Dialogue & Nexus | Fall 2015-Spring 2016 |Volume 3

An Analysis of Altruism

Sarah Siemens
Department of Biology; College of Arts and Sciences
Abilene Christian University

Scientists, freethinkers, and philosophers have attempted to find an explanation of the role of altruism in a natural world that is compatible to the dominantly accepted Darwinian principle of natural selection. Many postulates have been developed in an attempt to explain how self-sacrificial behaviors are cohesive within the "survival of the fittest" ideology. This has caused many scientists to broaden the definition of altruism to understand its components in the physical world. In order to understand how absolute altruism is solely found through God's love, it is necessary to examine each subset of scientific altruism to reveal their differences. None of the subcategories of altruism are equivalent to the self-sacrificing love of God; however, they do offer an interesting perspective of how selflessness can be explained in a scientific context.

Simply described, altruism is the highest form of love. It is the action of self-sacrificing, self-emptying, or offering complete benevolence to another being. It is a challenge to completely comprehend altruism because the concept of self-sacrifice is incompatible with the "survival of the fittest" ideology commonly associated with Darwinian explanation. Darwin's theory of natural selection deems the act of placing another's needs before oneself as a completely unnatural act; yet, self-sacrificial behavior is evident in many areas of life. Self-sacrifice has attracted the minds of freethinkers as they have tried to grasp this unnatural concept. Whether evolutionary, psychological, or theological, every attempted explanation has a different mechanism of interpreting self-sacrificial love, and each are important to explore in order to fully understand altruism's perplexity. After examining the evolutionary, and psychological realm's mechanism of defining altruism, it becomes obvious that none of their explanations compare to the absolute benevolence found in God's love.

French philosopher Auguste Comte first coined the term 'altruism' in 1851 as he attempted to capture the moral high ground of his new religion.[1] Comte believed the, "law of flesh and the law of God could be replaced by the scientific distinction between egoistic instincts located in the posterior part of the brain and altruistic instincts located in the anterior part of the brain."[2] This altruistic-based religion served the purpose of eliminating the faith portion of Christianity as well as disconnecting non-belief from immorality, politics and corruption, thus creating a religion that was able to exist without the language and metaphysics of Christianity. Comte argued that his new religion could even be regarded as morally superior to Christianity, which he described as, "an essentially selfish system based on each individual's desire for infinite reward and fear of eternal punishment."[3]

[1] Auguste Comte was raised in the Catholic Church but decided to create his new "religion of humanity" after his lover and inspiration, Clotilde de Vaux, died. His new religion was based on positivism and its core values were altruism, order and progress.

[2] D. Wilson, 2014, p. 90.

[3] ibid., p. 91.

Although Comte's new self-sacrificial meta-narrative did not develop into an accepted religion, it aroused curiosity to further explore how altruism concepts could fit into a selfish world.

An Evolutionary Explanation of Altruism

Altruism can be categorized into three main areas: evolutionary, psychological and theological. Each one defines altruism differently. Evolutionary altruism can be explained as "a behavior that enhances the fitness of someone else at some cost of fitness to the donor;"[4] it is usually measured by the parameters of furthering one's genetic offspring. The main purpose is to explain how self-sacrificial behavior can occur in a world of natural selection. Schloss presents this dilemma by stating, "if the struggle for existence is the engine of natural selection and survival of the fittest is the direction of travel, then those organisms that sacrifice their biological well-being for the good of another will be kicked off the train."[5] To answer this question, scientists have developed theories including kin-selection theory, selfish-gene theory and group-selection theory; each relies on the fundamental concept that self-sacrificial actions evolved as a mechanism for survival.

Richard Dawkins' 2006 publication of *The Selfish Gene* is an influential contribution, towards the concept of morality vindicated by genetics. Dawkins' theory is based on the foundation that "we are survival machines, nothing more than robot vehicles blindly programmed to preserve the selfish molecules known as genes."[6] This theory emphasizes that although organisms may appear to perform self-sacrificial actions, these actions should be attributed to the organisms' selfish genes attempting to prevail. Simply stated, the degree of genetic similarity between two organisms is directly related to their inclination to perform altruistic acts towards each other. Dawkins states, "in order for altruistic behavior to evolve, the net risk to the altruist must be less than the net benefit to the recipient multiplied by the relatedness."[7] Although a relatively simple concept, problems arise with this theory when the extent to which an organism can determine their relatedness to another is put in question. It seems highly unlikely that organisms that lack cognitive recognition, nor have communicated a long history of ancestral heritage, like sentient humans would be able to determine which other organisms share related genes. Dawkins refutes this issue by stating that knowledge of "true relatedness may be less important in evolution of altruism than the best estimate of relatedness that animals can get."[8] This initial concept of genetic altruism helped lay a common foundation for other theories to build upon and further develop evidence in support of evolutionary altruism.

The next step in understanding evolutionary altruism is to consider kin-selection theory. Charles Darwin stimulated thought regarding this theory in his book *The Descent of Man.* His intent in this book was to broaden his original theory by expanding the natural selection process to act within the family instead of solely the individual. Darwin believed the parent to offspring self-sacrificial relationships is the cause of the apparent morality found in nonhumans. This thought coincides with the genetic theory previously mentioned. The

[4] Post, 2002, p. 17. Quoted from Elliott Sober, "The ABC's of Altruism."
[5] ibid., p. 214. Quoted from Jeffrey P. Schloss, "Emerging Accounts of Altruism: 'Love Creation's Final Law'?"
[6] Dawkins, 2006, preface.
[7] ibid., p. 95.
[8] ibid., p. 105

kin-selection theory asserts that "organisms sometimes give up the possibility of generating direct offspring if their self-sacrificial action toward kin could generate multiple offspring from those with whom they share many genetic similarities."[9] Essentially, the theory claims that self-sacrificial behavior was initiated with parents caring for their offspring with the goal of furthering their genes and then evolved into the altruistic actions seen in nonhumans. Dawkins states that "all examples of child protection and paternal care, and all associated bodily organs, milk-secreting glands, kangaroo pouches, and so on are examples of the working in nature of the kin-selection principle."[10] W.D. Hamilton furthered Darwin's original thoughts when he introduced the concept of inclusive fitness as an additional explanation on the progression of maternal love evolving into altruistic actions in nonhumans. Inclusive fitness is defined as, "the sum of an individual's own fitness plus the sum of all the effects it causes to the related parts of the fitness of all its relatives."[11] Using these parameters, Hamilton derived the equation: "the cost to the giver is less than the gain to the beneficiary, multiplied by the index of genetic relatedness ($C < B * R$)."[12] For a fundamental example, consider an altruistic being and their brother. If the altruistic individual sacrificed their basic needs (e.g. shelter, protection or food) for their brother, they are decreasing their direct genetic fitness and chance of reproductive success in future generations. However, since half of the altruistic individual's genes are identical to his brother based on genetic decent, then the brother's offspring will contain some genes identical to the altruist. Therefore, if the brother reproduces, the altruist will have an indirect genetic representation in the next generation. Altruism will evolve, as the shared genes are likely to be the ones programmed for altruistic behavior.[13] This example can be further developed to account for each relative of the altruistic individual according to Hamilton's equation.

Thus, kin-selection theory explains altruistic evolution based on furthering genetic offspring among relatives. However, the theory fails to demonstrate how self-sacrificial behaviors develop in larger communities of unrelated organisms. Philosopher Elliott Sober and biologist David Sloan Wilson's publication of *Unto Others: The Evolution and Psychology of Unselfish Behavior*, is the main contributor to the acceptance of the group-selection theory as it helps expand altruism past its sole genetic responsibility. It helps answer Dawkins' previously mentioned problem about how nonhumans can determine their relatedness to one another in order to perform altruistic actions for genetic success. Group-selection theory is defined as "a group, such as a species or a population within a species, whose individual members are prepared to sacrifice themselves for the welfare of the group; the sacrificing group as a whole may be less likely to go extinct than a rival group whose individual members place their own selfish interests first."[14] The concept of natural selection acting upon a large number of connected individuals supports the evident pattern of humans acting in social groups across the world's different civilizations. It also explains why animals are often seen working in groups for survival. Dawkins states, "if animals live together in groups their genes must get more benefit out of the association than they put in. A pack of hyenas can catch prey so much larger than a lone hyena so it pays each selfish individual

[9] Oord, 2010, p. 118
[10] op. cit. ref. 5, p. 107.
[11] E. O. Wilson, 1980, p. 56.
[12] op. cit. ref. 8, p. 118
[13] op. cit. ref. 10.
[14] opt. cit. ref. 1, p. 7.

to hunt in a pack, even if it involves sharing food."[15] Darwin also observed these group interactions in the animal kingdom when he attempted to explain how selflessness could be an adapted characteristic among large unrelated groups. Regarding morality emerging based on group relationships, he states, "a tribe including many members who, from possessing in a high degree the spirit of patriotism, fidelity, obedience, courage, and sympathy, were also ready to aid one another, and to sacrifice themselves for the common good, would be victorious over most other tribes; and this would be natural selection."[16] This idea coincides with Sober and Wilson's theory of the evolution of altruism based on natural selection between groups. The evolution of altruism can be accounted for "whenever between-group selection prevails over within-group selection."[17] If altruistic behaviors increase the chance of survival of one community against another, then selfless characteristics will evolve secondary to this.

Evolutionary altruism is justified through genetic means. It first attempts to describe the evolution of benevolence through natural selection upon an individual gene in the selfish-gene theory, and then expands to selection on the family genome in kin-selection theory, and finally selection through non-related alleles in group-selection theory. Evolutionary altruism completely discredits the concept of selfless behavior as truly altruistic by attributing each act to the "selfish gene."

A Psychological Explanation of Altruism

The most crucial paradigm to consider when contrasting evolutionary and psychological altruism is the separation between behavior and motive. Dawkins efficiently describes this explicit version of biological altruism as "concerned only with whether the effect of an act is to lower or raise the survival prospects of the presumed altruist and the survival prospects of the presumed beneficiary."[18] In contrast, psychological altruism's deliberate focus is on the intentions behind each altruistic action. Obviously, it is impossible to accurately verify the true motive behind an individual's benevolent act; therefore, the focus must be on interpreting the possible intentions behind these acts. Another significant difference with psychological altruism is that its evidence is predominately based off of human interactions and does not offer in-depth explanations for non-humans.

Psychological altruism is best defined as, "a motivational state with the ultimate goal of increasing another's welfare."[19] This realm of altruism is used to explain the reasons behind self-sacrificing actions. Philosopher Philip Kitcher reiterates, "the altruism that matters to us is not typically measured in Darwinian currency of reproduction… it has everything to do with the intentions of the agents."[20] Psychological altruism delves into a different perspective of self-sacrificial behavior that goes beyond the proximate mechanisms explained by biological means.

Robert L. Trivers first coined the term reciprocal altruism in 1971, when he attempted to elaborate on altruistic relationships between non-kin. Reciprocal altruism arises when an individual realizes that performing self-sacrificial behaviors for others can benefit themselves in the long run. It is a symbiotic relationship between two organisms, developed through trusting that if one of them performs an unselfish act for the other, then eventually the other will do the same. This system of interactions develops as," anybody with conscious

[15] opt. cit. ref. 5, p. 166.
[16] Alexander, 1987, p. 169.
[17] opt. cit. ref. 1, p. 22.
[18] opt. cit. ref. 5, pg. 4.
[19] Batson, 2011, p. 24.
[20] ibid. p. 25.

foresight can see that it is sensible to enter into mutual back scratching arrangements."[21] An example that Trivers gives to explain reciprocal altruism is birds calling out and warning each other when a predator is approaching. He states, "although calling out jeopardizes each caller, the cacophony of calls makes it difficult for predators to hone in on any one bird as potential prey."[22] The next question to consider is, what happens if a partner in the relationship cheats or does not reciprocate the altruistic action? According to Trivers, this is not a viable option for most organisms even in Darwinian terms because "selection will discriminate against the individual if cheating has later adverse effects on his life and reproduction that outweigh the momentary advantage gained."[23] Essentially, the individual who does not reciprocate the altruistic act will be punished in the future by not receiving benefits from others when he is classified as a cheater.

Political scientist Robert Axelrod supported reciprocal altruism when he performed an elaborate study with a computer-based program to research when a person should cooperate or be selfish while interacting with another person. He devised a game called Prisoner's Dilemma, in which two players each have a choice to either cooperate or defect without knowing what the other player will do. Defection always resulted in a higher reward than cooperation. However, if both players defected then the punishment was worse.[24] If both players defected, they received one point each. If they both cooperated they received three points. If one player defected while the other cooperated, the defector received five points while the cooperator received nothing. Axelrod decided to host a competition, where participants could submit different strategies on how to best play the game. At the conclusion of the competition, he put all of the different strategies into his computer and matched them up against each other to see which strategy would accumulate the most points. He categorized the strategies into either nice or nasty, where nice referred to a strategy that was never first to defect and nasty would defect even if not provoked. He concluded that "of the fifteen strategies entered into the tournament, eight were nice. Significantly, the eight top-scoring strategies were the very same eight nice strategies, the seven nasties trailing well behind."[25] Axelrod, expanded his study by holding another competition with 63 strategists, and instead of awarding points for a win, he rewarded offspring. He then created an evolutionary succession and deemed each round a generation to see which strategy could survive the longest. The game lasted 1000 generations until the population became stable; and out of all the strategies only one nasty survived past 200 generations.[26] The significance of Axelrod's research is found in the underlying concept that "nice strategies," or people who are characterized as non-envious, forgiving or selfless, have a higher chance of survival in a long-term scenario. It can be deduced that self-sacrificing behavior may be motivated by this idea of cooperation with others for the sole purpose of future personal gain.

Richard Alexander supplemented the concept of reciprocal altruism with the idea of indiscriminate beneficence, which is defined as, "the willingness to risk relatively small expenses in certain kinds of social donations to whomever may be needy; this strategy is successful partly because of the prevalence of interested audiences and keenness of the observation that beneficent

[21] opt. cit. ref. 5, p. 183.
[22] opt. cit. ref. 8, p. 111.
[23] opt. cit. ref. 10, p. 58.
[24] Oord, 2010.
[25] opt. cit. ref. 5, p. 224.
[26] Dawkins, 2006.

acts identify who will be the best partners with whom to engage in future reciprocal interactions."[27] Indiscriminate beneficence accounts for interactions within a large group or society where the opinions of the people surrounding you will determine the degree of help you could receive in the future. As an individual portrays himself or herself as an altruist to society, they have a higher chance of prompting self-serving acts from others. Moreover, "societies honor individual models, mentors, and saints for their self-sacrifice, because the behavior of these altruists benefits those who honor them."[28] If one is judged by society as a strong contender for mutual cooperation, then you will have a higher chance of receiving benefits in the future. For example, consider a saint who leads a life full of benevolence for the less fortunate. If the community that surrounds the saint is aware of the saint's selfless life, there is an extremely high chance that any member of the community would help the saint under any circumstance. This explains why, "whether or not we know it when we speak favorably to our children about Good Samaritanism, we are telling them about a behavior that has a strong likelihood of being reproductively profitable."[29] This concept of indiscriminate beneficence is extremely cynical as the underlying message is that altruism and morality have derived from selfish means. Basically, it extracts the good will of humanity and attributes morality to a mentality that is always calculating and constructing the best means of achieving success through adapting to a scheme of society. This could be called Machiavellian Altruism.[30]

Another proponent of psychological altruism that should be investigated is C. Daniel Batson's empathy-altruism hypothesis. The hypothesis states "that feeling other-oriented emotion elicited by and congruent with the perceived welfare of another person in need produces a motivational state with the ultimate goal of increasing that person's welfare by having the empathy-inducing need removed."[31] This theory credits altruistic motivation to an empathetic response and removes the underlying self-benefits as an incentive. The motivation behind this empathy response, however, can easily be provoked by egoism. An individual's response to another's pain could be motivated by the need to remove the gut-wrenching feeling of empathy, avoidance of punishment, or to gain social or personal rewards.[32] The difference with Batson's hypothesis is that the motivation is truly altruistic and not egoistic. Over recent decades, many experiments have been performed in attempts to test the correlation between empathic concern and the act of providing help. The evidence from these experiments confirms Batson's idea of an empathy-helping relationship. However, it only explains that empathy provides a catalyst to help, but cannot deliberate on the nature of the helper's motivation.[33] It is extremely difficult to gather reliable evidence regarding human motivations; for this reason only presumptions can be made.

Sociologists Samuel and Pearl Oliner have played a large role in the interpretation of psychological altruism in the context of personality. Throughout extensive research, including interviews of over four hundred people who had rescued Jews during the

[27] opt. cit. ref. 15, p. 100.
[28] opt. cit. ref. 8, p. 114.
[29] opt. cit. ref. 15, p. 102.
[30] For a further explanation of Machiavellian Altruism read, Barber, N. (1994). Machiavellianism and altruism: Effect of relatedness of target person on Machiavellian and helping attitudes. *Psychological Reports*, *75*(1), 403-422.
[31] opt. cit. ref. 18, p. 29.
[32] Oord, 2010.
[33] Batson, 2011.

Holocaust, the two sociologists developed the premise for what is considered an altruistic personality. According to the Oliner, a person has an altruistic personality if they are more inclined to perform self-sacrificial actions but not necessarily every time.[34] Furthermore, "what distinguished rescuers was not their lack of concern with self, external approval, or achievements, but rather their capacity for extensive relationships – their stronger sense of attachment to others and their feelings of responsibility for the welfare of others, including those outside their immediate familial or communal circles."[35] The capacity for extensive relationships is developed at a young age and is greatly influenced by early family lives. The main two proponents of an altruistic personality are inclusiveness and an attachment to others. Inclusiveness is to deem all humans equal and not consider race or social status when judging another being's actions as good or bad, whereas attachment is defined as establishing genuine sympathetic relationships with the less fortunate.[36] The Oliners claimed that the most indicative predictor of an altruistic personality is parental guidance; most of the rescuer's reported having strong family bonds.[37] The concept of an altruistic personality is a critical idea as it expands the potential of a single altruistic act into a benevolent lifestyle. It demonstrates that altruistic actions can be engraved into the brain and can develop into a trait, instead of simply a means for furthering genetics. However, even if an individual possesses an altruistic personality, this does not indicate that their motivations are never egoistic.

A Theological Explanation of Altruism

The evolutionary and psychological explanations of altruism are often skeptical of true self-sacrificial behavior and typically accredit it to egoistic motivations of the mind or genes. These explanations account for why species perform altruistic acts towards kin, groups, and others that could benefit them in the future; however, they lack evidence on why species would sacrifice their well-being for a stranger. Theological altruism answers this. Within the theological realm, the explanation for altruism contrasts with the other two; it believes absolute altruism exists in the world through God's love. This explanation is non-scientific as it cannot be tested; but it is philosophically more satisfying and accounts more for the human experience of self-sacrifice. Absolute altruism is defined as "acting to benefit another person with no benefit whatsoever to the actor";[38] this altruism is most apparent when self-sacrificial actions occur towards a complete stranger. If this action is intensified to include the sacrifice of reproductive potential, then it is particularly recalcitrant to explain. Such unlimited love can only be explained theologically. In order to fully comprehend this unnatural love, the intimate relationship established between God and His image-bearing creation must be understood first.

Self-sacrifice may be the highest form of love and is a central theme in the Christian religion as it is visibly intertwined in scripture, tradition and many spiritual aspects of contemplative theology. Most religions advocate the ethic of loving every other being as one of the most important guidelines. Many religious people believe they are following God's will by engaging in altruistic actions towards the needy, the

[34] Oord, 2010.
[35] opt. cit. ref. 8, p. 88. Quoted from Samuel P. Oliner and Pearl M. Oliner, *The Altruistic Personality: Rescuers of Jews in Nazi Europe.*
[36] ibid.
[37] Oord, 2010.
[38] ibid., p. 80.

exiled and even nonhumans.[39] Ancient theological explanation for a creature's ability to express this unlimited love is owed to the idea that God created humans in His image. Christianity is saturated with the concept seen in 1 John 4:8 that "God is Love" and if love is God's main defining character then creatures were, "created for love by love."[40] The fact that humans were made with the intention to imitate God's love provides an essential connection between creation and the creator.

The terms of this connection between God and his creation, however, can be interpreted in many different ways. Also, there is often confusion on how theological explanations can be cohesive with scientific evidence. Thomas Jay Oord outlined a clear and precise analysis of this dilemma. He is a contemporary theologian and philosopher and in his work *Defining Love,* Oord describes God's love as a "full-orbed divine love." This implies, "that God will always act intentionally, in sympathetic response to others, to promote overall well-being";[41] it is simply engraved into his divine nature. God is love and will always bestow love in every creature. However, He has the free will to choose in which fashion He portrays this love. God is also a relational being. He is immensely affected by our choices and experiences the emotions of grief, pain, joy and love. As a relational God, He is influenced by His creation's actions. However, due to His loving divine essence, will never stop transmitting love upon His creation. The theology Oord proposes also includes the idea that, "God's own characteristics and God's relations with others influence the forms and extent of divine love."[42] This can be seen in parallel with how every specimen on earth can also choose the extent of their interactions and type of love they emit towards others.

Another important aspect of Oord's description of God's role in earthly interactions is God's omnipresence. Oord states, "because God is present to all creatures and because God loves perfectly, all creatures are directly loved."[43] This allows God to interact with creation in any moment of time; therefore, he can determine the best way to influence every specific situation. Through these interactions, God gently persuades and calls every living thing to imitate His relentless pursuit of promoting earthly welfare to the best of their ability. This is another link between God and creation as, "in a universe of cause and effect, divine efficient causation is a direct objective cause of the same metaphysical kind as creaturely causes."[44] God cannot surpass the boundaries established by metaphysical laws of the universe. Oord, however, points out three ways that God relates to these metaphysical laws that are different from earthly entities. First, God can only sway beings towards good, whereas earthly specimens can influence others in a wrong manner. Secondly, without God's ascendency it is impossible for creatures to express love. On the contrary, creatures are not dependent on anything else to encourage love. Finally, "God's call is situation-specific,"[45] meaning that He has the ability to interpret each situation and determine the best method for each individual being to love in that moment. These three differences allow God to act distinctly and effectively on every organism He calls to love.

Now that the groundwork is established for Oord's theology of God's interactions with the earthly kingdom, it is possible to propose a solution for how

[39] ibid., p. 185.
[40] ibid., p. 179.
[41] ibid., p. 190.
[42] ibid., p. 192
[43] ibid., p. 192.
[44] ibid., p. 194.
[45] ibid., p. 195.

humans and other parts of creation can perform unnatural or unlimited love. Oord states that "limited creatures express unlimited love if they respond appropriately to the call of the omnipresent one who knows what the common good requires and assess perfectly what each creature can contribute."[46] God is always gently persuading and influencing each individual towards the most loving solution. However, each individual may not be able to correctly discern God's call. Oord believes that a human's ability to interpret God's persuasion is determined by their relationship with Him. Many different influences can affect how humans perceive God's call, but it is always available. The ability for nonhumans to distinguish God's urges can be supported by the scientific world as they help discover the means of each creature's mechanism of articulating love. Oord's theology allows for science and Christianity to not only be interact in a mutual way, but also to aid each other in understanding self-sacrifice as a natural action.

Although Oord's explanation of how absolute altruism can exist in the world is only one ideology; it presents a very concise case that many other theories fail to offer. He illustrates that God's essence is omnipresence, fully relational, intentional, and absolutely altruistic. Essentially, God sacrificed His perfect creation for every creature's free will as an act of the highest form of love. God is love and therefore He is incapable of intervening with creation's free will; he instead attempts to lure, attract, and draw every being into choosing love. Because creatures were created in God's image, they all possess the ability to sacrifice through love and not simply egoistic means. That is why this very *unnatural* form of love, absolute altruism, can prevail in a selfish world.

Conclusion

The three realms of altruism are all derived from different perspectives on how this perplexing action of self-sacrifice can be understood in creation. Philosophers, scientists, and theologians across the globe have attempted to define and understand altruism, usually in a context that eliminates the existence of the unnatural love of sacrificing for a stranger. Evolutionary and psychological theories can explain natural love, but understanding God's divine essence clarifies the supernatural power that enables humans to love outsiders and enemies. Once the characteristics of God's divinity are clear, it is evident that because of God's absolute altruism for creation, it is possible for the highest form of love to exist and thrive in today's world.

Literature Cited

Alexander, R.D. (1987). *The biology of moral systems*. Hawthorne, NY: A. deGruyter.

Barber, N. (1994). Machiavellianism and altruism: Effect of relatedness of target person on Machiavellian and helping attitudes. *Psychological Reports*, *75*(1), 403-422

Batson, C.D. (2011). *Altruism in humans*. Oxford: Oxford University Press.

Dawkins, R. (2006). *The selfish gene*. Oxford: Oxford University Press.

Oord, T.J. (2010). *Defining love: a philosophical, scientific, and theological engagement*. Grand Rapids, MI: Brazos Press.

Post, S.G. (2002). *Altruism & altruistic love: science, philosophy, & religion in dialogue*. Oxford: Oxford University Press.

[46] ibid., p. 199.

Wilson, D.S. (2014). *Does altruism exist? Culture, genes, and the welfare of others*. West Conshohocken, PA: Templeton Press.

Wilson, E.O. (1980). *Sociobiology*. Cambridge, MA: Belknap Press of Harvard University Press.