



## Android Science and the Animal Rights Movement: Are There Analogies?

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### Abstract

The day is already here when androids perform tasks and act in ways which seem to be human. However, as of now, no one is prepared to view these man-made creations as anything other than property to be used for our benefit or entertainment. As the systems become more sophisticated, and as engineers try harder to build “conscious” machines, I suggest that a number of moral, ethical, and legal issues could arise. By drawing upon the animal rights movement, an analogy can be drawn which suggests that, given the right degree of complexity, androids may have a claim to a certain level of moral status. However, to assert a claim that androids could become legal persons, something more is needed; the analogy is not perfect. Despite similarities there are significant differences between the animal and the android at levels deeper than the mere physical. Identifying these points of similarity and divergence may ultimately depend upon how we come to understand the concept of human consciousness. Furthermore, by comparing animals and androids, we might also begin to see how our ideas about consciousness impact on our concept of rights. It is also suggested that a point of moral concern may come quite early in any development process, and when it does, it could have some unexpected ramifications if not understood by researchers. Failure to be aware of this risk could result in reactions that curtail the very development of android science.

### Introduction

This presentation was prompted by the observation in a recent newspaper article that the Japanese government has established a committee to draw up safety guidelines for the keeping of robots in homes and offices (Faiola, 2005). This in turn prompted the question: What are some of the issues that might arise if an android reaches the stage where public perception is that the android itself, rather than just the designer or engineer, should be subject to some form of legal constraint and entitled to some form of legal protection? (Inayatullah, 2001) By this I simply mean that at a point in time, a political subdivision capable of making and enforcing law, will decide to try to apply those laws directly to an android. In examining this premise I will also address some moral and ethical issues that could arise from the creation of an android with such capabilities. In doing so, I argue that by analyzing the animal rights movement we can draw some lessons which could be applied to androids as they develop from crude machines to something closer to “human.” By looking at how the arguments for animal rights developed over the last thirty years, we can see how the movement has expressed ideas which have substantially

changed the views about animals held by many members of society. Arguing further, we can perhaps determine if those ideas can shed light on the way to design androids, these new creatures of our own making (Mazlish, 1993).

But before we start, a preliminary comment about the terminology and concept of rights is in order.

There are many other ways of trying to analyze the various kinds of situations that arise in our lives when an action or policy is good or bad, right or wrong, moral or immoral. But in the Western world at the present time, rights talk is one of the most common ways of formulating moral issues, whether the issues involve only individuals or are between individuals and communities or even when they involve the relationships of whole communities with one another. (Werhane, 1985).

Despite the fact that rights talk is fraught with confusion, and occasionally, intentional distortion for partisan reasons, it is still the “normal currency of ordinary political discourse” (Waldron, 1988). In discussing rights we also need to be aware that there is an often ignored distinction between what are termed “moral rights” and “legal rights”; what are moral persons and what are legal persons. The classical formulation of a legal person is an entity that is the target of “rights”; it can own property and has the capacity to sue or be sued. This does not mean that inanimate objects cannot be legal persons for limited purposes (Stone, 1974). However, the term legal person is a fiction so long as the target does not have intelligence or will (Gray, 1909). It is beyond the scope of this paper to delve into this issue further but this classical position, often challenged, gives us at least a conceptual point of departure.

It is helpful also to point out, in a very cursory fashion, and without addressing the variations and nuances, that, in legal philosophy, there are two major strands of thought that have dominated the debate concerning the relationship between law and morality over the last two hundred years, each with a distinctive approach to the question of the origin of rights. In general terms they focus on how open or closed a legal system should be and test the thesis that to the extent a legal system is closed it should not rely on outside factors such as morality or ethics to order its subjects (Schauer, 2004).

The first, legal positivism derives from Bentham’s idea, later expanded upon by his protégé, John Austin, that law derives its power from the sovereign and is the expression of the will of the sovereign enforced by the appropriate control structures. Rights, in this view, as expressed by the modern positivists Hans Kelsen (1967), and Richard Tur

(1987), are whatever the law says they are, independent of any other content such as morality.

There is therefore, in this view, no necessary relation between any given set of human characteristics (say, the ability to reason and reflect) and legal personality. Moreover, there is no minimal threshold level of intelligence required to constitute a person. Once a legal right is in evidence, so is a person. Modern legal personality lacks a persistent character over time and place; even its beginnings and cessations are not easy to recognize. Rather, legal personality is better regarded as groupings of rights and duties whose content depends on such factors as age, sex and mental ability (all regarded as natural categories), as well as legal purpose and jurisdiction. (Davis and Naffeine, 2001).

In contrast to this positivist position, the natural law, or natural rights view, is premised on the belief that there are independent factors, external to the law, which give rise to rights. This view, initially identified with the Catholic philosophers Augustine and Thomas Aquinas, in essence holds that there are certain rights which are inherent and derive, not from the sovereign, but from the status as rights holder. Again, at the risk of over-simplification, a rights holder is defined in terms of this status as either property or person. In the case of a religious natural rights view, man's rights derive from his status as God's creation. From a more secular view, the rights are derived from man's status as a person, a moral being capable of rational action. It is this concept of a rational actor, which has pervaded the western legal tradition and differentiates humans from animals. As android science develops it will ultimately be required to determine on which side of the divide androids will be placed.

As we move forward in our inquiry, it is also necessary to realize that there is another factor of primary importance which must be kept in mind, and that is the distinction between property and person. Roman law, and later, medieval English law, placed great emphasis on status. What something was, the slot into which it fit, was paramount to the question of what rights it possessed. Rights were derivative of status. With the rise of liberal individualism, the view of rights has shifted to encompass the idea that rights are possessed by individuals. We will see, as we proceed, how these themes are interwoven in a complex web that suggests that the entanglement, despite efforts to the contrary, still causes much confusion.

### **Animal Rights**

In the Hellenic and Judeo-Christian tradition, in contrast to other religious and philosophical traditions such as Shinto, Jainism, Taoism and Buddhism, the predominant premise of philosophical discourse was that animals were inferior to humans (Rao, 2002). Humans have been described as the masters of the beasts since the days when the Book of Genesis was written. There it was stated that man was given dominion "over the fish of the sea, the birds of the air, and the cattle, and over all the wild animals and all the creatures that crawl on the ground." Genesis Book 1, Verse 26. While

this position has not uniformly and consistently been accepted by all philosophical outlooks, it has found expression in the long-standing Judeo-Christian tradition which continues to hold that man is special and as a result has been given dominion over animals by God:

Augustine, followed by Aquinas, accepted the Stoic view that animals can be killed, because, lacking reason, they do not belong in our community. There is an even more far-reaching conclusion in Thomas Aquinas... intellectual understanding... is the only operation of the soul that is performed without a physical organ, and infers that the souls of brute animals are not immortal like ours. (Sorabji, 1993)

To this day, the Catholic Church continues to hold that the distinguishing feature between man and animal is the concept of ensoulment. "If the human body takes its origin from pre-existent living matter, the spiritual soul is immediately created by God. Consequently, theories of evolution which, in accordance with the philosophies inspiring them, consider the spirit as emerging from the forces of living matter or as mere epiphenomenon of this matter, are incompatible with the truth about man." Address of Pope John Paul II to the Pontifical Academy of Sciences, October 22, 1996. Encyclical of Pope Pius XII, *Humani Generis* (1950).

The subservient position of animals as property has remained the primary Western belief for millennia. Because animals were nothing more than property, their moral status elicited little debate or controversy. For example, the champion of individual human liberties and natural rights, John Locke, stated that even though we all, as humans, belonged to God and were God's creatures, we had ownership and control over our own bodies and the labor we performed. When this labor combined with an object of nature, we gained a right to that object in the form of a property right which could be defended against the attempts of others to take that right from us. This "natural right" of ownership extended to animals because they were simply part of nature and, therefore, could properly be viewed as resources to be used by humans and converted to property (Waldron, 1988).

Rene Descartes stated that animals were no different than machines. If a man were to hit a dog with a hammer it would be of the same moral significance as if he hit a clock with a hammer. Issues might arise if the clock broke and injured a bystander, or if the clock were owned by that bystander, but in so far as the clock, or the dog, was concerned, there were no moral issues which arose. He also was of the belief that it was language, or the lack of language, which distinguished animals from humans. A similar view has been expressed in more modern forms by both Frey (1980) and Macphail (1998). Query whether it is the inability to use language comprehensible to humans that is the critical factor in this argument. Certainly recent studies have shown that animals do, at least within defined limits, use forms of language, but in a much different way than humans (Pinker, 1994).

Immanuel Kant held views which were premised on the idea that the moral status of animals was derived from the relationship which they held with humans. For Kant, the causing of injury to an animal only had moral significance if it diminished the human perspective or if it tended to lessen one's likelihood of treating humans properly.

..since all animals exist only as means, and not for their own sakes, in that they have no self-consciousness, whereas man is the end, such that I can no longer ask: Why does he exist?, as can be done with animals, it follows that we have no immediate duties to animals; our duties toward them are indirect duties to humanity. Since animals are an analogue of humanity, we observe duties to mankind when we observe them as analogues to this, and thus cultivate our duties to humanity. ...so if the acts of animals arise out of the same *principium* from which human actions spring, and the animal actions are analogues of this, we have duties to animals, in that we thereby promote the cause of humanity. (Kant, 1794)

In contrast to the indirect duty view of Kant, Jeremy Bentham viewed animals themselves as moral agents worthy of consideration. It is of some interest that Bentham held this position despite his belief that there were no such things as natural rights. But, being the object of moral consideration did not imply that the same object should have any rights. According to Bentham it was not whether animals could reason or talk, but rather whether they could suffer that made them the proper subjects of moral consideration (Bentham, 1789). Some commentators have suggested that Bentham may have had a limited view of the role animals might play in moral life and actually may have been only concerned with the gratuitous infliction of suffering on animals (Francione, 2000). Despite this criticism, Bentham's position was one of the first to espouse moral consideration for animals solely because of their intrinsic characteristics, and not simply as a derivative of human considerations. He also went further than others and stated that animals should be treated under what he termed the "Principle of Equal Consideration" as equally weighted with humans in the same situation.

Since the publication in 1975 of Peter Singer's book, *Animal Liberation*, there has been a growing debate over whether animals have "rights." In addressing this issue there have been substantial debates over the characteristics of animals which should or should not contribute to ascribing them a variety of "rights." In this context it should be noted that Singer does not use the term "rights" when speaking about the moral standing of animals. Rather, he develops a modified act utilitarian view based on the concept that animals have "interests" which are sufficient to make them worthy of moral consideration. In contrast, another significant proponent of protections for animals, Tom Regan, explicitly claims that animals do have rights, and these derive solely from the fact that an animal has inherent value. Because the animal is a subject-of-a-life, it has inherent value and is therefore to be treated as worthy of moral consideration (Regan, 1983)

Bentham's idea of "equal consideration" has been expressed in modern vernacular as follows:

At a practical level, equal consideration for animals would rule out, most importantly, the routine overriding of animals' interests in the name of human benefit. While equal consideration is compatible with different ethical theories, it is incompatible – if extended to animals – with all views that see animals as essentially resources for our use. Equal consideration may be compatible with some use of animals (and perhaps even human – think of conscription) for human purposes. But unequal consideration implies that animals and humans have such fundamentally different moral standings that the two exist in a hierarchy in which those at the top may regard those beneath as resources for bettering their own lives. (DeGrazia, 1996).

Animal rights lawyer and advocate, Gary Francione argues for the basic right of an animal not to be treated as a thing. "The basic right not to be treated as a thing is the minimal condition for membership in the moral community.... the basic right provides essential protections." This is equated with the concept of Equal Inherent Value (compare Bentham) which is interpreted to mean that one human is equal at a moral level to any other human, but not necessarily for all purposes. "Although there is certainly a great deal of disagreement about precisely what rights human beings have, it is clear that we now regard every human being as holding the right not to be treated exclusively as a means to the end of another. This is a basic right, and it is different from all other rights; it is a pre-legal right in that it is a necessary prerequisite to the enjoyment of any other right" (Francione, 2000). It is interesting to note that this formulation is Kantian in its essence, but has much different connotations in this context.

What are the specific characteristics which prompt these writers to assert the positions that they do, and can we, for our purposes here, learn anything from those factors? For Regan, subject-of-a-life means that individuals "have beliefs and desires; perception, memory, and a sense of the future, including their own future; an emotional life together with feelings of pleasure and pain; preference and welfare-interests; the ability to initiate action in pursuit of their desires and goals; a psychophysical identity over time; and an individual welfare in the sense that their experiential life fares well or ill for them, logically independent of their utility for others and logically independent of their being the object of anyone else's interests." Regan (1983)

Others have made similar arguments with similar listings of characteristics arguably possessed by animals. For example, "nociception, consciousness, pain, distress, fear, anxiety, suffering, pleasure enjoyments, happiness, desires (and conation generally), concepts, beliefs, thinking, expectations, memory, intentional action, self-awareness, language, moral agency and autonomy," have all been considered relevant mental states which are used as measures of whether animals should be ascribed rights (DeGrazia, 1996).

In Francione's view, sentience, in the sense of the capacity to have perceptual experiences, particularly pain and pleasure, is sufficient to invoke the full panoply of moral protections for an animal species. But it is suggested that this means nothing more than that the animals are moral subjects, it does not mean that they have the status of moral agents. By this I mean that it is absurd to think that a well-fed cat could be criminally charged with the equivalent of manslaughter for killing a mouse, not for food, but simply for "pleasure." Mary Midgley has noted that there is nothing inconsistent with treating animals differently from one another or from humans so long as their intrinsic nature is safeguarded (Midgley, 1983).

As we can see, there is a well developed vocabulary concerning the assigning of moral consideration to animals. The same is not true with regard to the status as legal persons. While it is true that there exist numerous anti-cruelty statutes, these do not extend to allowing the animal itself to assert rights on its own behalf. Rather, they are Kantian in outlook, addressed more to man's actions and not to the intrinsic worth of the animal (Francione, 2000). We can see therefore, that the debate concerning animal rights extends from the concept that animals have no inherent rights because they are merely property, to the view that they are entities which are entitled to have their interests considered and weighed when making moral choices, and finally to the position that they are entities which are given full moral consideration simply because they are subjects-of-a-life and more than things. In sum, animal rights can be viewed as a reaction to the concept that animals are merely property to be exploited by humans as they see fit. Animals are now viewed as having rights or interests sufficient to cause us to ascribe to them moral weight, and they cannot simply be treated as commodities for man's use and benefit. The significance and scope of the particular characteristics required for this ascription are still not clearly formulated. Once established they lead to treating animals as moral person, but do not necessarily lead to them being viewed as legal persons.

### **The Analogy**

My task here is to examine whether we can articulate a similar set of assumptions and apply them to an android. The analogy I propose can be expressed in the following way. Animals in the past were viewed as property. Because they were property and did not have immortal souls, they were available for man to exploit. As the result of modern science, animals have been shown to possess, in varying degrees, characteristics which, taken in the aggregate, make them something more than inanimate objects like trees or rocks but less than human. These characteristics, to the extent they are a valid basis for us to assert that animals have a claim to moral consideration, are similar to characteristics designers are seeking to instantiate in androids. If the designers succeed in a meaningful way with the task they have set for themselves, then logically, androids, or someone acting on their behalf in some form of

guardianship relationship, could assert claims to moral consideration in a manner similar to those claimed for animals.

The analogy cannot be pressed in a facile manner without further analysis because, unlike animals, which are born and develop free of direct human interference, androids, by definition, are initially created by humans. The fact of human creation makes it difficult to draw a direct parallel with animals and makes the android more like a machine or a piece of property. On the other hand, this also means that if some factor is missing in an android, a factor that might argue against it having a certain claim or status, that missing something can be added by the designers. This significant difference between an animal and an android means that even if animals are not legal persons because they do not have some quality, it does not mean that androids cannot be given that quality. We must therefore examine both the similarities and the distinctions between the two in some detail to test the validity of the analogy.

### **Androids**

The divergence between animals and androids appears on at least two fundamental levels, both of which have relevance from our perspective. On one level, animals are recognized as having intrinsic autonomy. It is beyond the scope of this paper to examine the philosophical concept of autonomy, or developments in the field of autonomous software agents, consequently, I am satisfied to assert the trivial definition of autonomy as being the independence from an obvious programmer or direction giver. People have little conceptual problem understanding that a cat, for example, "has a mind of its own." The same cannot be said initially about an android, even though as we will see later, the ascription of anthropomorphic characteristics to such creations can confuse the issue. Most people would recognize that the android is a "mere machine," and, because this is the case, it needs to be programmed in some fashion by a human creator. This human programmer in turn has to determine the rules and regulations which will govern the conduct of the android both as it interacts with humans and also with other entities. Hugo deGaris (1989;1990), suggests that this may in fact not be possible if the android (in de Garis' terminology an "artilect") can truly evolve its way around any such constraints. The basic problem caused by the issues of autonomy is that without it, it is difficult to ascribe rights and duties in any meaningful way. The android cannot be the object of moral consideration if it is bounded by constraints imposed upon it by its "creator" or programmer. If the android is bounded by inherent, predetermined constraints, such as those contained in Asimov's well known Laws of Robotics, (Asimov, 1950), most observers would argue that it is not truly free to make choices. The question of determinism and free will is also beyond the scope of this paper. Suffice it to say that there are those who would argue that even humans are not free in this sense.

If the android is not capable of being autonomous it will always be property. So long as it is a “machine” it will never be entitled to moral consideration but will always be viewed by humans as property over which humans have exclusive control. This does not cause a problem to society because assigning legal responsibility for the actions of the android to its human designers and builders is conceptually well within the ambit of current legal structures (Heckman, 1999). I have suggested elsewhere that it is possible in theory to argue that a machine could be designed around this problem and become autonomous for legal purposes (Calverley, 2005).

A second point of divergence between animals and androids occurs with the suggestion that the android can, at least potentially, exhibit the same attributes of consciousness as can a human. In other words, because it is created by humans, it can be given any of the required characteristics, once we have determined that those are the necessary and sufficient characteristics to create consciousness. The question of what consciousness is, and what are the attributes which constitute consciousness in humans is one of the major themes in current debates in philosophy of mind. While numerous attributes have been identified and suggested by philosophers there does not seem to be any clear consensus about what constitutes even the most minimal criteria for ascribing consciousness to a human, let alone an animal or an android. Nonetheless, if we take as an assumption that once those characteristics are identified which distinguish “humans” from “animals,” there is the possibility that androids can be designed to bridge this gap. We are then able to see that this puts androids into a different category of concern than animals.

Before addressing the analogy further, I believe it is necessary to point out that another problem with terminology needs to be recognized in order to compare animals and androids. In order for the “rights” argument to have coherence, we need to define what we view as rights holders. Legal theory has historically drawn a distinction between property and person, but with the implicit understanding that person equates to human. Until recently there had not been a need to make more precise distinctions. Since the expression of different opinions by Strawson (1959) and Ayers (1963), the concept of human and person has become much less clear. In order to define a category of right holder which is distinguishable from human, but nonetheless comprehensible, we can resort, as has been done in the past, to a form of “fiction.” This proposition is subject to much debate, but at least one generally accepted instance where the fiction has been used can be shown by the comparison between a being of the species “*homo sapiens*” and the legal concept of the corporation as a person (Note, 1987). I suggest that with regard to androids, we avoid relying on this fiction by making a clear distinction between what we define as a “human” and what we define as a “person.” My starting proposition is that all humans are persons but not all persons are human, and it is functionality, which defines the category of legal person.

Only when a legal system has abandoned clan or family responsibility, and individuals are seen as primary agents, does the class of persons coincide with the class of biological individual human beings. In principle, and often in law, they need not.... The issue of whether the class of persons exactly coincides with the class of biologically defined human being – whether corporations, Venusians, mongolian idiots, and fetuses are persons – is in part a conceptual question. It is a question about whether the relevant base for the classification of persons requires attention to whether things look like “us,” whether they are made out of stuff like “ours,” or whether it is enough that they function as we take “ourselves” to function. If Venusians and robots come to be thought of as persons, at least part of the argument that will establish them will be that they function as we do: that while they are not the same organisms that we are, they are in the appropriate sense the same type of organism or entity. (Rorty, 1976)

The distinction between human and person is controversial. For example, in the sanctity of life debate currently being played out in the United States, serious arguments are addressed to the question whether a human fetus becomes a person at conception, or at a later point of viability. Similar questions attach at the end of life: do humans in a persistent vegetative state lose the status of legal person while still remaining human at the genetic level. Likewise, children or mental incompetents are treated as persons for some purposes but not for all, despite the fact they are clearly human. As an aside it should be pointed out that the question of whether a corporation is merely an artificial entity or a natural entity in its own right is a distinction in American law with a long history of debate (Note, 1987). Personhood can be defined in a way which gives moral and legal weight to attributes which we ultimately define as relevant without the requirement that the entity either be given the full legal rights of humans or burden them with the duties those rights imply.

Returning then to our consideration of the posed analogy, if the designers and builders of non-biological machines are correct, there will come a point where at least functionally speaking, a synthetically created being could achieve some of the attributes, and exhibit some of the same characteristics which we have identified as factors in determining that animals are entitled to moral consideration. It is at this point along the development continuum that the android will arguably become a moral subject because of intrinsic qualities it possesses. Taking this point to the next level of abstraction we are presented with the possibility that such an android could, if intentionally designed, plausibly be viewed as having the potentiality to become something more than mere property, and in fact could be viewed as being a subject-of-a-life. If, as argued by modern philosophers, particularly of the reductive materialistic view, humans are nothing more than electrical impulses in a biological substrate which are capable of being fully replicated so long as we use a sufficiently complex method of reproduction, is there any difference between the end

result of a purely biological procreative process of life such as that which we humans now engage in, the process which takes place in a petri dish with artificial insemination, or the development through emergence of an android based on mathematical algorithms?

From a Catholic religious perspective, without an “ensoulment” event, as we have discussed, any such android would remain a non-human, incapable of ever assuming a position of moral equivalence with humans. From a functionalist point of view, and perhaps even that of a Shinto devotee, however, the premise may be different. If the android is functionally equivalent to a human in the way it acts, responds to multiple stimuli, and exhibits behavioral characteristics associated with humans, then there is no reason to make a distinction between the biological and the non-biological substrate (Ryle, 1949).

An example of a system, which is arguably functionally conscious, is the software program IDA, described by Franklin (2003). According to Franklin, IDA’s design parameters include factors such as perception, working memory, associative memory, emotion, consciousness in the sense of awareness of factors to act upon, action selection, constraint satisfaction, deliberation, voluntary action, negotiation, metacognition, and learning. In a later article, Franklin (2005) has suggested that the characteristics exhibited by IDA may even approach phenomenal consciousness. However, none of the characteristics he describes as existing at a functionally conscious level attach in a meaningful way such that IDA can be given moral consideration. This point needs further development beyond the scope of this paper, but it implies that the delineation of functional characteristics sufficient for moral consideration is well beyond what has so far been achieved.

In a similar vein, the listed attributes are clearly not sufficient to make IDA a legal person in the classical sense of being able to own property and have standing to sue or be sued. This raises the possibility that a legal definition of person may also require a different set of criteria from the psychological or philosophical definition of consciousness. In Solum (1992) it has been suggested, for example, that the legally conscious machine has to be a rational actor, a factor we saw earlier is the hallmark of current legal systems based on classical natural rights theories. That same article identifies some other legal characteristics that come into play when one begins this type of analysis. My suggestion is that without a thorough understanding of the legal concepts of property and person, and how these relate to the attribution of rights, we will not be able to determine when an android is a legal person. While the law of property has been exhaustively analyzed, and has become one of the foundation courses in the modern legal curriculum, the same is not true of the law of persons. Again, this research remains to be done.

The IDA project does, however, raise the possibility that a plausible scenario within which to imagine moral consideration for an android presents itself the moment we begin to ascribe anthropomorphic characteristics to the

android. Rodney Brooks (2002) has stated that with regard to robots, he will know that he is getting close to his goal when his graduate students feel guilty turning the robot off. If we are able to create an android which seems to be close to human in its capabilities and appearance, particularly one to which we are willing to cede significant areas of responsibility for things such as cleaning our houses, maintaining our possessions and even raising our children, it is very easy to imagine the extension of certain, if not many, of the same moral considerations we are prepared to extend to animals. As suggested earlier, I question the conclusion that the current characteristics exhibited by IDA are sufficient to warrant moral consideration. However, what it does indicate, I believe, is that there is fertile ground for empirical research into the myriad questions this position raises. One of the first steps has already been taken, and that is the development of an android that will allow researchers to study how humans interact with robots (Minato et al., 2004). If subjects respond to androids which speak (Arita et al., 2005), or exhibit facial characteristics which evoke emotional responses (Breazeal, 2002), then perhaps we can begin to determine what functional characteristics people will find to be the significant factors in this process of ascription of moral consideration. Is it empathy, language awareness, bi-pedalism, physical or psychic pain, or some other grouping of human isomorphic characteristics that are the determinative factors?

As mentioned earlier, there is a distinction between animals and androids. However, as an android develops a greater repertoire of anthropomorphic characteristics I suggest that this divide may diminish. If a legal system has a bias toward legal positivism, then a likely outcome, if faced with the actuality of a conscious android, which exhibits significant levels of functional consciousness, is to ascribe a particular status to such an artifact based on those actions or even the capability to act. In the starkest formulation of this position, one devoid of any moral connotations, the android would be deemed to be a legal person solely because the relevant society decided it was necessary to be regulated. This is a response much like the one initially used to regulate the operation of corporations. It is driven by the same factors driving the animal rights debate and is, for the most part, utilitarian based and pragmatic in its orientation. On the other hand, if one has a bias toward a more natural law view, an increase in the anthropomorphic characteristics could lead one to argue that a machine consciousness has intrinsic rights derived solely from its independent moral value particularly if those values are similar to those we now ascribe to animals. To the extent these attributes seem to be closer to “human” attributes, the greater the likelihood protection will be extended. One unique, and isolated, example of legislation in this vein is the Endangered Species Act, which requires consideration to be given to an identified category of animal species on the premise that they have intrinsic value which needs to be protected from extinction, in other words, they are the subject-of-a-life.

To the extent that the analogy we are considering is valid, we need to be mindful that it could lead to consequences unforeseen by robot engineers and software programmers. In theory, if one is creating an android by an emergent process, (deGaris, 1990), at some point in that process, the subject of the experiment will reach a level of functioning which implicates the moral concerns we have been examining with respect to animals. If this is accepted as a likely scenario, the question then becomes whether this crosses the line into morally unacceptable experimentation, or becomes subject to legal constraints. We must be prepared to recognize that this effort may have unintended consequences. One of the best examples of how such concerns could find expression, and an example which sets forth some of the deep moral risk this would engender, appears in literature in the story of Dr. Frankenstein. There, the creature he imbued with life expresses the same type of angst that one would expect to result from the creation of an android with anthropomorphic characteristics but no means to live its life to the fullest. The ultimate demand of the “monster” was that he be provided with “a creature of another sex, but as hideous as myself.” In the latter half of the twentieth century it is conceivable to argue that the monster could have found legal redress under the Universal Declaration of Human Rights Art. 16, UN Gen. Ass. Res. 217A (III) (1948), or the European Convention on Human Rights (1953), both of which specifically protect the right to private and family life. Other examples are the subject of popular recent films such as “AI,” “Bicentennial Man,” and “Terminator.” If an android with external human characteristics, perhaps even the “nannybot” which raised us, exhibited this same range of activities, it is possible that most people would say that the creation has a claim to be treated morally. Again, much work needs to be done in this area because there is at least some evidence that people have negative reactions to robots that are too human in appearance (Minato et al., 2004).

Another aspect of this possible unintended consequence derives from the fact that it is viewed as unethical to perform medical experiments on human subjects without their clear and unequivocal informed consent. The judgment at the war crimes tribunal at Nuremberg following World War II established ten rules to be applied to experimentation on human subjects. The first of these explicitly stated that: “The voluntary consent of the human subject is absolutely essential. This means that the person involved should have legal capacity to give consent; should be so situated as to be able to exercise free power of choice, without the intervention of any element of force, fraud, deceit, duress, over-reaching, or other ulterior form of constraint or coercion; and should have sufficient knowledge and comprehension of the elements of the subject matter involved as to enable him to make an understanding and enlightened decision” (Trials—, 1949). Informed consent by a competent, autonomous individual is viewed as the cornerstone upon which ethical experimentation must be grounded (Smith, 1993; Garrison and Schneider, 2003).

Until the latter part of the twentieth century, there were many less constraints on the ability to perform medical experiments on persons with diminished capacities such as those with serious mental problems, or operating under some other form of legal disability such as being a person confined to prison for a felony. Today, even in these formerly accepted areas, constraints exist (Frost and Bonnie, 2001).

Exploring this line a little further we recognize that in the case of animals, more specifically the higher order mammals such as the great ape or the dolphin, strict constraints on experimentation are applicable under current laws. As noted above, arguments can be made that a wide range of attributes, sentience being only one of them, are sufficient to cause animals to be viewed as proper subjects of moral concern. What then are the implications of such a conclusion if our analogy holds true and the object of concern is an android that is in the process of being created from scratch, so to speak? If the entities do not rise to the level of conscious machines, such as a special purpose robot, or industrial welding machine, which can “think” enough to tell us when our car fender is properly affixed, then there is little to give us moral concern about how it is treated (Brooks, 2002). However, the more attributes that the android has, or could potentially develop, the greater the risk that it could implicate moral concerns.

As posed by LaChat, the question becomes, “Is the AI experiment then immoral from its inception, assuming, that is, that the end (*telos*) of the experiment is the production of a person?” The author also raises the possibility that, “An AI experiment that aims at producing a self-reflexively conscious and communicative “person” is *prima facie* immoral” (LaChat, 1986). To change the question slightly, rather than requiring the end to be a person, is it sufficient to ask whether the end is a morally significant being, that is, one that has rights because it is a conscious being? Does this make the experimentation any less fraught with ethical concerns? If the answer to this question is that the end point does not make a difference, then there is no reason why the android cannot be treated in an analogous fashion to animals and brought within a similar regime aimed at protecting it from human experimentation.

From a classical hedonistic utilitarian point of view there is a rational argument which can be articulated for the proposition that the utility of the creation of an android is, in and of itself, sufficient to outweigh the moral and ethical damage done by the experiment on an object with moral rights. While this school of thought has been severely criticized by proponents of liberal individualism it still has modern protagonists (Tännsjö, 1998). From the viewpoint of most utilitarian philosophers, Bentham and Mill, as well as later day proponents, they probably would always weigh humans higher on the scale when compared to the android. Tom Regan, even though a strong proponent of animal rights, has gone so far as to state that one human outweighs a million dogs in a moral sense. In this weighting, the overall potential for long term good to humanity would

weigh heavily in favor of proceeding with the creation of an android.

A strict interpretation of classical natural rights theory would also say that the creation and exploitation of an android is allowed. So long as the android does not have a soul it can be viewed as property. On the other hand, what about the inherent rights of the android? If we assume that the android has sufficient capability, either inherently, or because it is part of a group where the average mature individual has those characteristics which are central to moral consideration, then it is conceivable to view the rights more from the perspective of liberal individualism and look to ascribe the android, as an individual, with “natural rights.” The logical extension of this is to ascribe rights simply by virtue of the fact of the android’s existence with a certain level of relevant characteristics. This in turn could lead us into the same debate which has embroiled the issue of abortion for the last thirty years: If the end product is a being with rights, at what point along the development continuum do those rights attach? If, as argued on behalf of animals, the android, because it exhibits attributes we associate with consciousness, has an interest in existing, then it has interests sufficient to give it moral weight. It must then be considered in all discussions affecting its well-being and no longer can be considered property.

I believe that the answer to some of the speculative issues posed depends in large part on the philosophical tradition upon which one draws for validation. By this I mean that if designers and engineers are going to be prepared to address criticism of their work, not by their peers on a technical level, but by the community at large, they need to be aware of value systems and views different from their own. It was the failure to take this broader social context into account that has led to the significant difficulties encountered with genetically modified organisms, and is in large part at the center of the “sanctity of life” debate today. In point of fact, it was many of these underlying concerns which drove the attempt to patent a “chimera”; an attempt which failed when it was determined that such a being could not be patented because that would lead to patenting human life. Scientists and engineers must be sensitive to the charge of what I call “scientific hubris”: the idea that they should build something simply because they have the technical capability to accomplish the task.

## Conclusion

Returning to the analogy posed as the theme of this discussion, I believe that notwithstanding the divergence between animals and androids, the way in which animals are viewed as moral objects worthy of consideration is a meaningful way to look at androids. If the android exhibits characteristics that are similar to those we are willing to recognize as imparting moral consideration to animals, then treating the android as a being with value, at least in Kant’s terms, enhances our own self worth. To do something different would demean us as humans and could even be viewed as a form of speciesism (Ryder, 1989). If the

development of the android is one that scales up from the dumb toy level to something that exhibits degrees of functional consciousness, then more nuanced consideration of the ethical implications will be warranted. I believe significant areas of careful research remain to be done to understand exactly what are the qualities people will accept as providing a basis for ascription of moral worth at the various stages of android development.

A long tradition of moral and ethical thought in the area of animal rights gives us some basis upon which to begin to ground speculation concerning the possible attribution of moral rights to androids. Once we begin however, we may find that these same threads lead to conclusions about the way to create an android that could give rise to forces bent on curtailing the process. Once people begin to consider the moral implications of the development process of an android, implications for other aspects of life loom large. Not only do we have to consider the impact upon humanity itself, but to be internally consistent we have to consider the impact on the android; our creation which may plausibly argue, at some point in time, that it is a new form of being capable of being viewed as a moral subject. The analogy proposed by this paper is workable and valid at the level of ascription of moral consideration to androids. However, it is of limited utility when we attempt to determine if the android can be considered a legal person. Part of this uncertainty arises from the imprecise understanding of the concept of a legal person and its application to non-biological objects. But this imprecision will not last for long once society is faced with an actual entity making a claim to rights. The challenge for android science is to move the scientific and technical frontier forward without stumbling over the moral and legal issues implicit in that task.

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