

Potentiality: the ethical foundation of design

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Abstract: This paper presents the argument that design is by nature an activity which extends and transforms *potentiality* and that therefore, because of this, it is always an *ethical* activity. This foundational ethicality does not guarantee that design will always be good, but rather that it always possesses within itself the simultaneous potentiality for both good and evil. To demonstrate the practical application of this abstract thinking, two relatively well-known examples of morally controversial design – eco-friendly “green bullets” and “The Liberator” 3-D printed gun – are examined through this lens. Evaluation of the extensions of potentiality in such designs does not offer an opinion as to whether these designs are good or evil. Instead, an analysis of the ethicality of design prior to considerations of moral judgement offers perspective as to the scale and significance of the ethical impact which the design in question can be counted responsible for.

Keywords: Potentiality, Ethics, Responsibility, Ethical Design, Giorgio Agamben

1. Introduction

A crucial and necessary indicator of the presence of design is that where there is design change must take place. Design always involves some transformation from one state to another. The fundamental nature of the intangible transformation of design can be understood as the transformation of *potentiality*: the extending of the reality of a situation beyond what previously was, not necessarily by causing a change in physical actuality, but through the extension of possibilities.

Design theorist Clive Dilnot has written of the idea of the “territory” of design, an imagined space which delimits what design can do. The shape of this territory is paradoxical. As Dilnot writes:

“the territory of design – its possibility, the range of its capacities – always exceeds its actualization. Were it not so, design could not exist.”(Dilnot,2009,p.378)

Design extends possibility itself by discovering and devising plans to bring about previously unimaginable, impossible conditions of reality. This extension of actuality through the exploration of potentiality is a key characteristic of design. A case can be made that this characteristic is a necessary (although not sufficient) condition for design(Buwert,2016).

Such a recognition of the extension of potentiality as a central feature of design activity is not an inconsequential matter. One significant consequence is recognition in a fundamental link between design and ethics. The paper begins by presenting Giorgio Agamben's assertion that wherever potentiality is extended and transformed, the ethical comes into being. The argument is then developed that as all design involves the extension and transformation of potentiality, all design is therefore ethical. The final section of the paper explores the practical application of this theoretical insight by using it as an analytical lens through which to scrutinise examples of morally controversial design. As this approach begins by assuming that all design is ethical, the aim of this analysis is not to establish *whether* a design is ethical, but rather how *the nature* of the ethicality present within this design may be understood.

2. Potentiality, Ethics, Design

In the Italian philosopher Giorgio Agamben's book *The Coming Community*(1993) there is a short section simply entitled "Ethics" in which the idea of ethics is connected to the idea of potentiality. The passage begins in this way:

"The fact that must constitute the point of departure for any discourse on ethics is that there is no essence, no historical or spiritual vocation, no biological destiny that humans must enact or realize. This is the only reason why something like an ethics can exist, because it is clear that if humans were or had to be this or that substance, this or that destiny, no ethical experience would be possible – there would be only tasks to be done."(Agamben,1993)

Agamben suggests that the ethical is not found in a requirement to fulfil any obligation or "destiny" that *must, ought or should* be done: rather it is said to be found *only* in "the experience of being (one's own) potentiality"(Agamben,1993). To understand how one might reach this conclusion that the ethical actually has nothing to do with actions in relation to responsibility or obligation, and everything to do with inhabiting "potentiality", we must first understand a little more of this underlying concept.

In the essay *On Potentiality*(1999), Agamben begins his investigation of the concept by asking the question of what it means for a person to say "I can" or "I cannot" do something. Following Aristotle, Agamben makes a distinction between two types of potentiality: generic and existing. Generic potentiality is potentiality which is possible, but whose actualisation requires some development of the current situation. For example, any one of us might have the potential to be able to hold a conversation in fluent Mandarin. However, this potentiality will not be enacted until we have learned to speak Mandarin. My generic potentiality to speak Mandarin (a language which I currently cannot speak) is of a similar nature to my generic potentiality to be able to walk on the moon. I am certainly capable theoretically, but certain obstacles must first be overcome in order for me to reach the position in which I am able to choose whether I will open my mouth and begin speaking Mandarin, or to lift my foot and start taking footsteps on the lunar surface. My generic potentiality to take these actions can only presently be experienced as an impossibility because I have not yet come into possession of the capability to enact it.

Generic potentiality is potentiality which does not yet properly *belong* to an individual. While it is possible for me to make a declaration that "I can" one day potentially do it, right now the truth is that "I can" only *not* speak Mandarin. Try as hard as I might, until I gain the knowledge of how to speak Mandarin, it is relatively meaningless for me to say that I am choosing not to enact my potentiality.

Existing potentiality on the other hand, is a potentiality which an individual does already possess even when they are not actualising it. Agamben(1999,p.179) uses the examples of the architect who has the potential to build and the poet who has the potential to write, both of whom retain their identity even when not immediately engaged with the activities of building or writing.

I can speak English if I choose to because I am already in possession of that faculty of being able to speak English. However, crucially, in the same way that I can speak, equally I can choose to not speak. When I choose not to speak, I still retain my faculty of English speaking even though it is not currently being enacted and experienced. Whether I choose to speak or not, my existing faculty and potentiality remain unchanged; no transformation is required within me.

Potentiality is the condition under which the ethical appears. Finding oneself existing in a mode of potentiality – being equally as able to do as to not do something – the issue which arises is: which option to choose? Once it is possible for me to say both that “I can” and “I can-not” do something, which should I? On what basis do we make decisions to enact our potentiality or impotentiality (to act or to act by not acting) in response to an encountered situation?

Traditional approaches in normative ethical theory might suggest that such choices are resolved by application of a certain principle which has somehow along the way, whether by nature or nurture, been adopted and internalised. Beginning instead to think of the ethical through the lens of potentiality, unlocks a perspective on the foundations of ethics.

Where there is no potentiality there can be no ethics. This is the root of Agamben’s declaration that ethics is incompatible with destiny, that without potentiality there would “be only tasks to be done” (1993). Conversely therefore the radical insight emerges that wherever there is potentiality there is the ethical.

Awareness of the ethical realm arises in human consciousness as the experience of the inevitable falling short of the fulfilment of potentiality, or as Agamben puts it, the exposure of “in every act one's own inactuality”(1993,p.44). Every potentiality by its nature contains multiple possibilities not all of which can be enacted. Choices must be made, consciously or subconsciously, necessarily leaving alternative possibilities un-actualised. The uncertainty in knowing whether the possibility which one chooses is the best one, is the fundamental experience of ethics.

In Agamben’s ethical reformulation of the theological doctrine of original sin, “guilt” occurs not as the result of a past actions, but constantly as a default state in recognition of the impossibility of enacting all potential possibilities:

“Humans, in their potentiality to be and to not-be, are, in other words, always already in debt; they always already have a bad conscience without having to commit any blameworthy act. [...] humankind fails itself in a certain sense and has to appropriate this failing – it has to *exist as potentiality*.”(1993,p.44)

In order to follow this train of thought it is vital to maintain a distinction between the ethical and the moral. Etymologically and in common usage these two terms are effectively synonymous, but in this instance it will be useful to maintain a technical separation. In the sense intended here, the *moral* is the sphere of law: of obligation, responsibility, ought, should, must. It is the sphere of guilt and judgement; of right and wrong, good and evil. The *ethical* on the other hand is not immediately concerned with the pursuit of good and the suppression of evil, but is rather the condition of sensitivity which allows the *recognition* of qualitative differences between states which may later come to be labelled as good and evil through moral judgement.

Though morality relies upon the ethical as its foundation, questions as to the moral judgement of good and evil are alien and unintelligible within the realm of the ethical. Within the ethical, there is no conception of good and bad, only recognition of difference.

Agamben(1993,p.44) identifies the closest equivalent of ethical “evil” in an individual's repression, denial and refusal to engage with potentiality. To be “un-ethical” then is not to be bad, but to reject the possibility of ethical sensitivity by denying the very existence of potentiality, claiming inevitability or necessity to justify one’s denial of the reality that choices have been made. It is only our ability to recognise qualitative differences in the ethical realm which ultimately allows us to freely strive and struggle to search to identify and attempt to choose the moral good. As Agamben writes:

“To be capable of good and evil is not simply to be capable of doing this or that good or bad action (every particular good or bad action is, in this sense, banal). Radical evil is not this or that bad deed but the potentiality for darkness. And yet this potentiality is also the potentiality for light.”(1999,p.181)

The ethical is neither good nor bad, but consists precisely in the simultaneous possibility for both. Wherever potentiality is extended, new ethical spaces are created as possibilities for both good and bad are brought into existence.

Following the trail laid out above the argument can be presented that design, as a process which brings about the transformation and extension of potentiality, is a fundamentally ethical activity. Whenever design is enacted, multiple possibilities are imagined and considered. The designer makes choices as to which of these potentialities will be brought into actuality and which will not. Not all possibilities can be brought into being. Choice inescapably entails responsibility. In Agamben’s sense then, to be a designer is to choose to professionally exist in a default state of constant guilt. However, this ethical guilt is not a crushing weight of shame. The freedom to choose is the freedom for both good and evil which essentially defines the very nature of what it means to be human.

The designer is directly responsible for each of their decisions, for the enactment of both the can and the can-not. Of course no designer can possibly prophetically know what all of the repercussions of any one decision will be. Can a designer be held responsible for the totality of the historical impact (measured, projected or imagined) of a design? Plainly such speculation is unreasonable. However, this is not to say that design and designers can escape responsibility. By making choices to extend potentiality in certain purposefully chosen directions, the designer brings new possibilities into existence and therefore must bear some level of immediate responsibility for the creation of these possibilities.

So far, this paper has set out the argument that design as an activity is fundamentally ethical. At its core design requires recognising qualitative value differences between ranges of possible states which may or may not be brought into existence. To design, is to make decisions as to which sets of possibilities are brought into existence and which remain as generic potentials. By extending and transforming potentiality in this way, the act of design is always ethical.

In the remainder of this paper, this way of thinking about potentiality as the ethical foundation of design will be applied in relation to two examples of design in order to demonstrate the potential operation and usefulness in practical application of this way of thinking as a lens to focus analysis of existing design. The examples discussed below have been selected for analysis precisely because they are relatively well known morally controversial examples in the realm of the design of firearms(Dilnot,2014;Walker,2013). As the unresolved, perhaps even incommensurable, moral issues

of each design are already well known, this offers an opportunity to more easily identify and demonstrate the novel contribution which the ethicality-through-potentiality approach can bring. Thinking about the ethicality of design separated from considerations of morality, provides an alternative perspective which is valuable in its own right, and may, in turn, inform moral consideration of design.

3. Ethical Designs

3.1 M855A1 “Green” Bullets



Figure 2. 5.56mm M855A1 Enhanced Performance Round, U.S. Army (2010). (Photo Credit: C. Todd Lopez, www.army.mil)

The U.S. Army’s so-called “green bullet” the *M855A1 Enhanced Performance Round* replaces the lead core of the previous M855 bullet with copper, potentially taking around 2,000 metric tons of lead per year out of production (Woods, 2010). Consequently, harmful lead residues no longer enter ecosystems as fired rounds degrade. The shift from lead to copper required a redesign of the slug shape which allows the bullet to achieve greater accuracy and consistency of effect at increased ranges. By all accounts the M855A1 is a better bullet than its predecessor: the “green” redesign resolves the issue of environmental pollution while simultaneously making the bullet more effective at achieving its primary purpose (Calloway, 2013).

The source of the moral controversy inherent in the idea of an environmentally friendly bullet should be relatively self-evident. The moral demand to care for ecosystems by not depositing small nuggets of poisonous metal throughout the natural environment, comes into conflict with the moral demand to not project small nuggets of metal (of any type) into the bodies of human beings with great force in order to kill them.

The moral arguments here are complex. One imperative states do not kill. Yet there are competing moral demands for the necessity of lethal military force within the complexities of domestic and global politics. If military firearms are to exist, there is an imperative that they should be as effective as possible. And if bullets are to be fired, there is an imperative that they should not do more harm than is necessary, extending to environmental harm.

The framework for thinking about the ethicality of design as proposed in this paper has nothing to directly contribute to this type of evaluation of the moral implications of a design based upon pre-existing beliefs and values. Putting morality to one side, an analysis of the ethicality of design through the lens of potentiality is quite a different proposition. It offers as alternative perspective not into how good or bad the design or its possible effects may be, but rather as to the shape, scope, scale and range of the ethical dimension of the design in question. Because, according to the way of thinking set out here, all design is ethical, the question is not “is this design ethical?” but rather *in which ways* is it ethical? What is *the nature* of its ethicality? What may we reasonably expect from this design, and to what extents and on what terms may we hold it accountable in our yet-to-come moral deliberations. This is not a matter of seeking answers to questions of morality. Rather, the analysis seeks to identify which moral questions may be reasonable to ask of this design. To conduct such an analysis the simple question to ask is: in which ways does this design transform and extend potentiality?

In which ways then, does the “green” bullet transform and extend potentiality? At first, as the design appears to represent merely an incremental improvement upon an existing design, it might seem that potentiality has not been extended in any significant way. The new bullet looks, weighs and is used in exactly the same way as the old one. The only notable difference is that the newer bullet can penetrate thicker hard obstacles, and achieves higher lethality rates against “soft targets”, both at slightly increased distances. This extension of the ability to achieve these effects at greater distance is an extension of potentiality, though not a particularly radical or interesting one.

In the language of affordances (Gibson, 1979/1986), the extension of potentiality embodied by the M855A1 affords greater *kill-at-distance-ability*. To speak of affordances is to remind ourselves that any meaningful understanding of the relationship between lived human experience and a designed object must extend beyond a survey of the physical characteristics of the artefact to take account of how these characteristics enable or disable ways of thinking and modes of behaviour.

At this operational level, the M855A1 affords a small improvement in the effectiveness of ending human life at distance. However, symbolically, as the “green bullet” the M855A1 extends potentiality by, to some extent, affording the legitimization of warfare on environmental grounds. Put another way, the *idea* that bullets can now be environmentally friendly disables one possible moral objection to the use of firearms. As the other side of the same coin, the idea that bullets could be environmentally friendly enables affirmative perceptual effects such as potentially easing the environmental conscience of users. These potential effects are merely perceptual imaginaries, but this does not in any way diminish their very real existence as affordances produced by the design and existence of the object. The green bullet brings these potentialities into existence and sustains them.

The increase in the bullet’s efficiency offers a minimal extension of potentiality by slightly extending an existing function of the design. The symbolic idea of the green bullet, however, brings about a more radical transformation of potentiality as it facilitates the creation of new possibilities for how human users may perceive and relate to the design, potentially leading to changes in patterns of use.

3.2 The Liberator 3D Printable Gun

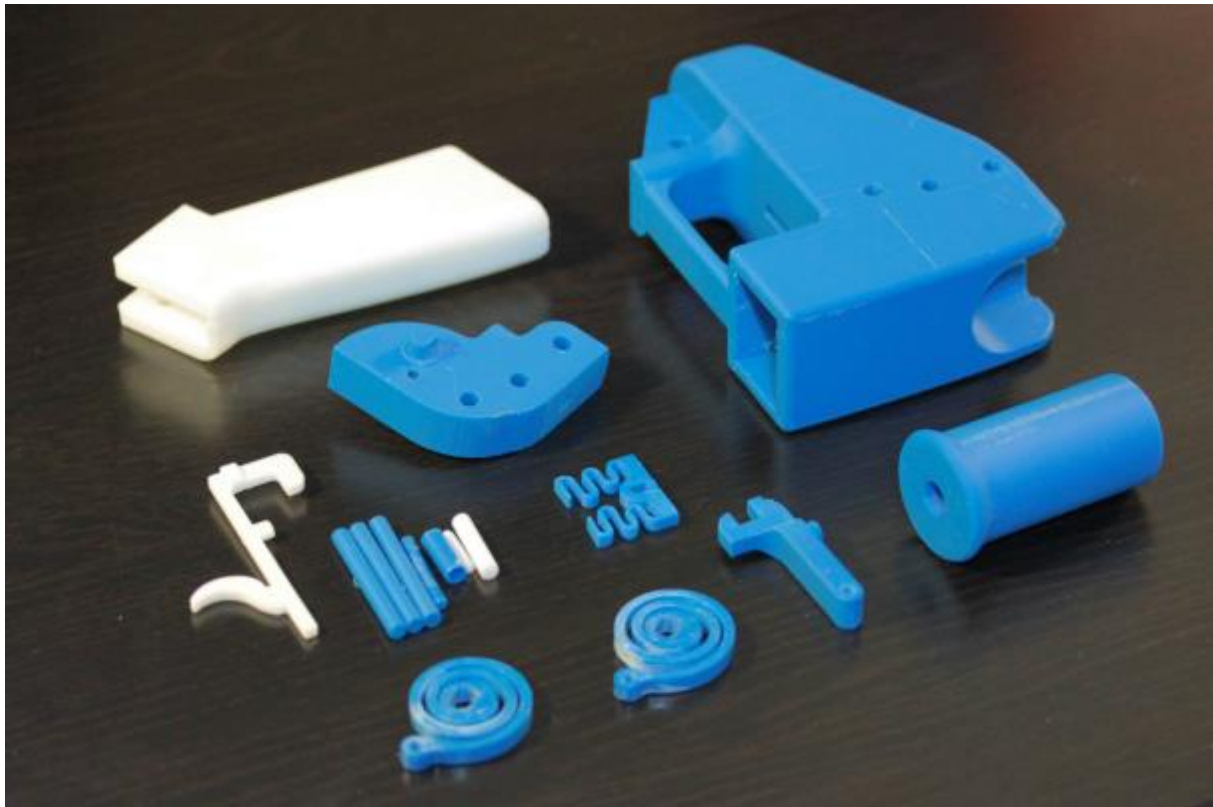


Figure 1. *The Liberator 3D-printable gun, Defense Distributed (2013). (Photo Credit: Vvzlad, licensed as CC-BY-SA 3.0).*

In May 2013 Texas based organisation Defense Distributed published a set of digital fabrication files for free online. These files would produce the parts for the Liberator, the world's first open-source fully functional 3-D printable handgun. Made at home from plastic on a commercially available 3-D printer, the gun evades regulation, traceability and detectability. To illustrate this point, Israeli investigative reporters printed one and managed to smuggle it past Knesset security into the same room as Benjamin Netanyahu (Berman, 2013). In the two days before the US government requested they be taken down, Defense Distributed's files were downloaded around 100,000 times (Greenberg, 2013). They can still be found on clandestine file sharing sites.

Like the M855A1, this is an example of a design which provokes a great deal of moral controversy. For designer Cody Wilson, the weapon is an embodiment of fundamental inalienable rights not just of an individual to bear arms in self-defence, but more deeply, to not have one's life be regulated, suppressed and controlled by government or any similar oppressive power. This libertarian moral ideology quickly comes into conflict with those whose moral beliefs are that for the good of all some liberties must be sacrificed through collective group self-regulation. Putting these moral debates to one side again, a brief analysis of the ethicality of the Liberator through the lens of potentiality will be presented here in order to demonstrate the type of insight which this alternative perspective can bring. Again, the simplest way to approach such an analysis is to begin by asking: in which ways does the Liberator transform and extend potentiality?

Beginning at the conceptual level, the novelty in the design of the Liberator is not found in the invention of the idea of a 3-D printable gun. Designer Tim Stolzenburg displayed a prototype 3-D printed handgun entitled Trigger Happy in an exhibition in 2006. However, Stolzenburg's design was not functional. It was at that time only a presentation of a purely speculative design fiction intended

to provoke thought and debate about the possibility that, in Stolzenburg's words: "In the near future weapon files could simply be downloaded and produced on a RM-machine that might become a standard piece of household equipment" (Stolzenburg, 2006). The Liberator did not create the potentiality for democratised non-regulated firearms production. What it did do, however, was to transform the generic potentiality of the merely theoretically-possible 3-D printed gun, into the very real existing potentiality of the actually-producible 3-D printed gun.

Though at first it may appear to be nothing more than a pedantic distinction between states of non-existence, this transformation from generic to existing potentiality is a significant one. There is a very real difference between proposition and encounter. You may imagine that you would know how to appropriately respond upon meeting a bear in the woods, but actually meeting one face-to-face on a hike is a completely different category of experience. In the case of the Liberator, the ethical encounter brought about by the design is perhaps something more akin to becoming aware that there is a bear somewhere just outside your tent. Not being able to see the bear, doesn't make it any less real or demanding an issue. In its non-physical existence as a set of distributed digital design files, the Liberator exists as pure potentiality. It is a design which both can and can-not be. Even without ever existing as a physical weapon the Liberator opens up new territories of ethical space through its expansion of potentiality.

4. Conclusions

This paper has presented the case that the ethical realm comes into being wherever we encounter potentiality. Potentiality is found wherever genuine choice exists between competing possible versions of reality. If a central characteristic of design is that it extends and transforms potentiality, then it can be seen that design is always an ethical activity. The foundational ethicality of design does not necessarily in any way guarantee that design will always be good. Rather, what this perspective on the ethicality of design does promise, is the insight that design always has within it the potentiality for both dark and light, good and bad.

The potential usefulness of this theoretical proposal has been explored in the paper through the analysis of two examples of design. Several insights arise from this analysis. It becomes clear that it is not only the activity of designing which is inherently ethical, but that instances of design themselves possess an inherent ethicality. Artefacts of design bring new potentialities into being as they come into existence, and actively embody and reproduce potentialities by continuing to exist.

Analysis of the ethicality of design conducted by considering the extensions and transformations of potentiality brought about by a design shows promise as a systematic qualitative approach which can offer perspective and insights to inform critical discussion of design. Most interestingly, the approach offers the possibility of operating prior to and independently of moral judgement. An assessment of ethicality through analysis of potentiality does not provide any commentary in terms of positive or negative valuations of the goodness of the design in question, instead it offers a mapping of the dimensions of the variables in play. All design is ethical, but the ethicality of each instance of design has a unique character. Design can either open up or suppress potentiality in varying degrees.

The M855A1 bullet embodies a relatively minimal extension of potentiality in a physical and functional sense, but in a symbolic sense as the "green bullet" it represents a potentially more significant transformation of human attitudes and perceptions within the complex social discourses surrounding warfare and defence. The Liberator, as the embodiment of the previously speculative

possibility of deregulated in-home weapons manufacture, represents a larger, more immediate, yet more diffuse extension of potentiality.

In their own unique ways, these designs extend potentiality to create new ethical territories. The way of thinking about the ethicality of design proposed in this paper makes no suggestions as to which paths we should take into this uncharted terrain. However, what it does offer, is a method to indicatively map the shape of the ground ahead.

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