conceivable (probable in fact), that our ancestors evolved an inconsequential awareness that immortality does not exist, long before they evolved intrinsic fear in response to that awareness, together with intrinsic capacity for amelioration of that fear through perceptions of meme transmission through offspring.

Parenthood as Legacy

Today, attraction to memetic legacy transmission is conspicuous in the popular culture of "hyper-parenting" (Honore 2008)—linked to obsession with ego and status fulfilled through the achievements and successes of one's children (Marano 2005). Evidence of the same can be seen extending back to the earliest historical records: "Sons' sons are the crown of old men" (King Solomon, Hebrew *Book of Proverbs* 17:6). Other animals, like humans, have instinctual parental care behaviors, but only humans plan for (conspire to have) offspring, and then, importantly, *seek pride in them*. For parents, a universally frequent topic of conversation in social settings involves boasting—while taking care not to appear too obviously doing so—about the comparative accomplishments of their offspring. Offspring, therefore, ameliorated anxiety in our ancestors by evoking the perception of *nevertheless* leaving (within offspring) something of oneself—one's mind, and its symbols of "self"—for the future, despite knowing that one's body is perishable. "Children sweeten labours, but they make misfortunes more bitter: they increase the cares of life, but they mitigate the remembrance of death" (Bacon 1985: 79).

Although it may seem counterintuitive, anxiety here begets fitness. By having essentially "hard (or soft)-wired" anxiety over the prospect of failed legacy, our predecessors who became ancestors were those preoccupied with not just (as for other animals) surviving and having sex, but also (unlike other animals) preoccupied with becoming parents. The critical evolutionary consequence, of course, is that this drive for memetic legacy necessarily also ensures genetic legacy—transmission of parent's resident genes to the future, including importantly those genes that promote "legacy drive" (Aarssen and Altman 2006). Legacy drive for males, one might predict, because of paternity uncertainty, should be particularly intense—thus providing insight for interpreting the long history of patriarchy in human culture (Aarssen 2007). Indeed, recent evidence indicates that males, generally more than females, desire offspring following mortality priming (Wisman and Goldenberg 2005; Mathews and Sear 2008). One might also wonder whether "honor killings" of daughters (almost exclusively under male control) (Newell 2000) could be at least partially accounted for as a radical, hyper-extreme (and abhorrent) product of selection for strong legacy drive in males—manifested as a paranoid, psychotic father's response to his daughter as a "failed vehicle" for his memetic legacy transmission.

Note, however, to paraphrase Nettle (2005) that (as for happiness) evolution hasn't set us up for the literal attainment of meaning through legacy—merely its pursuit. It doesn't have to actually deliver the meaning in the end. The idea of meaning through legacy has done its job if it keeps us trying. And we do: "How sharper than a serpent's tooth it is to have a thankless child!" (Shakespeare, *King Lear*). Yet, even when repeatedly frustrated and anguished by disappointment in a child's nature or achievements, it is the rare parent who completely gives up the hope of one day finding meaning from the child's life—or from the life of another through an additional pregnancy (and importantly thus, conferring additional transmission of "legacy-drive" genes). (In the meantime, for parents waiting with hope—and also for people who are childless—several other modern cultural domains for memetic legacy, examined below, often attract one's attention, and for some, end up competing with and displacing attraction to legacy through offspring.) The remarkable trick of evolution here is not just that it makes us believe that memetic legacy brings meaning, and that meaning is what we want; it also tricks us to keep trying by making us believe that there is *meaning even in the trying—and even if it is frustrating*. Again, Camus ([1942] 1955) from *The Myth of Sisyphus* enlightens: "The struggle itself toward the heights is enough to fill a man's heart. One must imagine Sisyphus happy."

The absurdity in the above dilemma for parents, therefore, is that, like Sisyphus, they are normally set up for failure from the start (see also Lyubomirsky and Boehm 2010; Eibach and Mock 2011). Their vision of legacy through meme transmission to offspring is largely a delusion, but importantly, the consequence—gene transmission—is not. This is because the children of the past who left the most descendants were not those dutifully committed to providing a meaningful life for their parents. Instead, they were those who boldly searched for and discovered their own personal domain for meaning through legacy—as "legacy-drive" genes would dictate. Interestingly, this effect of natural selection accounts not just for stereotypic teenage rebellion but also accounts for disheartening evidence—for many (or most?) parents—indicating that despite their best efforts to mold and manipulate copies of themselves in the minds and behaviors of their own children, parents routinely end up playing a relatively minor role in affecting the features of their children's adult personalities (Harris 1998). Except when rigidly indoctrinated (and especially collectively so), e.g., by religious institutions, commonly the child's mind throughout youth is instead more significantly influenced by memes from the prevailing and evolving peer culture (Harris 1998). And so it should be, as Darwinism would predict, as it is from within emerging cultures—not from within outdated and dwindling cultures of ancestral generations—that the adult offspring must be equipped to find success in mating, and hence success for both memetic and genetic legacy—including genetic legacy for their parents.

Religion as Legacy

> Like billowing clouds, like the incessant gurgle of the brook, the longing of the soul can never be stilled. It is this longing with which holy persons seek their work from God. (Hildegard of Bingen in Von Bingen 1983: 70)

The "meaning from struggle" for Sisyphus is also evident in religion, as illustrated in a line from Robert Browning's poem, "Andrea del Sarto" (1855): "Ah, but a man's reach should exceed his grasp—or what's a heaven for?" If our intrinsic legacy drive is so powerful that it keeps us trying, with "hearts filled," even for a legacy that is evidently out of reach, it is predictable that the human mind should be easily preoccupied by attraction and susceptibility to various delusions—like religion—that successfully deceive one into believing that it is possible to "leave something of oneself" for the future. In the case of religions (at least the most popular ones), this delusory memetic legacy is represented, of course, by the idea (meme) of eternal life (legacy) through the soul. Hildegard's "longing of the soul" is really the longing of the conscious mind. As Kaufmann (1958: 354) put it: "Man is the ape that wants to be a god."

The essential and reasonable assumption here, of course, is that our predecessors who generally had greater freedom from the anguishing prospect of failed legacy—e.g., freedom bolstered by delusional legacy through religious faith or

parenthood, *or both together* as linked imperatives associated with the world's most successful religions—were more likely to become ancestors. The pivotal twist on this, however, is that freedom from anguish could not be provided by losing one's susceptibility to it, because the latter, as argued above, is itself strongly favored by natural selection, even in spite of its grave potential byproduct—susceptibility to suicidal depression, which lies at the core of the question of whether or not life is worth living (Camus [1942] 1955). According to this line of reasoning, therefore, selection that favored an intrinsic legacy drive followed directly and quickly on the heels of selection that favored an intrinsic anxiety from knowing that we have no capacity for immortality (Aarssen 2007). Fearing that one's body is not immortal, therefore, rather than a "biologically detrimental" byproduct (trade-off) of self-awareness (Dobzhansky 1967: 69), turns out to be in the best interests of one's genes—a good example of "Orgel's rule": "Evolution is cleverer than you are" (Dennett 1995: 74).

The intriguing implication is that meaning in life is fundamentally connected with our response to this fear, and so without the fear in the first place, the "meaning of life" itself would be a meaningless concept. In other words, without awareness of inevitable death, there would have been nothing cognitively "special" about life for our ancestors. As for other animals, their behaviors would reflect value in being alive, but only in terms of instinctual utilitarian motivations, e.g., to search for food in the face of hunger or starvation risk, to flee or defend from a predator or murderer, or to fight with a rival in order to secure resources needed to survive and prosper—all with the critical but unconscious "goal," essentially programmed by genes, of staying alive long enough to mate successfully, so that those genes can be sexually transmitted (preferably in abundance) to the next generation. Any perception of meaning for one's existence that is grander than this, necessarily involves cognitive response—e.g., denial (Becker 1973)—to the awareness that one is not immortal. This, of course, has not escaped the notice of philosophers, with an abundant literature on the "meaning of life" topic (see, e.g., the review by Stamos 2008), but Darwinism provides inference to the best explanation for why: This cognitive response—fear and anguish from knowing there is no immortality, combined with delusional belief in amelioration through achievement of memetic legacy—actually propelled copies of our ancestors' genes into us.

Unfortunately, however, the question of how much anguish is optimal for fitness remains (probably forever) unanswerable; fitness is limited if anguish is too weak, but also if it is too crippling. The same is apparently true for the effects of adverse life experiences on well-being and life satisfaction; a moderate amount (not too little, not too much) is best (Seery et al. 2010). Recent analyses have also indicated that more creative and accomplished individuals tend to be more troubled, on average, with disorders like depression (Andrews and Thompson 2009; Lehrer 2010). Do these remarkable accomplishments represent a coping strategy motivated by strong intrinsic legacy drive? The unpredictability and variability for optimal adversity, and optimal anguish from it, are undoubtedly of central importance in keeping evangelists, psychiatrists, pharmaceutical companies, distilleries, and drug dealers in business—not to mention the businesses of many other cultural institutions (discussed below) that exist primarily because they deliver a wide variety of remedies for the conundrum of consciousness, in the form of distractions and delusional alternatives to religion.

Paradoxically, therefore, although strongly disparaged by some Darwinists (Dawkins 2006), religion can also be (and is) interpreted by Darwinists as a cultural product of natural selection. Interpretations of evolutionary roots for religion have been explored in over a dozen books published within just the past decade (Boyer 2001; Atran 2002; Wilson 2003; Hamer 2004; Pyysiäinen 2004; Shermer 2004; Wolpert 2006; Dennett 2007; Bulbulia et al. 2008; Steadman and Palmer 2008; Feierman 2009; Voland and Schiefenhövel 2009; Wade 2009; Rossano 2010; Wright 2010). This startling barrage, I think, points to a pressing concern among Darwinists, that religion continues to have a powerful hold on contemporary culture, but at the same time points to a kind of jubilation in the "universal acid" of Darwinism. Connecting religion to biology, however, is not new: "Religion, . . . can be shown to be intrinsically although indirectly connected with man's fundamental, that is, biological, needs. Like magic it comes from the curse of forethought and imagination, which fall on man once he rises above brute animal nature" (Malinowsky 1931: 64). The old (and still continuing) debates between evolution and creationism turn out to be to a significant extent misguided: Creationism is not in conflict with evolution—it is a product of it.

In a very important sense, therefore, there is no reason that a Darwinist's disdain for religion should be any more severe than disdain for parasitism; each has been a cause of human hardship and death, but evolution has given us both. The historical "negatives" of religion (e.g., atrocities from religious wars), therefore, should be no more puzzling to explain than the tragic human history of pathogen-borne diseases. Because each religion defines a distinct and essential prescription for legacy, followers feel insecure and threatened (naturally evoked by the intrinsic fear of failed legacy) when a conflicting prescription associated with a different religion enjoys growing cultural popularity, thus raising worrisome doubts about the integrity of one's own religion (or about religiosity itself).

Religiosity, compared with parasitism, however, undoubtedly has had a more positive impact on human fitness. Religions have generated several memes that foster a false, yet in general, remarkably effective basis (a placebo) for maintaining

a "reason to live," despite frequent tugs of doubt from one's skeptical consciousness. These include, for example, through prayer, delusions for comfort and relief from pain, grief, and suffering, and delusions for hope in a better future (in heaven) when faced with impoverishment, oppression, and injustice. From an evolutionary perspective, we can surmise that these kinds of delusional assurances frequently must have been crucial for promoting the fitness of our ancestors. By delivering these placebos, as well as calming fears of failed legacy, religion would have (then as now) bolstered enough motivation to embrace life for a critical minimum period of time, and importantly *at least throughout the juvenile and early fertile years of young adulthood*—sufficient time to achieve at least some successful fecundity (gene transmission) before the latter had a chance to become compromised by the angst from life's inevitable tendency to accumulate adversities, amplified along the way by a persistent undercurrent of growing despair from the knowledge that mortality necessarily draws ever nearer.

"Mortality anxiety buffers" (Greenberg et al. 1997), both secular and religious, are also interpreted in social psychology ("terror management" theory) in terms of efforts (in response to "mortality salience") aimed at validating one's cultural worldview and encouraging self-esteem. For the Darwinian-minded, however, the underlying interpretation here—as inference to the best explanation—is that our human universal concern for self-esteem, including connection with affirmation of one's cultural worldview, is essentially programmed in our genes because the same genes motivated behaviors in our ancestors that propelled multiple copies of those genes into their descendents alive today. It seems probable, therefore, that delusions of memetic legacy, like religion (but also from other domains, as discussed below), are/have been essential for abating the intrinsically anxious human obsession for a sense of meaning in life, thus rewarding the reproductive success of our ancestors by averting the relentless efforts of our insightful consciousness to push doubt (about the meaning of life) to the surface.

Accordingly, if an effective religion is one that inspires intrinsic purpose or meaning (and it surely is), then despite the origin of religiosity from the purposeless action of natural selection, any successful religion must necessarily derogate the very process responsible for its origin. More generally, as recent research illustrates, most people (religious or otherwise) are routinely inclined to favor or believe "experts" who take positions consistent with one's own cultural worldview, and to doubt those with conflicting positions (Kahan et al. 2011). However, this is not a new discovery about human nature:

> The masses have never thirsted after truth. They turn aside from evidence that is not to their taste, preferring to deify error, if error seduces them. Whoever can supply them with illusions is easily their master; whoever attempts to destroy their illusions is always their victim. (Le Bon [1896] 2001: 64)

Rather than contempt, therefore, religiosity—like other features of human nature that illustrate how genes have influenced us to be (e.g., Grinde 2002; Nelson 2007; Stamos 2008; Naffine 2009; Runciman 2009)—should incite fascination and affirmation for the Darwinist through witnessing the remarkable reach of the Darwinian paradigm unfolding across virtually every domain of human affairs.

Confronting Hard-Core Darwinism

Religious or not, it is next to impossible to avoid the occasional cold, hard, light of reason, and fail to grasp that in a few short years, every one of us alive now, children and all, will be dead—"food for worms," as Becker (1973) laments. And although some alive then might know that we once existed, none of them will care. Ask anyone if they know anything about their great-great-grandparents, and few will know even where their remains are buried, let alone their names or what they were like. Dawkins offers the following interesting introspection in this regard—one that smacks of an intrinsic attraction to legacy:

> You might think that each generation of children, knowing their parents as well as most children do, would listen to their detailed reminiscences and relay them to the next generation. Five generations on, a voluminous oral tradition would, one might think, have survived. I remember my four grandparents clearly, but of my eight great-grandparents I know a handful of fragmentary anecdotes. One great-grandfather habitually sang a certain nonsense rhyme (which I can sing), but only while lacing his boots. Another was greedy for cream, and would knock the chess board over when losing. A third was a country doctor. That is about my limit. How have eight entire lives been so reduced? How, when the chain of informants connecting us back to the eyewitness seems so short, and human conversation so rich, could all those thousands of personal details that made up the lifetimes of eight human individuals be so fast forgotten? (2004: 17)

Apparently, it is in the interests of one's genes to be much more concerned about one's own legacy of "self" than about being vehicles of legacy for one's ancestors. Nevertheless, our distant ancestors, of course, also were fixed on the same priority, and so we have failed them miserably in terms of meme transmission. Virtually nothing of their personal identities remains in us (or anywhere). We carry only some of their genes, copies of which also reside broadly scattered, and recombined in several other unknown and distantly related descendants—individuals that we will never meet, and have no particular desire to do so. Similarly, except for a miniscule proportion of hyper-famous individuals, nothing that is uniquely "self" in anyone alive today will be recognizable in future generations—despite that one is essentially programmed by genes to anticipate it relentlessly for oneself. One never learns that it's just a trick, because learning this is not in the best interests of one's genes; being fooled is.

Sadly then (or just remarkably, depending on one's point of view), only our individual genes (and only a subset of these) are assured of any genuine legacy—and the most "selfish" of these genes are those that have tricked us into thinking that *their* legacies can also be *our* personal "self" legacies. The hobby of genealogy—tracing the identities of one's ancestors—therefore, seems at first to be a successful vehicle for the memetic legacy of ancestors. But it is really just a remedy for the anxiety of one's own prospect of failed legacy, fueled by a silly, self-serving anticipation that our descendents (hopefully all of them) will also carry on the same hobby about us—including by erecting and viewing (hopefully frequently and admiringly) monuments with our names on them perched over our remains in a cemetery somewhere, available (hopefully in perpetuity) for consultation by future genealogical enthusiasts. As Pinker (1997) puts it: "Ancestor worship must be an appealing idea to those who are about to become ancestors."

Biologists now generally accept that the concept of evolutionary fitness applies primarily, if not exclusively, at the gene level (Dawkins 1989). "Selfish" genes act like viruses—using individual host bodies for their multiplication and transmission—and other "less selfish" resident genes get "carried along for the ride." In other words, when a child is born, the less selfish resident genes get transmitted with—*and essentially because of*—the more selfish ones that were packaged all together in the same "vehicle" (the individual parent). Importantly, the latter genes/alleles—with greater intrinsic potential to be propelled into future generations—always have their first transmission within a newborn child following mutational origin within a parent. Our own personal "selfish gene vehicle," therefore, takes advantage of this by tricking us to protect and rescue this newly adaptive genetic variant, in the event that it might be present (and in need of rescue). The trick involves having emotional bonds that are much stronger for certain gene vehicles—in the newest generation(s)—within one's lineage, i.e., offspring and/or grand-offspring, that are more likely (on average) than other kin from an older generation, e.g., siblings, to be carrying recently mutated adaptive genetic novelty. Importantly, therefore, we generally love offspring (and grand-offspring) more than siblings—i.e., parental care instinct is generally stronger than "sibling care" instinct—even though one routinely shares as many, and commonly more genes, on average, with siblings (Aarssen 2009). It doesn't matter that most of the time a newly adaptive genetic mutation does not reside within an offspring (or grand-offspring). All that matters is that every one of our most important adaptations as a species (products of the most selfish genes/alleles)—adaptations that account for our being alive today—had their very first transmission into the future within a newborn child that (in large part, because of protective parents) became, in turn, one of our ancestors. Accordingly, one's own genes (most of which are copies of ancestors' genes) also have a generally greater chance, on average, of continuing legacy from copies transmitted through one's offspring and grand-offspring than from copies of the same genes transmitted through siblings or other contemporary kin. The same is true, of course, for the transmission of one's memes—or so we are fooled into believing.

One of the most poignant things about allowing oneself to confront Darwinism head on, especially the "selfish gene" Darwinism of Dawkins (1989), therefore, is that it forces a response, on a very personal level, to an inescapable conclusion: A truly enduring personal legacy of the "self" is literally unattainable, and that any hope for it, although comforting if delusion be allowed to have sway (as Darwinism predicts it usually will), is nonetheless ludicrous if one ascribes (as Darwinism unequivocally demands) to the objective reasoning of science. Nothing but a stalwart delusion like soul-based religion has any chance of shoring up enough conviction to reject this outright. Its staggering success is evident in the historical record of religion in the century and a half since the origin of Darwinism: Rather than banishment, as some predicted, and as some would prescribe (Dawkins 2006), religiosity remains conspicuous and powerful in modern culture (Pew Global Attitudes Project 2002). The wife of Bishop Wilberforce (the latter being one of Darwin's adversarial contemporaries) is said to have commented to a friend: "My dear, have you heard Mr. Darwin's theory that we are all descended from apes? Let us hope that this is not true; and if true, let us hope that it not become generally known" (quoted from Low 2000: 29). Based on the widespread contemporary general ignorance of evolution, and the continuing resistance to believe it, especially in the United States (Gallup 2009), the hope of Mrs. Wilberforce has turned out to be a prophesy fulfilled. Among Canadians, for example, recent survey data indicate that 83% practice to some extent, and/or believe in, a religion (Vanier Institute 2010). For the conscious mind, religion's promise of eternal life has always been a big hit, because the conscious mind never lives long enough to discover whether or not there is any delivery on that promise, or to report so to others. At the same time, the "horizontal component" of religion continues to enjoy legitimate popularity—as incentive to behave in ways that promote pro-social reciprocal exchange benefits of group membership, which for our ancestors undoubtedly translated into fitness benefits (e.g., Wilson 2003). Accordingly, it seems that religiosity—notwithstanding the dismay of some Darwinists (Dawkins 2006)—is probably here to stay. Moreover, ironically, the reason is because of the Darwinian hallmark itself: natural selection—reason enough for Darwinists to be understanding, tolerant, and even pluralistic, rather than contemptuous toward religion; reason perhaps even to acknowledge religion as a legitimate domain for meaning in one's life, except not of course for the hard-core Darwinist herself.

It is hardly surprising, therefore, to find that the human brain, designed by natural selection to seek meaning through legacy (and so to resist any notion that it cannot be found or achieved), is consequently *also* generally designed to disbelieve, misunderstand, or at least fail to fully grasp Darwinism. If our predecessors had somehow widely and literally embraced its core implications, then the product of their despair would be impoverishment of genetic legacy, and most of us would not be here today. And of those who were, their human natures would look very atypical by today's standards. One might wonder whether religionists are especially prone to anxiety from pondering these implications, and whether this contributed to their earlier vulnerability to conversion. The central proposal that follows, however, is that even Darwinists must somehow be intrinsically shielded from fully embracing the raw truth of Darwinism (as it is reflected, for example, in the introductory quotations). Humans in general, I shall argue, when learning of Darwinism in its most cardinal, unvarnished form, are essentially shielded from its most troubling implications by cognitive domains that deliver either a mitigating blurred vision of it, or attitude modulations for resolving cognitive dissonance. Moreover, these shelters from complete submission to rudimental Darwinism are themselves—as a pinnacle of irony—products of Darwinian natural selection. As Camus observed (quoted from Tavris and Aronson 2007: 13): "We humans are creatures who spend our whole lives trying to convince ourselves that our existence is not absurd." Darwinists, I submit, are no exception.

Meaning for the Darwinist

Without religion then, how do Darwinists manage to avert or extinguish the anguish normally evoked by the conundrum (or curse?) of consciousness—the terror of mortality salience? From whence is their sense of meaning in life derived, beyond just the additive accumulation of pleasures? Some may say that it comes from Darwinism itself, which, after all (like religion), is one of man's most elegant attempts to "know" himself—to answer "why are we here?" (Grey 1987); to reveal one's "place" in nature, as the anthology compiled by Barlow (1994) aptly illustrates. Legitimate meaning for Darwinists, therefore, may just be what they make of it—through the beauty and sound reasoning of Darwinism planted firmly and affectionately within their minds (see Barash (2000) and Holland (2009) for critiques of this perspective). Perhaps there can be some significant measure of repose simply from the acumen, modulated through application of Darwinian thinking, directed in resolving why one's mind has such a pesky preoccupation with meaning and legacy—and the fearful prospect of their failure—in the first place. Anxiety with no satisfactory explanation is pure misery. But even with anxiety or pain, life may be very much worth living, provided that (and perhaps even *especially when*) one has a deep and personal understanding of the root cause—just as Sisyphus understands his, and just as religionists have asserted historically in terms of sin, Satan, and other evil spirits.

In addition, to my mind, it is possible to characterize two general cognitive domains for meaning in life (for the Darwinist and non-Darwinist alike), both defined in terms of "mortality anxiety buffers" (borrowing terminology from social psychology), evolved as products of natural selection. Unfortunately (for the human ego), our brains don't come out looking as clever and noble as they do when basking in the elite pride of Darwinism, wrapped in the glory and joy of wonder, discovery, and enlightenment. Instead, the cognitive domains below reveal the mind as the fool that it has evolved to be—perpetually drawn to distractions and delusions, i.e., *distractions from knowing* that our bodies are not immortal, and *delusions* (about attainable legacy through memes) *despite knowing* that our bodies are not immortal. But no matter; either way, these cognitive domains had one critical consequence for our ancestors: Their genes were propelled into future generations—genes that are now working overtime within us, and genes whose phenotypes are manifested within core characteristics of human culture.

Meaning Through Distractions

> Life in contemporary society is like an open air lunatic asylum with people cutting and spraying their grass (to deny untidyness, hence lack of order, hence lack of control, hence their death), beating trails to the bank with little books of figures that worry them around the clock (for the same reason) . . . filling shopping carts, emptying shopping carts, . . . and all this dedicated activity takes place within a din of noise that tries to defy eternity . . . . (Becker 1971: 150)

In the first case, meaning in life results when indulgence in leisure generates a state of mind, if only temporary but nevertheless frequently, that is effectively diverted (and thus spared) from the hopeless sense of despair typically associated with knowing there is no immortality. Accordingly, despite the fact that hardcore Darwinism points squarely at the absence of intrinsic purpose—the absurdity of life—many (or most) professing Darwinists may nevertheless enjoy meaning in life by managing (as with non-Darwinists alike), through the many contemporary distractions of leisure, to simply avoid thinking about it very often or very deeply. It is hard not to think of this as a kind of subconscious denial of Darwinism itself.

Nevertheless, I submit that many Darwinists (myself included), like religionists, routinely permit themselves refuge in a cultural norm—leisure, in place of religion—that, in sufficient quantity, is just as effective as a mortality anxiety buffer as the legacy delusion of conquering mortality through eternal life of the soul. Attraction to leisure—"leisure drive" (Aarssen

2007)—then (like attraction to religion) can be interpreted parsimoniously as a product of natural selection. For practicing scientists, including Darwinists, there may be leisure in the wonder, the searching, and the discovery of understanding, even when (and *especially* when) the efforts, in striving for the "goal," involve challenge or struggle (*sensu* Sisyphus)—a perfect vehicle for distraction. As Foley (2010: 124) explains, "Scientists are happiest when they are confused. Science is no different from any other human endeavor. It is the striving that matters, not the outcome. The search for meaning is itself the meaning." Many "love a challenge," as the saying goes, because by preoccupying the mind, it saves the mind from itself. It "keeps me out of trouble," some say, mostly without knowing that the foundational trouble lies within the conscious mind.

Many other modern-day components of leisure drive are obviously linked to the same types of "pleasure modules" that undoubtedly rewarded the reproductive success of our ancestors. These include leisure domains associated with: obtaining food (e.g., hobbies like hunting or gourmet cooking); securing shelter (e.g., camping, quilt-making); exploration (e.g., hiking, traveling); social status (e.g., conspicuous consumption); success in individual competition (e.g., in games); rehearsing for victory in warfare (e.g., team sports); cooperation and social cohesion (e.g., club memberships); companionship and social recognition (e.g., a night on the town, or a party with friends); or sex. Other contemporary attractions to leisure can similarly be (but perhaps less obviously so) interpreted—e.g., through humor evoked by comedy and riddles, thrills at amusement parks, and entertainments from viewing art and listening to music, both privately and at shows and concerts (e.g., see Grinde 2002). Some domains of leisure represent distractions completely unveiled, as escapism—e.g., in "mindfulness" meditation therapy, or in mind-altering novels, plays, films, television, toys, and intoxication. Omar Khayyam, an 11th-century Persian philosopher, said: "I drink not from mere joy in wine nor to scoff at faith—no, only to forget myself for a moment, that only do I want of intoxication, that alone" (in Thiessen 1998: 16).

The important emphasis here is that humans are attracted to these many domains of leisure and preoccupancy, including consumerism (Solomon et al. 2004), not just hedonistically—directly for the sake of pleasures (Martin 2009), i.e., not just for the "pleasure-based" meaning that they might grant. We are also (and probably *mainly*) attracted because a healthy "leisure drive" buffers mortality anxiety; it provides—through distractions—an effective remedy for saving the mind from itself. "Meaning" then (ironically) is a product of being distracted from the suspicion that intrinsic meaning probably doesn't really exist, and the distraction is in the pleasure. It works because we are not designed to be generally cognizant (for at least most of the time, and especially prior to and throughout the most fertile years of early adulthood) of what we are being distracted from, or even that these preoccupations are connected with distraction from anything.

> The human animal is a beast that dies and if he's got money he buys and buys and buys and I think the reason he buys everything he can buy is that in the back of his mind he has the crazy hope that one of his purchases will be life ever-lasting. (Williams 1955: 91)

Consumerism, therefore, may provide death-defying symbolism that feeds attraction to both leisure and legacy. There is also, of course, the added bonus (for fitness) from conspicuous consumption, as well as from athletic displays (primarily in males), in providing fitness signals, e.g., advertisements of intelligence, strength, or prowess—conferring social status and attractiveness to potential mates (Saad 2007; Miller 2009).

Many leisurely pleasures are connected with the cultural domain of nostalgia (Darwinists enjoy them too)—e.g., evoked by visiting museums; antique shopping (to surround oneself with antique home furnishings and collectibles); enjoying a classic old film or home movies; compiling and displaying family photo albums; listening to pop music from one's youth; and regular celebrations of traditions and rituals with appeal rooted mostly in memories of childhood fascinations and experiences, e.g., joy and excitement associated with Christmas (toys, gifts, family gatherings, feasts, and decorum). These can all be seen as fantasizing the past. The fantasy has allure in presenting symbols that affirm one's cultural worldview (which is always at risk of being marginalized by newer, more competitive and expanding ones). But even more fundamentally, it has allure because the human beast has in the back of his mind the crazy hope that by immersing one's mind and senses in symbols from the past, it might somehow reign in the tireless march of time into the future, where absurdity and failed legacy await. "*I believe in yesterday*" (The Beatles).

Humans, therefore, are readily inclined to consume like mad (at the peril of the environment), relax, and just "live it up." As the saying goes, "life is too short"—too short to worry about anything, except of course, for the fact that life is too short.

Meaning Through Delusions

> We can divert our thoughts to the business of building life-giving mythologies—religion, humanism and the like . . . Such mythologies may not be true from a scientific viewpoint. But perhaps we have made too much of a fuss of scientific truth, assuming that it is the only brand of truth around. . . . such myths can be said to contain their own kind of truth, one which lies more in the consequences they produce than in the propositions they advance. If they allow us to act with a sense of value and purpose, then perhaps they are true enough to be going on with. (Eagleton 2007: 89)

Indulgence in delusions of memetic legacy—rather than being regarded as a legitimate target for derogation—might represent

(like leisurely distractions) the very essence of meaning in life: freedom from the conundrum of consciousness. And perhaps it need not matter where the freedom comes from, including religiosity (e.g., MacCormac 1983), except there is one catch: *only provided that one does not discover, e.g., from applying Darwinism, that it is based on delusion.* Perhaps this is what can be inferred from Eagleton (2007) in questioning: "What if the meaning of life were something that we should at all costs not discover?" "Where ignorance is bliss, 'tis folly to be wise" (Gray 1742).

Importantly here, Darwinists (myself included, e.g., by seeking to publish this commentary) are presumably just as susceptible to these delusional indulgences as religionists (and so, like religionists they may be just as likely to deny their delusion). Many Darwinists, I submit, while discrediting the delusion for memetic legacy most favored by our sentient ancestors—through soul-based religion—have unwittingly replaced it with another: the delusion that by embracing and proclaiming Darwinism, a memetic legacy ("leaving something of oneself" for the future) can be anticipated. For some, this might even be associated with delusional anticipation of a worldwide cultural revolution grounded in Darwinism (in place of anticipation of eternal life in heaven). Because of popular details of recorded history (e.g., Murray 2003), most people need no reminding that public recognition and fame are typically afforded the conspicuous minority who were the historical champions and followers of (eventually) remarkable discoveries and successful revolutions. Apparently, because of intrinsic attraction to legacy, it is in our human nature to be fascinated with legends and myths about predecessors—presumably extending back to the wide-eyed audience for campfire tales told by prehistoric hunter-gatherers. A recent issue of *LIFE* magazine (April 2010), for example, celebrates the fame of "100 People Who Changed the World." Intellectual rebels and reformers, along with their disciples, are also often admired as "cool," conferring again both social status among contemporaries and attractiveness to mates.

Like all groups of "us" who contrast with "them," presumably Darwinists are also intrinsically drawn to the pleasure, comfort, and peace of mind afforded by affirmation of one's cultural worldview—especially if this connects with the above attraction to memetic legacy. Religionists get this affirmation from things like church congregations and bible study groups. The same kind of appeal, I suggest, accounts for the fact that Darwinists—even a century and a half after *The Origin* (Darwin 1859)—seem never to tire of hearing or reading another new report (added to the now brimming pile) of evidence for natural selection, even when it is based (as is often the case) on a study design from which alternative results or interpretations would have been implausible, or essentially impossible to obtain (Aarssen et al. 2010). Nevertheless, with each new testimonial for evidence of apparent consequences of natural selection, or details of a particular adaptation, it is perfectly natural to expect continuing praise and blessing from the fellowship. Weekly study groups and meetings with guest speakers for evolutionary biology congregations are attended faithfully by many followers within university departments everywhere. Even without prayers and hymns, the atmosphere is not unlike a "worship service" (for Darwinism). And from Darwinism itself, we should expect nothing less. For our ancestors, identification and alignment of one's views and beliefs with those of a growing contingent of others undoubtedly provided assurance, often grounded in truth, that this conspicuous group of contemporaries was probably on to something important for promoting survival and/or reproductive success.

More generally, numerous delusory domains of contemporary legacy drive (for the Darwinist or otherwise)—in addition to meme transmission through parenthood and religion—are evident in contemporary culture. These include memetic legacy through: personal educational goals and achievements; attraction/devotion to a rewarding and esteemed career/profession; accumulation of financial wealth and associated social status; notoriety from leadership in business or government, or from community service; fame from contributions involving products of science, technology, or the arts, or from being a soldier returning from battle; and several other forms of recognition or celebrity (e.g., through politics, philanthropy, awards, championships, trophies, fashions, trend-setting, or just earning popularity and respect within a circle of friends/peers). Except for the insane and chronically depressed, important legacy-based elements for a "meaningful" life are represented above for virtually everyone. Religion may be the "opiate of the masses" (Karl Marx), but the masses—including Darwinists—also indulge in numerous additional domains for legacy drive, providing a wide range of alternative "narcotics."

Culture as Distraction and Delusion

The above delusions of memetic legacy, although normally unacknowledged as such, privately define meaning in life by providing a sense of self-worth, representing something of oneself that might survive symbolically into the future, despite knowing there is no immortality. There is also the added bonus, for fitness, from esteem, fame, social status, and artistic creativity in providing fitness signals/advertisements, primarily in males, conferring attractiveness to potential mates (Miller 2000). Importantly, these delusions of legacy (as well as fitness signals/advertisements) manifest publicly within cultural norms—even puzzling ones. The contemporary "child-free" culture (Agrillo and Nelini 2008), for example, amounts inadvertently to a celebration of zero fitness through direct lineage, yet it can be interpreted—paradoxically—as a byproduct of strong selection for intrinsic attraction to both leisure and

legacy through meme transmission. The latter, as argued above, is rooted in the perception of offspring as vehicles for memetic legacy transmission, but this requires enormous investments of time, energy, and resources to bear and raise offspring; it's hard work. Accordingly, indulgence in the many modern cultural domains for both leisurely distractions and delusional memetic legacy transmission, as described above, competes effectively with indulgence in meme transmission through parenthood—and so, competes with gene transmission. This "transmission competition," however, has reached significant intensity only in recent decades because of the rapidly growing and widespread empowerment of women, liberated from countless generations of subjugation under patriarchal dominance (Aarssen and Altman 2006), where primarily women, not men, have been saddled with the hard work of parenthood. Parenthood, therefore—at least in the more developed societies—is now generally no longer forced upon women, and (now with freedom to choose) many are just not interested in prioritizing it—and not surprisingly: such disinterest rarely had historical opportunity to be strongly disfavored by natural selection. Our male ancestors largely imposed motherhood upon women, regardless of whether or not they had any intrinsic interest in it—or for that matter, even any intrinsic interest in sex (at least with males).

In addition, for our male predecessors who were left childless (or uncertain of their paternity), their motivations were, in particular, likely to have been channeled strongly by memetic legacy drive through accomplishments. Bacon (1561–1626) wrote the following:

> The perpetuity by generation is common to beasts; but memory, merit, and noble works are proper to men. And surely a man shall see the noblest works and foundations have proceeded from childless men, which have sought to express the images of their minds, where those of their bodies have failed. So the care of posterity is most in them who have no posterity. (Bacon 1985: 79)

A similar notion is reflected in Murray's (2003: 287) commentary on why women comprise such a small percentage of the highly accomplished people in recorded history:

> So closely is giving birth linked to the fundamental human goal of giving meaning to one's life that it has been argued that, ultimately, it is not so much that motherhood keeps women from doing great things outside the home as it is men's inability to give birth that forces them to look for substitutes.

Others might argue, however, that the long history of patriarchal subjugation and oppression (e.g., Joshi 2006) has been at least equally significant in keeping women from doing great things outside the home, with attendant weak selection against disinterest in motherhood (Aarssen 2007). By controlling female fertility through coercion, and at the same time suppressing female opportunities for leisure and memetic legacy through cultural accomplishments, therefore, our male ancestors have been able to maximize their own perceived memetic legacy transmission—and not just through cultural accomplishments, but *as well* through the minds of their offspring. Moreover, the latter, although a delusion, also served in realizing (with no illusion) the *genetic* leg-acies of our male ancestors, including importantly the legacies (transmission) of genes that might have at least a partial role in evoking oppressive, patriarchal male behaviors.

Accordingly, together with our evolved animal drives for both survival and sex, our uniquely human-evolved drives for both legacy and leisure can be interpreted as principal drivers of cultural evolution. The history of cultural change and the rich diversity of contemporary culture, I suggest, have been borne out of creative ancestral minds motivated by strong intrinsic attractions to leisure and legacy in particular. And the genes connected with those minds (including the genes connected with strong attractions to leisure and legacy) were among those that were most successfully propelled into future generations. It is important to emphasize that there is no implication here of genetic determinism, strictly speaking. "There is very little in the human behavioral repetoire that is under genetic control, and very little that is not under genetic influence" (Barash 2000:1015). Biologists know that the phenotypic expression of most (if not all) traits—where genes are involved—is modulated by combined and/or interacting effects of development and environment. At the same time, no biologist or psychologist with credibility would deny that behavioral phenotypes connected with survival drive (e.g., hunger) and sex drive (e.g., arousal) in humans, as in other animals, unequivocally have an instinctual basis—influenced significantly by genes inherited from ancestors favored by natural selection—even without being able (yet) to precisely identify the genes that are involved or how they work (Stearns 2006; Kendrick et al. 2010; Scott-Phillips et al. 2011). The same interpretation can be applied—as the principal argument advanced here—with equal plausibility to the uniquely human behavioral phenotypes connected with both legacy and leisure drives.

Acknowledged or not, delusions of legacy remain what they are: just delusions nonetheless. Virtually all Darwinists and non-Darwinists alike are destined to be eternally anonymous and forgotten—just like my once beloved (to someone) great-great-grandparents, wherever they be buried; even their gravestones are likely now obliterated from weathering, or encroaching roots of trees, if they still exist at all. Thankfully, however, we still have meaning (legitimately, to my mind) through our intrinsic attraction to leisure, involving deployment of cognitive "pleasure modules" of many kinds, including emotions connected with what we call empathy and love. Importantly, these evolved components of human nature serve not just to distract one from foreseeing and fearing one's own inevitable death. For the honest Darwinist in particular—who

must acknowledge that all legacy is delusion, except for that of genes—there is only leisure to save the mind from itself. Only the distraction of pleasure can allow one to easily and repeatedly forget that perceptions of memetic legacy transmission—rooted in the evolved (intrinsic) attraction to having a capacity for "leaving something of oneself" for the future—are all based on delusions. "To be human is to be in the tense condition of a death-foreseeing consciously libidinous animal . . . . So conflicted and ingenious a creature makes an endlessly interesting focus for the meditations of fiction" (Updike 2007: 75). Paraphrasing Elbert Hubbard's (1856–1915) definition of life (Garner 1973): cultural evolution is just one damned delusion after another. It is no wonder, as history has shown, that all great civilizations inevitably collapse.

Concluding Remarks

Darwinism can be viewed as a product of the very process that it exalts. In other words, like other social and cultural norms, it has a foundation, at least partially, in the effects of Darwinian natural selection on human thinking and behavior—and these norms can in turn act as agents of natural selection driving feedback effects on the transmission of genes that further influence human nature and culture (e.g., Richerson and Boyd 2005; Ramsey 2007; Dickins and Dickins 2008; Mesoudi 2008; Nettle 2009). To this we can add (even more paradoxically) that the long history of widespread ignorance of, and aversion to, Darwinism is also itself a product of Darwinian natural selection. Darwinism is a mission for truth discovery, including about the human condition, yet the conscious human mind has evolved a mission for distraction from, and delusion about its own impermanence. For its history of marginal status (compared with religion at least) as a cultural worldview, therefore, Darwinism essentially has nothing but itself to blame. Darwinism is like a snake determined to extend its reach, while feasting on its own tail. Those anticipating a future world-scale Darwinian revolution are likely to be disappointed.

An intriguing parallel here is seen in the paradox of the human mind from Bierce (1911): "Its chief activity consists in the endeavor to ascertain its own nature, the futility of the attempt being due to the fact that it has nothing but itself to know itself with." The implications here are profound. Take first the fact that, to be human (thanks to natural selection), is to embrace distractions from, and delusions of, reality and reason. Then add to this the fact that reasoning about—or "knowing"—meaning in life is nothing more than an exercise of the conscious mind, and so requires "knowing" the mind. But it cannot be done; if there is nothing but the mind to know itself with, then there is no impartial, objective authority to call upon—no empirical method, no effective treatments, no legitimate controls, no bias-free statistical analyses, no testable hypotheses—nothing for science to bring to bear on the problem. Nevertheless, Dobzhansky (1973: 275) wrote: "Mankind has discovered that it is a product of evolution and that evolution is an ongoing process. By this discovery, man has gained the right to judge the merits of evolution"—this, despite the fact that evolution, according to Darwinism itself, has no intrinsic merits whatsoever. The only thing that is "intrinsic" here is the evolved whim of the human mind, terrorized by its own evolved consciousness; and the only "merits" of evolution, or "right to judge" them, are those manufactured by this capricious mind as distractions and delusions—all in the best interests of the genes that influence them.

Echoing Camus' ([1942] 1955) "meaning from struggle" for Sisyphus, Nettle (2005: 172) draws attention to a paradox for happiness:

> The basis of many gratifications is precisely the challenge required to obtain them, and short-cutting this removes their appeal. Thus, paradoxically, we need to admit the possibility of failure and frustration into our lives. It is necessary to have the possibility of unhappiness for happiness to have any meaning.

Similarly, it seems, in order to be truly validated, Darwinism may need to have only a limited record of success. The truth of Darwinism itself demands, paradoxically, that the prospect of universal Darwinism is preposterous—that a future world fully indoctrinated by Darwinism is, in fact, anti-Darwinian. Such a world would mean that the human species would need to have evolved to a state where it had no choice but to confront consciousness head-on—with no credible distractions or delusions available to protect the mind from itself. Foundational Darwinism, with no patience for delusions, would necessarily applaud this on the principle of reason, but in so doing undercut its own conclusion that the conscious human mind is generally designed by Darwinian natural selection to routinely flee from the reasoning of Darwinism.

The need for meaning in life is programmed in our genes, and is quenched by anything that calms, or distracts us from, our instinctual fear of failed legacy. "But this cannot be true," some might say, "because I never fear failed legacy"—and by so proclaiming, revealing (ironically) the successful phenotype (and hence legacy) of their particularly effective leisure- and legacy-drive genes inherited from ancestors. Only genes—not human minds—are granted legacy. It is in the best interests of those genes—transmitted from ancestors—therefore, that contemporary human nature is endowed with compulsions for a rich array of beautiful distractions, and glorious delusions of many kinds. Nowhere is this more elaborately manifested than in the recent "transhumanism" culture known as the "Singularity"—a vision combining alleged potentialities of nanotechnology, robotics, and molecular genetics—firmly rooted in the fear of failed legacy resulting from awareness of inevitable mortality (Kurzweil 2005; and see the 2009 film,

Transcendent Man). Like religion, it promises/predicts a future with true happiness and immortality (assuming that civilization does not first suffer catastrophic collapse). Accordingly, even if (like religion) its lofty goals appear out of reach, it is easy to imagine a growing membership—including from future politicians seeking electoral success (although see Bergsma 2000). It is also easy, therefore, to interpret the singularity as a predictable cognitive product of the human mind—designed by natural selection to be insatiable for self-legacy. Needless to say, this does not bode well for the current goals of environmentalism and conservation biology. In order to avoid a collapsing overpopulated civilization, the engineered future transhumans would need to be designed to either live forever without reproduction, or to reproduce at no more than replacement rate. Either would spell the end of Darwinism—at least in applying it to humans.

Ultimately perhaps, these considerations call for neither exasperation nor happiness for the individual. For some, there may instead be just peaceful resignation to be found in Grey's (1987) answer to the pivotal question: "If time annihilates all that we do, what then is the point?" Echoing Nagel (1971), he writes the following:

> If nothing matters in a million years, then by the same token nothing that will matter in a million years matters now. In particular, the fact that in a million years nothing will matter, does not matter now. That is, the (alleged) future insignificance of the present entails the present insignificance of the future, and hence the present insignificance of the future insignificance of the present. Likewise, if nothing matters from a cosmic point of view, the fact that nothing matters from a cosmic point of view does not, from that point of view, matter. (Grey 1987: 493)

The sheer logic in this might be compelling enough, if only our evolved human nature would allow more than a mere passing glimpse of it. Nevertheless, for now, at least for the young, there is always the balm of our evolved exuberance for leisure to fall back on; and (at least for many non-Darwinists) there is also the evolved attraction to religion—notwithstanding Dawkins (2006). We can only hope, for the future, that the planet's ecosystem services—so essential for human civilization—are resilient enough to bear the consequences of this exuberance.

Apparently, however, "with age comes wisdom." But what is wisdom? Is it just a gradually diminishing attraction to memetic legacy and leisure, triggered by a growing track record of disappointment in both—when reason and reality finally triumph over delusions and distractions (e.g., see Lachman et al. 2008)? Is wisdom then just the achievement, with time, of understanding and resignation (subconscious or otherwise) that both of these human drives are actually—like existence itself—just absurd? Does this account for the teary eyes among senior residents in a retirement home (often interpreted, mistakenly, for "tears of joy") evoked by a Christmas music concert presented by young school children? Is clinical (including suicidal) depression in earlier years, in some/many cases, just the symptom that results when one suffers from premature onset of this epiphany? Do those so afflicted have the unlucky inheritance of genes/alleles that happen to confer weak legacy drive and/or weak leisure drive, and thus enslavement in the terror of mortality salience? The more primitive drive for sex, however, diminishes later, especially for males, where it commonly persists to the end. Does this account for the male midlife crisis when (with the effectiveness of legacy delusions and leisurely distractions waning) core sensual pleasures like sex and eating (i.e., pleasure-based meaning) are starting to look like they might be among the very few "real" things left worth living for? Is the "blessing" from having grandchildren a reversion to the rudimental delusion for legacy—individual meme transmission that also promotes gene transmission? Does this delusion grow in our advancing years because the equipment and opportunities required for enjoying sex drive and favorite foods also start to fail? For many, a renewed interest in religion's promise of eternal life after death may become the very last bastion of desperate hope for legacy, and hence meaning—"just in case."

Why, one might ask, has natural selection not disfavored these daunting cognitive revelations that often come with age? The reason is because none of these troubling later-life onsets had any chance of imposing any penalty on fitness in our ancestors; abundant gene transmission was already assured in their earlier years when sex drives, leisure drives, and legacy drives were roaring at high speed. Perhaps by understanding the evolutionary roots of these "roars"—the phenotypes of what our human natures and cultures have evolved to be, in the best interests of our genes inherited from ancestors—and by embracing these roars, there may be contentment and fulfillments to be found, for both the Darwinist and non-Darwinist alike. The "universal acid" of Darwinism has much substrate to test.

> If the end of all is to be that we must take our sensations as simply given or preserved by natural selection for us, and interpret this rich and delicate overgrowth of ideas, moral, artistic, religious and social as a mere mask, a tissue spun in happy hours by creative individuals and adopted by other men in the interests of their sensations—how long is it going to be well for us not to "let on" all we know to the public? (William James, cited from Feinstein [1982] 1999: 239)

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