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EVOLUTIONARY EXPLANATION AND THE IDEAL OF ALTRUISM: THE INCOMMENSURABILITY OF THE CHRISTIAN LOVE COMMAND

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Abstract

The integration of an evolutionary origin of human behavior with the capacity to symbolically idealize concepts such as altruism may help our understanding of the human yearning for transcendence and its biological roots. Biological adaptation has somehow created a brain that yearns for transcendent idealizations of behavior beyond our capability such as utopian ideals of altruism. We explore whether or not evolutionary explanations of altruism show that self-sacrificial behavior is a biological adaptation, a transcendent ideal, or some combination of the two. Using adoption of non-relatives as a model, we review existing data to determine if adoption behavior is altruism or if sociobiological explanations sufficiently show it to be egoistic. Human adoption practices *are mostly* amenable to evolutionary explanations. The best one can say about most adoption practices with respect to self-sacrifice is that they exhibit pro-social behavior, not altruism. In those few cases where adoption *appears* to be genetically altruistic, the behavior is most often explained as mis-directed adaptive behavior. To explain the exceptions that still exist, celibates who adopt, in this way is a form of question begging; this behavior deserves a more nuanced description.

Although most adoptions are a result of pro-social behavior at best or mis-directed adaptation at worse, we still idealize the concept of adoption as altruism (genetic self-sacrifice), admiring the rare celibates willing to sacrifice reproductive imperatives to raise others' children. Therefore, altruism *can* be realized within a few who develop in an environment emphasizing transcendent conceptions. It appears that our ability to *symbolically idealize* altruism makes humans unique considering that our ability to biologically achieve it seems highly limited. Provided we continue striving to meet the ideal, humans can foster hope and purpose rooted in an eschatological future rather than a present reality.

Keywords: adoption, altruism, Mother Theresa, sociobiology, *creatio continua*

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1. Introduction

Altruistic behavior in the biological sense (e.g. self-sacrificial behavior leading to lowered reproductive success by forgoing genetic progeny) is an evolutionary puzzle. Concepts like competition, struggle for existence, and survival of the fittest seem solid bases for natural selection of individuals who are reproductively successful. Cooperation, pro-social behavior, but especially altruism, seem opposed to it. Once behavior for-the-good-of-the-species [1] was rejected, sociobiology explained cooperative behavior in terms of inclusive fitness based on gene selection [2]. Pro-social behavior was explained in terms of reciprocity based on game theory [3]. Sociobiologists regard these explanations as sufficient to explain cooperative and pro-social behavior in animals [4, 5]. Altruism (as defined above), especially in humans, still needs explaining regardless of its rarity.

Sociobiological explanations work for *most* human behavior that appears to be self-sacrificial since it is really pro-social or cooperative and reproductive success is unharmed. Rare but notable exceptions still exist in self-sacrificing celibates as found, for example, in the Christian religion. Here, evolutionary explanations seem insufficient. The brain architecture for cooperation and pro-sociality may have arisen via evolution to help us love family and friends, but its capacity to idealistically conceptualize transcendent behaviors such as the love command of Jesus (to love enemies as in Luke 6:27, 35; to give all possessions to the poor as in Matthew 19:21; the parable of the Good Samaritan in Luke 10:25-37) seems to go beyond such reductionism. These idealistic behaviors, which involve an apparently unilateral moral commitment to the well-being of the other, can lead to genetic sacrifice apparently denying the biological mechanisms (survival and reproduction) that developed the brain architecture capable of obtaining them.

2. Review of Literature: Adoption as Altruism?

A behavior that is a parsimonious example of altruism (self-sacrifice from a genetic perspective) is adoption of non-relatives. Dawkins calls it a double mistake: the adopter fails to reproduce and she frees others to do so [6]. How do we explain a "Mother Theresa effect" where individuals adopt unrelated children rather than have their own? We should first determine if Dawkins' claim is true. Adoption may, upon further analysis, provide benefits for the adopter, the adoptee, or the relinquishing parent.

Studies of animal adoption show that the reproductive fitness of the adopting parent is unharmed since most animal adoptions result from kin selection or reciprocity [7]. With humans, the explanations for adoptive behavior appear similar. With the possible exception of infertile couples in industrial cultures, people rarely abandon genetic relatives or reciprocating friends when they do adopt [8]. Silk [9], defines three possible hypotheses for human adoption behavior. Additionally, multi-level (or group) hypotheses can be considered.

Scheme 1 lists these four main hypotheses with each of their subtleties. We will review these to determine which ones are best supported, whether further data is needed to decide, and if adoption is truly altruistic.

Scheme 1. Evolutionary hypotheses used for adoption

1. Adoption as an Adaptation
    1.1. Advantage to the Adoptive Parent(s)
        1.1.1. Inclusive fitness
        1.1.2. Reciprocity
        1.1.3. Enables fertility
        1.1.4. Increased mating access ("good provider" advertisement)
        1.1.5. Increased economic access ("helpers at the nest")
        1.1.6. Increased social acceptance
    1.2. Advantage to the Biological Parent(s)
        1.2.1. Inclusive fitness
        1.2.2. Reciprocity
        1.2.3. "Nest parasitism" by giving up child for adoption
    1.3. Advantage to the Adoptee
        1.3.1. "Demanding stranger" to enable adoptee adaptation
2. Adoption as Mis-directed Adaptive Behavior
    2.1. Adaptive in ancestral environments but no longer in modern ones
    2.2. Adoption as a spandrel due to other selection processes
3. Adoption as a Multi-level Adaptation
    3.1. Increased access to outcross opportunities
    3.2. Development of "others like us" in population
4. Adoption as a Cultural Phenomenon Independent of Adaptation
    4.1 Epigenetic mechanisms
    4.2 Evolutionary Culture Theory

If adoption is evolutionarily adaptive one would expect adoption to be more common among genetic relatives or reciprocating non-relatives. Even in socially-engineered industrial cultures, evolutionary hypotheses would predict that adopting parents will be primarily those who are infertile and are forced to adopt non-relatives. Data collected from traditional cultures show that adoption is explainable entirely by inclusive fitness and reciprocity [10]. Data, collected since this rejection of Sahlins' claim that adoption reflected altruism [11], continue to support non-altruistic explanations [12]. In industrial cultures, however, the adoption of non-relatives occurs as a result of the demise of extended families and the non-availability for adoption of nieces, nephews, and cousins [9]. Additionally, adoption practices in the United States are affected by the artificial engineering of families by social workers [13].

For example, the Civil Rights movement in the United States shifted the social work view of the family to merely a place in which to grow up, rather than one in which a child develops a sense of identity [14]. This view was short lived when black social workers in 1972 objected and in 1978 when the Indian Child

Welfare act outlawed placements outside the tribe. In the 1970s and 1980s, while single motherhood became less stigmatized, the stigma of giving up a child for adoption increased even in white middle-class society similar to attitudes always shared by black and poor white communities [13]. In the 1980s and 1990s, the concept of nature versus nurture shifted once again to its pre-World War II state favoring biological determinism; adoption by strangers became suspect once again. Adoptees were now considered at higher risk, birth mothers as being coerced into relinquishing their babies, and adopters only wishing to fulfill their middle or upper class dream of the perfect family [15]. Consequently, throughout the past forty years, United States attitudes toward adoption have shifted from engineering a social structure based on idealism to one more attuned to maintaining biological relationships. Recently, these attitudes seem to have shifted once again to ones that seem like a *laissez faire* market place where babies are commodities, birth mothers are suppliers, and the "consumers" range from infertile couples to homosexual unions to fertile couples merely wishing to balance gender in their families or wanting an outlet for social consciousness. According to Solinger the 1996 Welfare reform is so full of degrading language about the capacity of poor women to be mothers that it makes an unstated but arrogant assumption that the middle class should rescue the children of the lower class [15]. As a result, one might suspect that adoption practices would be so culturally influenced in industrial societies like the United States that any data would be suspect due to the social engineering of the past forty or so years. Could our biological imperatives still overcome such engineering?

Despite this social engineering bias, the demographics still show that sociobiological hypotheses are supported. For example, Bonham showed that 70% of all adoptions were made by infertile couples [16]. However, on average only 4.5% of *all* infertile/sub-fecund women ever even decide to adopt (Table 1). Adoptions by fertile women were significantly less (only 0.98%). Within this cohort, fertile women with one child made up a very small proportion (0.055%) of adopters. Fertile women with two or more children were nearly seventeen times more likely to adopt than those with one child (0.925%) perhaps because they already have a full complement of genes in the next generation and an adoptive third child represents a minor burden. These results are as expected from an evolutionary viewpoint. Women who know, or believe, they are fertile wait until they have a full complement of genes in the next generation (two or more children) prior to adopting. Finally, Bonham [16] also found that even within a socially-engineered society like the United States, adoptions by this cohort of relatives were still quite high (about 50-64% of adoptions). This result suggests that adoption of non-relatives is somewhat rare even in socially-engineered societies. Despite the cultural influence of social-engineering by social workers, biological imperatives are at work.

Nevertheless, does the small minority of fertile women with one biological child who adopt (eleven of nearly twenty thousand) suggest altruism? After all, they do not have a full set of genes in the environment. To answer that

question, we first must determine if they benefited in some way from the adoption. Did they gain something by adopting a second child who could be used to benefit the genetic progeny? Are the grandchildren from the biological child favored over those of the adopted child? These questions were not answered by the researchers. Given the small percentage and the alternate, more parsimonious hypotheses, we would reject that these individuals are demonstrating altruism as defined earlier.

Table 1. Adoption statistics from Bonham [16]

Female cohort	Number of children	Number in cohort	Number who adopted	
Infertile/Sub-fecund	0	7,010	302	(4.31%)
	1	3,246	155	(4.78%)
Fertile/Fecund	0			0
	1	19,992	11	(0.055%)
	2 or more		185	(0.925%)

One evolutionary hypothesis that deserves more attention is the idea that adoption is a solution to infertility. Silk evaluates the literature on the subject and concludes that the probability of conceiving after adopting is not reliable enough to be recommended as a solution to infertility [9]. Since most of the research was composed of retrospective data (e.g. they often did not have appropriate comparison control groups, no conclusive determination of clinical infertility, and small sample sizes) it was difficult to recommend such a solution. However, some of the studies showed that adoption promotes fertility in a small number of cases [17-19]. If borne out with further studies, one may be able to support an adaptive reason for adoption by infertile couples. Such a finding would completely disqualify adoption as altruism.

Considering the expense of adoption and the fact that the life of a child is involved in making such decisions, it is not surprising that most studies would expect very robust data to support the idea before recommending it. Aside from this caution, it is very unlikely that any adoption agency would agree to allow parents to adopt with such motivations. Nevertheless, the story is heard so often of parents who try to have children to no avail, resign themselves to adoption, and then become pregnant that it has taken on the aura of urban myth. Even if true in only ten percent of the cases, as found by Weinstein [19], adoption could still be a self-serving mechanism for enhancing fertility and thus reproductive success. Additional epidemiological work needs to be done to determine if the claim of adoption as a fertility aid is valid or not.

Insufficient data is available to evaluate the hypothesis that adoption permits increased mate access to males by advertising their willingness to care for infants. This hypothesis may need testing on a psychological motivation

basis by asking adopting fathers why they adopt. An exploration of the more mundane reasons rather than the idealistic ones may flesh out naturalistic explanations for the behavior. If so, one would expect the adopting male's motivation "to make his spouse happy" could be a result of wishing to gain increased mating access. He may also wish to be viewed "as a real father" to signal presumed fertility to others and thus gain acceptance socially. Additional work is needed to reject or accept this explanation.

Additional hypotheses are that adoption provides benefits to the adopting parents: does the child help in acquiring additional resources or help raise other family members? Does the adopted child permit social acceptance by others that gives the adopting couple advantages they otherwise would not have?

The rest of the adaptive hypotheses to be evaluated are whether or not the parents giving up a child for adoption is a form of "nest parasitism" or if the child benefits as a "demanding stranger" at the expense of adopters. We see this behavior in animals; could we expect to see this behavior in humans? Betzig provides support for this hypothesis where natural parents in the traditional cultures of the Western Caroline Islands arranged for their children to be raised by others. This practice resulted in more resources to raise their remaining children while simultaneously increasing their adopted children's abilities to survive and reproduce since they were placed with families who had the resources to care for them [20]. This strategy is certainly more evolutionarily stable than the alternatives of abandonment or infanticide which also operates in human populations when parents must choose to support only those children they feel have the greater chances for survival and reproduction without harming the parent's own chances [21-24].

An interesting statistic in Bonham's data for industrial cultures was that over 87% of unrelated adopted children were illegitimate [16]. Could adoption activity really be considered a form of nest parasitism on behalf of the illegitimate parents who were capitalizing on the proximate desire for humans to be attracted to infants? Data from Bachrach in industrial cultures supports this idea with nearly identical results [25]. The majority of mothers who gave up their child for adoption were unmarried (88%) with little means of support. Those who did give up their child for adoption were less likely to require public assistance than were those who did not. The adopted children had greater economic advantages (2% below poverty level) than did those who remained with their never-married mothers (62% below poverty level). In another study, nearly one-fifth (19.4%) of the parents of Down's syndrome children gave up the afflicted child for adoption [26]. While not as high as illegitimate children given up for adoption, it is still considerable reflecting the unwillingness of couples to support children who may harm their own fecundity. One could further test this idea by determining if the couples who give up mentally and physically challenged children are younger or primiparous (and thus have more to lose reproductively) compared to those who raise them.

For the nest parasitism strategy to work, the adopting homes must provide the care needed. In most cases, this probably occurs especially if the child goes

to a home with more resources than it originally had [9]. But there is no guarantee of proper care especially when we consider the increased potential for abuse in households with unrelated adults [27-30]. Most of the data promoting this concern are from step-families where abuse risk is two to seven times higher than that found in natural parent homes [22, 27, 31-33]. Within these households, the stepparent is discriminative, only sparing his or her natural children from abuse [29, 34]. In South Africa, households with stepmothers spent less on food (milk, fruit, and vegetables) and significantly more on tobacco and alcohol than did homes where the child's biological mother is the head or spouse of the head of household [35]. In addition, there is evidence that males invest less in stepchildren than they do in their natural children [36-39]. Thus, step-parenting in men, at least, is seen more as mating effort than parenting effort of unrelated children in order to allow access to females for otherwise less-marketable men [38, 40, 41].

In adopting couples, risk of sexual abuse is one-third (of physical abuse one-sixth) that of the biological families from which the child originated [42]. Only a small minority of placements is terminated because of suspected abuse to adopted children [43]. However, these results may reflect the highly selective process of choosing adoptive parents in North America. There is no guarantee that these results would hold where the adoption process is less selective. However, in couples who together decide to adopt after accepting their infertility, such concerns may not be as high. Knowledge of their infertility may remove fear of cuckoldry and mating effort can be divorced from parenting effort in such couples. In fact, the picture for abusive families is a function of a highly complex model of cost/benefit analysis as well as various genetic/ecological/social effects [44]. Consequently, we could extrapolate similar findings to adoptive homes but only if we assume relatedness is a greater factor in care of the child than a couple's commitment to the adoptee. This extrapolation seems unlikely, but it could be tested in families who have a mix of adopted and biological children by determining if the adopted child is less favored, or less invested in, or even abused. More importantly, one could follow the grandchildren to see if the grandparents favored the biological ones. The idea that adoption favors the biological parents and represents a form of "nest parasitism" continues to be supported.

The last adaptive hypothesis is the "demanding stranger" idea. Although it seems intuitively obvious that adoption favors the child as a "demanding stranger" at the expense of the adoptive parents, this hypothesis needs considerable testing before acceptance. One test could be whether or not adopted children demand and receive greater expenditures over a lifetime than do biological children. Although anecdotally, we are aware of several adopting parents who spent inordinate amounts of money bailing out "problem" adoptees from one scrape with the law or another, such stories do not prove the point. In fact, the vast majority of adopted children show patterns of behavior no different than those of non-adopted children according to one study [45]. In another study of international adoptees in Sweden, the adoptees as teens and young adults

showed no differences in mental health or self-esteem compared to a non-adopted Swedish cohort [46].

Another hypothesis is that the attraction to neonatal features is behavior shaped in a different environment than the current one and is now mis-directed in industrial societies. In presumed ancestral hunter-gatherer societies, caring for any child regardless of parenthood within these small, often related, groups would run a high likelihood of maximizing inclusive fitness or enhancing reciprocity. The desire to nurture children may be due to a proximate neuro-endocrinology that is stimulated visually by neonatal features: large head, high forehead, receding jaw, large eyes. This proximate behavior leads to an evolutionary advantage if it enhances reproductive success. Brédart and French showed that human neurology seems primed to accept anyone's baby as our own [47]. They found that a child could not be correctly identified as belonging to either parent preferentially. In monogamous societies, extra-pair copulations occur 9-30% of the time with most timed for optimum conception. Concealed ovulation as well as confusion over paternity keeps a cuckolded provider present. Continuing the deception, females attribute resemblance of a child to the male provider rather than themselves, especially in his presence [48, 49]. Further support for the mis-directed hypothesis comes from the fact that when non-relatives were adopted, 84% were under eleven months old [16]. Thus, the adoptions of non-relatives that do take place are predominately of young babies that may easily be explained by the mis-directed adaptation hypothesis. Finally, humans seem predisposed to love those who exhibit familial cues. These cues can be phenotypic resemblance, paternity belief, even symbolic genealogical links forged by familial metaphors as seen in religious groups (e.g. referring to parishioners as brothers and sisters) [50, 51].

Multilevel selection is another attempt to explain pro-social behavior such as adoption where humans show apparent self-sacrificial behavior within a group of unrelated individuals allowing its members to proliferate at the expense of out-group individuals. Groupishness can go beyond genetic relatedness in a species that is symbolic as seen in some religious groups [51]. Symbolic genetic relatedness with the use of family metaphors (e.g. identical dress, similar language, religious ritual) is capable of replacing familial relatedness in the brains of some. Perhaps, culturally-inspired symbolic relatedness can explain those rare self-sacrificers who display mis-directed behaviors (in a genetic sense) toward non-relatives within a symbolic family. One would still need considerable testing to determine if adoption could be a multi-level adaptation to help create "others like us" or to allow more outcross opportunities for biological children to prevent in-breeding in a group. These ideas have not received sufficient testing to support or reject them. Intuitively, we would consider that these hypotheses would not be supported in the majority of cases but they could explain some adoptive behaviors such as the support of church-run orphanages and 'children's homes.' Such hypotheses could be tested by determining if religious people adopt more often than non-religious people or if right-to-lifers adopt more than right-to-choose advocates.

The idea that adoption is a cultural phenomenon comes from the work in evolutionary culture theory and epigenetic theory [52, 53]. One hypothesis is that adoption is not influenced by evolutionary adaptation but reflects learned cultural beliefs about the value of children and the nature of kinship [53]. If true, one should find greater inconsistency in patterns of adoption across cultures. Instead, we find considerable homogeneity [9]. One could empirically test epigenetic mechanisms for adoption behavior by determining if adoptees are more likely to adopt. No support for this hypothesis is offered in the literature on adoption studies to date. Evolutionary culture theory suggests that ideas in cultures take on an adaptive character where they follow a descent with modification pattern much like evolutionary biology does [53]. In fact, there is some evidence that adoption is used in industrial cultures as a form of social control to mitigate illegitimacy via transmission of cultural values [54]. A Darwinian take on this idea is that cultural rules governing who should get pregnant are based on male dominance where bastard children are despised since they represent another man's mating effort and reproductive success without taking the parental responsibility required. Certainly, more work is needed to support or reject these ideas. Nevertheless, perhaps some evolutionary insights can be gleaned even from epigenetic theory. The desire for social acceptance and wealth is, after all, evolutionarily based according to the explanations for the demographic transition [50, 55, 56]. Even the post-war engineering efforts of social workers seem less of a cultural phenomenon when we consider that striving to achieve upward mobility and an idyllic domestic life-style may actually be evolutionarily based. Looking at the "groupishness" displayed by minority and native populations regarding adoption may provide support for multi-level adaptation hypotheses.

Further studies support the fact that several features of human adoption match expectations from human behavioral ecological theory: a prevalence for adoption of relatives (inclusive fitness), relinquishment of children by those unable to care for them (nest parasitism), and a predominance of post-reproductive and infertile adopters (proximate desire for children satisfied in a mis-directed adaptive behavior) [31].

3. Discussion

With rare exceptions, the data show that Darwinian explanations are sufficient in both traditional and industrial societies to explain adoption. In traditional societies, adoption is explained by inclusive fitness and reciprocity mechanisms. In industrial societies, these mechanisms are predominant as well as are the rarer proximate ones that operate by using ordinarily adaptive behaviors that are now mis-directed. Adoption does not appear, necessarily, to be altruism in the biological sense of reproductive sacrifice. In those odd cases where fertile couples choose to adopt in lieu of having children, Silk (personal communication) states that these are "rare and limited to people with religious or political motivations to serve the children." An adoption advisor for a church-

related adoption agency (personal communication) stated that "such couples are referred to as having a 'rescue mentality'; the social drive to adopt is often not strong enough to maintain the adoption when the rigors of child rearing hit; these couples make the least motivated parents."

This does not mean, however, that adoption *cannot* be a form of altruism. Altruism, even in its most parsimonious definition, appears to exist in other contexts: celibates who never reproduce but adopt and raise others' children. Evolutionary hypotheses seem insufficient for this behavior. Biology explains reciprocity and inclusive fitness; game theory (and perhaps cultural transmission) explains pro-social and cooperative behaviors; symbolic thinking may explain group inclusiveness. But to explain rare behaviors of celibates it seems we need more than biology, game theory, cultural transmission, or symbolic families. We need to explain *these* behaviors as a function of our capacity to idealize. Some might call this misdirected behavior or an anomaly; to do so begs the question. What could explain such *idealized* behavior, even if rare and evolutionarily unstable?

The Christian love command is an example of an evolutionarily unstable strategy – one that does not promote survival and reproduction and yet keeps occurring at low level. Nothing is adaptive about a religion that calls for a person to reject family (Luke 9:60-62) and self (Matt 16:24). What motivates an individual to carry out the Jesus love command rejecting even reproductive imperatives by being celibate and adopting other's children? Perhaps the ability to idealize being one with numinous concept such as God or an Ultimate One underlies such behaviors. The ability to no longer have a sense of self and become part of an ultimate one seems, for some, to supercede genetic survival in the form of offspring [57].

In Hubert Meisinger's presentation of Ralph Wendell Burhoe's scientific theology, he points out that humans have both a biological and a cultural nature [58]. Mediation between this duality is the enigmatic function of religion. The idea that somehow altruism is "written into the fundamental nature of human reality" as Philip Hefner postulates [59, p.208], and that it has a foundation "in ultimate reality . . . [with] an intrinsic ontic character" as Meisinger concludes [58, p.769] may be valid. However, this view seems possible only if one believes in the possibility of a supernatural being with the ultimate purpose of bringing all things into oneness with itself in a future of harmony. In this mode of thought, such a being must apparently pull this feat off using flawed creatures who are more concerned with fulfilling an original blessing to "be fruitful and multiply" (Gen. 1:22; 1:28) – a poetic but ironic rendering of the foundation of all evolutionary theory: to maximize reproductive success.

In his explanation of altruism (Jesus' love command of agape in John 15:13 and I John 3:16), Meisinger claims that altruistic love cannot spring from inclusive fitness or reciprocity – biology seems insufficient to explain the altruistic ideal of celibates who adopt [58]. Sacrifice for unrelated persons and enemies, adopting rather than reproducing – these are very evolutionarily unstable strategies that apparently require belief in supernatural conditions of

ultimate reality. As we have shown, most adoptions are in fact selfish, non-sacrificial behavior. But there are still those rare adopting celibates. It seems that only if we postulate such behavior is 'nothing but' an element of a mystical brain (formed when such mysticism was advantageous for survival) can we eliminate the requirement of the supernatural as a function of hope in the human. However, such thinking eliminates all human endeavors as valid; even logical thinking such as science would be 'nothing but' an adaptation and not to be trusted as valid.

Another possibility is perhaps humans are capable of conceiving ideals (e.g. a perfect love, a perfect being, ultimate purpose) due to a brain infrastructure that comprehends metaphysical concepts such as the quest for meaning and fulfillment – or purpose [58]. Such a brain may envision these ideals best within a religious culture that promotes altruism via belief in a supernatural being who desires it. In opposition to this, Daniel Dennett would call such beliefs *qualia* and liken the ability to idealize to an evolutionary adaptation no longer serving a useful function . . . much like our craving for sweets now makes us overweight, a mis-directed adaptation [60]. However, it seems that a purposeful ontology allows the human brain to operate with a greater sense of meaning than such nihilism provides. Meisinger explains that Hefner sees sociobiology as providing data on how a supernatural being, God in the Christian sense, used evolution in divine creation and will continue to use it in *creatio continua* to allow humans as created co-creators to bring the cosmos into an eschatological fulfillment or purpose [58]. Idealizations such as altruism may be one step toward that purposeful belief.

4. Conclusions

Thus, our basic argument is that there appear to be animals in the biological world that are (a) driven by mechanisms focused on genetic benefit (reproductive success via kin selection or reciprocity), and there are animals driven by (a) but who also have (b) cognitive capacities to conceptualize idealistic behavior which offers the potential to act in ways that do not provide a genetic benefit (e.g. that deny (a) benefits). Humans seem like animals with both (a) and (b) but it takes a great deal of work to push ourselves so that (b) behaviors can be carried out that overcome (a) behaviors. In fact, such behavior is so rare as to be reserved for saintly celibates . . . at least that is how it appears so far with respect to adoption, one of the more parsimonious measures of altruism in the biological world. If this is the case, then we should ask if this rare behavior is what religion is for. Can religious practices, such as a focus on being one with an ultimate numinous being, overcome powerful drives produced by (a) to become something more via (b)?

Although it at first seems that *all* people's altruistic tendencies (with respect to adoption) are really egoistic at the core, it appears that perhaps there are *rare* adoptions that are not directed toward genetic benefit (and cannot be explained thoroughly as mis-directed adaptations). We have shown that *most*

peoples' *apparently* altruistic behavior is really directed toward genetic benefit; consequently, such behavior, by biological definition, is not altruism. But the rarities still seem to deserve some explanation without begging the question by passing them off as mis-directed adaptations. The more nuanced view is to realize that most adoptions are merely *apparent* altruism and indeed *many are* mis-directed adaptive rescue behaviors. But there still remain some rare exceptions (the Mother Theresa effect).

Rather than dismiss these saintly celibate exceptions, it may be that these rarities show individuals who have well-developed (b) thinking that overrides the (a) drives. But there is a paradox. If we completely overcome (a) behaviors, focusing all our efforts into (b) behaviors, the result would be disappearance of the entire human species in a single generation. It would seem that a few cheaters will at least keep providing a population wherein the extreme altruists can continue to carry out impossible demands such as the Jesus love command.

Perhaps we could also plug this thinking into notions of freedom and what conceptions of a supernatural being might set us up to become? To be truly free, let us allow that one has to resist temptation (even the temptation of having one's own children) and struggle against some countervailing force: the biological imperative of reproduction let's say. We then can see why having both (a) and (b) qualities are necessary. Through (a) we have a necessary condition on freedom (e.g. a temptation or side of our nature to struggle against). Through (b) we have the fragile, nearly impossible to exercise, capacity to conceptualize what we value – both in ourselves and in the world (e.g. we have the choice to freely act on such conceptualizations). Rather than create perfect rational animals who act like (b) all the time, we also need some to act like (a) most of the time or we would never have the opportunity to act like (b) since no one would be around if all acted like (b) all the time. So it may not be incongruous to postulate that rational imperfect animals would be created by a perfect supernatural being. Being both rational and animals would seem to be one way to implement the necessary conditions on the truly free beings which religious folk believe a supernatural being would create, either directly or indirectly.

Perhaps it is our conceptual capacities of idealizing behavior that underlay our path to freedom and understanding of goodness. This conceptualizing of idealistic behavior and outcomes gives us hopes of a future that, while it may be utopian dreaming, gives us the strength to keep striving toward an eschatological future. As a result of this argument, we can conclude that biological evolution may provide the infrastructure, which allowed humans the capacity for idealization, even to engage in cooperative behavior; culture may build upon that infrastructure to expand cooperation toward pro-social behavior. But it seems religious ideals of behavior are needed to complete our evolution (in Hefner's terms, created co-creators bringing about a *creatio continua*) [61]. In the Christian tradition this requires that one strive to conform to Christ's self-sacrifice for the world.

William Iron's evaluation of Hefner's proposal is in consonance with our proposal of how altruism is explained, but his focus is on the mechanism of bringing it out in order to create a more wholesome future for all [62]. The possibility exists, according to Irons, if we will more fully understand how humans cooperate and use those techniques to get us to become more inclusive as larger groups even with creatures (human and non-human) with which we have no familiarity. Irons details how indirect reciprocity, signaling commitment, and moralistic strategies such as altruistic punishment are getting closer to describing cooperative behaviors in scientific terms. But he feels we would be more successful if they included the role that hierarchies play in enforcing cohesion and cooperation within large social groups. Even though the possibility exists, Irons is not confident of its probability without a thorough understanding of hierarchy. The ability of the human brain to perceive idealistic concepts, as we present it here, fits in this plea for the use of hierarchy to enforce cooperation. The hierarchy conceived by such a brain, in religious terms, consists of an all powerful being that will altruistically punish freeloaders at some point in time (a judgment day). Without such conceptions, the non-theist can think of an ultimate goal of creating a more wholesome future as his or her purpose without hoping for a numinous individual to be the altruistic punisher, but rely instead on a human agency that has that type of ability and commitment.

Emulation of altruistic selflessness, even if its fulfillment can only come via grace in an eschatological future, perhaps allows us to "find our deepest harmony with our destiny" [58, p.774]. Effectively, altruism of this type provides us with a hopeful purpose even in the face of what may actually be an absurd universe. Provided it also encourages us to act, we may be able to help usher in fulfillment to succeed where past efforts have failed.

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References

[1] V.C. Wynne-Edwards, *Animal Dispersion in Relation to Social Behavior*, Oliver and Boyd, Edinburgh/London, 1962, 18-19.
[2] W.D. Hamilton, J. Theor. Biol., **7** (1964) 1.
[3] R. Axelrod and W.D. Hamilton, Science, **211** (1981) 1390.
[4] J. Alcock, *Triumph of Sociobiology*, Oxford University Press, Oxford, 2001, 218.
[5] E.O. Wilson, *Sociobiology, The New Synthesis*, Belknap Harvard University Press, Cambridge, 1975, Chapter 5.
[6] R. Dawkins, *Selfish Gene*, Oxford University Press, Oxford, 2nd ed., 1989, 101.
[7] E. Avital, E. Jablonka and M. Lachmann, Anim. Behav., **55** (1998) 1451.
[8] D.E. Chambers, International Journal of Comparative Sociology, **16** (1975) 118.
[9] J.B. Silk, Human Nature, **1** (1990) 25.
[10] J.B. Silk, American Anthropologist, **82** (1980) 799.

[11] M.D. Sahlins, *Use and Abuse of Biology*, University of Michigan Press, Ann Arbor, 1976, 48.
[12] D. Damas, American Ethnologist, **10** (1983) 328.
[13] J.K. Ruark, Chronicle of Higher Education, **October 25** (2002) A12.
[14] B. Melosh, *Strangers and Kin: The American Way of Adoption*, Harvard University Press, Cambridge, 2002, 158.
[15] R. Solinger, *Beggars and Choosers: How the Politics of Choice Shapes Adoption, Abortion, and Welfare in the U.S.*, Hill and Wang, New York, 2001, 183.
[16] G.S. Bonham, Journal of Marriage and the Family, **39** (1977) 295.
[17] R. Katz, D.B. Marshall, S.B. Romanowski, and N.F. Stewart, Social Work, **30** (1985) 63.
[18] B. Sandler, Fertil. Steril., **16** (1965) 313-322.
[19] E.A. Weinstein, American Sociological Review, **27** (1962) 408.
[20] L.L. Betzig, American Anthropology, **90** (1988) 111.
[21] T. Boswell, *The Kindness of Strangers*, Pantheon Press, New York, 1988, 157.
[22] M. Daly and M.I. Wilson, *A Sociobiological Analysis of Human Infanticide*, in *Infanticide: Comparative and evolutionary perspectives*, G. Hausfater and S.B. Hrdy (eds.), Aldine, New York, 1984, 503-520.
[23] M. Dickemann, Annu. Rev. Ecol. Syst., **6** (1975) 107.
[24] S.B. Hrdy and G. Hausfater, *Comparative and evolutionary perspectives on infanticide: introduction and overview*, in *Infanticide: Comparative and Evolutionary Perspectives*, G. Hausfater and S.B. Hrdy (eds.), Aldine, New York, 1984, xiii.
[25] C.A. Bachrach, Journal of Marriage and the Family, **48** (1986) 246.
[26] A-C. Dumaret, C. de Vigan, C. Julian-Reynier, J. Goujard, D. Rosset, and S. Aymé, Prenatal Diagnosis, **18** (1998) 437.
[27] M. Daly and M.I. Wilson, Ethology and Sociobiology, **6** (1985) 197.
[28] S. Lenington, Ethology and Sociobiology, **2** (1981) 17.
[29] J.L. Lightcap, J.A. Kurland, and R.L. Burgess, Ethology and Sociobiology, **3** (1982) 61.
[30] M.I. Wilson, M. Daly, and S.J. Weghorst, Journal of Biosocial Science, **12** (1980) 333.
[31] M. Daly and M.I. Wilson, Journal of Marriage and the Family, **42** (1980) 277.
[32] M. Daly and M.I. Wilson, *Stepparenthood and the evolved psychology of discriminative parental solicitude*, in *Infanticide and Parental Care*, S. Parmigiani and F.S. vom Saal (eds.), Harwood Academic Press, Switzerland, 1994, 121.
[33] M. Daly and M.I. Wilson, Current Directions in Psychological Science, **5** (1996) 77.
[34] M.V. Flinn, Ethology and Sociobiology, **9** (1988) 335.
[35] A. Case, I-F. Lin and S. McLanahan, Economic Journal, **December** (2000) NBER Working Paper No. w7401.
[36] K.G. Anderson, H. Kaplan, and J. Lancaster, Evol. Hum. Behav., **20** (1999) 405.
[37] K.G. Anderson, H. Kaplan, D. Lam and J. Lancaster, Evol. Hum. Behav., **20** (1999) 433.
[38] J.B. Lancaster and H.S. Kaplan, *Parenting Other Men's Children: Costs, Benefits, and Consequences*, in *Adaptation and Human Behavior: An Anthropological Perspective*, L. Cronk, N. Chagnon, and W. Irons (eds.), Aldine de Gruyter, New York, 2000, 179.
[39] F. Marlowe, Evol. Hum. Behav., **20** (1999) 391.

[40] M. Daly and M.I. Wilson, *The Truth About Cinderella: A Darwinian View of Parental Love*, Yale University Press, New Haven, 1999, 64.
[41] K.G. Anderson, Human Nature, **11** (2000) 307.
[42] R.P. Barth and M. Berry, *Adoption and Disruption: Rates, Risks, and Responses*, Aldine, New York, 1988, 25, 108.
[43] W.H. Sack and D.D. Dale, Child Abuse and Neglect, **6** (1982) 443.
[44] R.L. Burgess and A.A. Drais, Human Nature **10** (1999) 373.
[45] A.E. Brand and P.M. Brinich, Journal of Child Psychology and Psychiatry, **40** (1999) 1221.
[46] M. Cederblad, B. Höök, M. Irhammar and A-M. Mercke, Journal of Child Psychiatry, **40** (1999) 1239.
[47] S. Brédart and R.M. French, Evol. Hum. Behav., **20** (1999) 129.
[48] M. Daly and M.I. Wilson, Ethology and Sociobiology, **3** (1982) 69.
[49] J.M. Regalski and S.J.C. Gaulin, Ethology and Sociobiology, **14** (1993) 97.
[50] J.N. Davis and M. Daly, Q. Rev. Biol., **72** (1997) 407.
[51] D.S. Wilson, *Darwin's Cathedral: Evolution, Religion, and the Nature of Society*, University of Chicago Press, Chicago, 2002, 156.
[52] E. Avital and E. Jablonka, Anim. Behav., **48** (1994) 1195.
[53] W.H. Durham, Annual Review of Anthropology, **21** (1992) 331.
[54] D.S. Edwards, Human Organization, **58** (1999) 387.
[55] M. Borgerhoff-Mulder, Trends Ecol. Evol., **13** (1998) 266.
[56] R. Mace, Anim. Behav., **59** (2000) 1.
[57] A. Newberg and E. d'Aquili, *Why God Won't Go Away: Brian Science and the Biology of Belief*, Ballantine, New York, 2001, 125.
[58] H. Meisinger, Zygon Journal of Religion and Science, **35** (2000) 745.
[59] P. Hefner, *The Human Factor: Evolution, Culture, and Religion,* Fortress Press, Minnepolis, 1993, 208.
[60] D.C. Dennett, *Consciousness Explained*, Little Brown and Company, Canada, 1991, 459.
[61] P. Hefner, *Freedom in Evolutionary Perspective*, in *Free Will and Determinism*, V. Mortensen and R.C. Sorenson (eds.), Aarhus Univ. Press, Denmark, 1987, 121.
[62] W. Irons, Zygon Journal of Religion and Science, **39** (2004) 773.