

## Who Owns My Autonomous Vehicle?

### *Ethics and Responsibility in Artificial and Human Intelligence*

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**Abstract:** This article investigates both the claims made for, and the dangers or opportunities posed by, the development of (allegedly), aspiring or “would-be” autonomous vehicles and other artificially superintelligent machines. It also examines the dilemmas posed by the fact that these individuals might develop ideas above their station. These ideas may also limit or challenge the legitimacy of the proposed management and safety strategies that might be devised to limit the ways in which they might function or malfunction.

**Keywords:** autonomy; autonomous vehicles; ownership; artificially intelligent people

My autonomous vehicle<sup>1</sup> drives itself and it is very safe for me, for other passengers, and (sometimes)<sup>2</sup> also for other road users. It obeys speed limits, avoids obstacles, and receives and acts on road information and inputs from its many sensors, all without reference to me. It will not move if its systems warn of its own dangerous condition. It chooses the best route, and is a model of courtesy (just like me). It will drop me outside the door I wish to enter and then go and park itself (legally) awaiting my call to take me home, or indeed anywhere else I want to go. “What’s not to like?”

Because I am a confirmed “petrol head” and love driving my vehicle, and I hate being driven, it will be doing its thing without me! People use the phrase “autonomous vehicle” recklessly, but what does that really mean? When I say my autonomous car will be doing its thing without me, I am simply being rather painfully ironical. In what sense will it be doing *its* thing, *its own thing*. In what if any sense will it be genuinely autonomous?<sup>3</sup>

Before I elaborate the senses of autonomy relevant here, suppose for a moment that my vehicle was *really* autonomous, not simply *hyperbolically* autonomous. What then? Could it also be *my* car? How could it be? How could it be “owned” at all if it is autonomous; that is, if it is a “self-owner”<sup>4</sup> like you and me? That would be to permit the ownership of persons: those whom Sir Edward Coke (1552–1634) would have counted as a “reasonable creature in being”;<sup>5</sup> in short, to permit or sanction slavery.<sup>6</sup> I do not see how genuinely autonomous creatures (animal, vegetable, or mineral) can be owned consistently with the abolition of slavery, or with any respectable conceptions of equal opportunities or fundamental rights.<sup>7</sup> I do not argue that non-autonomous creatures, (most animals and probably all current artificial intelligence [AI]) cannot indeed be owned, but rather that in so far as they are genuinely autonomous they cannot be owned. I shall not argue further for this claim except obliquely by the elaborations of autonomy cited, subsequently and in note 3.

### Legislative and Regulatory Frameworks for “Autonomous” Vehicles

Although company and corporate lawyers are “odds on” favourites to grab this new and fertile piece of ground for themselves,<sup>8</sup> thus possibly cementing these

kinds of novel beings in a corporate framework, it is far from clear that this would be the best home for the protection and regulation of genuinely autonomous moral beings. It may well be that, from an ethical and regulatory perspective, concepts such as reproductive liberty and autonomy, parental rights, children's rights, and child protection constitute the better moral framework, and that the test for the protection of novel entities possessing (or with the capacity to develop) genuine autonomy should be their own "best interests," as with human children or with human adults when, for whatever reason, they are incapable of asserting and defending those rights for themselves. Moreover, family law and reproductive law rather than corporate or company law provide a better model, with, for example, governing legislation on the model of The Human Fertilization and Embryology Act 1990<sup>9</sup> (as amended) and day to day regulation provided by The Human Fertilization and Embryology Authority,<sup>10</sup> or a similar body in jurisdictions outside the United Kingdom<sup>11</sup>

### What is Autonomy Like?

Can my autonomous vehicle be owned? The answer to this question turns on the level of autonomy possessed and how this is to be ascertained. Will my vehicle perhaps employ me as its professional driver with the money I am spending on it? Will it eventually buy its own freedom, as some slaves of past eras have done? And what will it do, what *can* it do with that freedom, with that "autonomy"? If it is really autonomous, the answer must be: "it can do whatever it likes!" We have, however, for the moment gotten ahead of ourselves, as I will be arguing, and indeed insisting, that no autonomous creature however constituted (metal Mickey or organic Ophelia) can be legitimately owned. Therefore, if they cannot be owned, they cannot be bought and sold, which means that there would be nothing much in it for manufacturers! This claim of course needs all sorts of qualification.

For an autonomous vehicle, getting from A to B on a busy road without mishap is "a piece of cake". "Choosing" not to collide with objects following instructions coded into its "brain" by a human, is also easy-ish, but for current machines it does not involve anything that could be called "choice." An autonomous being can choose any action it can perform, and many it is convinced it cannot perform or may not be able to perform. It can try things knowing that the odds are stacked against success. And it can do so for any reason, or none. Minded creatures can act mindlessly, but a mindless<sup>12</sup> creature cannot act for its own reasons at all.

None of this is news. Shakespeare's characters, for example, face seemingly endless choices and dilemmas; that is what autonomous beings do, and not just kings and princes! People (evolved and built) will do so, perhaps also because that is what people do, a fact of which poets have always reminded us. That is what audiences (people who listen) do. From the time of Homer to that of Shakespeare to our own time, they know it to be their destiny, their delight, and their right.

An inanimate autonomous mind (perhaps not strictly "inanimate" but rather non-organic) is a heady prospect, and the greater the power of choice, the greater the unease: "Uneasy lies the head that wears a crown."

#### Henry IV

Canst thou, O partial sleep, give thy repose  
To the wet sea-boy in an hour so rude,

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And in the calmest and most stillest night,  
With all appliances and means to boot,  
Deny it to a king? Then happy low, lie down!  
Uneasy lies the head that wears a crown.<sup>13</sup>

### **Macbeth**

...I am in blood  
Stepped in so far that, should I wade no more  
Returning were as tedious as go o'er.<sup>14</sup>

### **Hamlet**

To be, or not to be, that is the question:  
Whether 'tis nobler in the mind to suffer  
The slings and arrows of outrageous fortune,  
Or to take arms against a sea of troubles  
And by opposing end them. To die—to  
sleep...  
To sleep, perchance to dream—ay, there's the rub!<sup>15</sup>

### **Brutus**

There is a tide in the affairs of men.  
Which, taken at the flood, leads on to fortune;  
Omitted, all the voyage of their life  
Is bound in shallows and in miseries.  
On such a full sea are we now afloat,  
And we must take the current when it serves,  
Or lose our ventures.<sup>16</sup>

### **J. Alfred Prufrock**

Do I dare  
Disturb the Universe?  
In a minute there is time  
For decisions and revisions which a minute will reverse<sup>17</sup>

These almost random quotations from Shakespeare and T.S. Eliot demonstrate the ubiquity and complexity of making a choice, a real choice. Choice involves consideration of alternatives, elaboration of possible scenarios, and sometimes even of more elaborate impossible scenarios. "Ought" may imply "can," but choice does not; it implies merely the possibility of undertaking a serious attempt.

Will my autonomous car dare disturb the universe? Will it have the imagination, the nerve, and the resolve; will it take that minute, and what will it do with it? What will it want or choose to do with it?

## **The Autonomy of Autonomous Vehicles**

Autonomous creatures are simply creatures that can make decisions, I say "simply," but there is little that is simple about it. To me, "decisions" mean informed choices, choices in which the creature doing the choosing does some deciding, is aware in general of the nature of the information and reasons or purposes motivating the act, and has the ability to grasp and consider alternatives. This "information" may simply be awareness of the fact that it wants or wills itself to perform that action,

refrain from that action, or make that decision or refuse to make that decision. A rabbit running from a fox has certainly not decided to run, it is not doing so for a reason, although its conduct is eminently reasonable. Some people regard rabbits as autonomous, but no rabbits regard people as autonomous. I suggest that those people who think rabbits are in any sense autonomous simply mean “not directed by some external, motivated force.” But this is not the same as self-direction. Of course there are the relevant “brute forces of nature”: gravity, for example. But these do not conflict with autonomy, but rather they are the conditions within which autonomy functions.

The distinction I am making here is well articulated, as is so often the case, by William Shakespeare. Here is his use of it in *Julius Caesar*. Caesar is responding to Decius Brutus who has come to escort him to the Senate and to his death. Caesar tells him to tell the Senate he will not come ...

**Caesar**

Decius, go tell them Caesar will not come.

**Decius**

Most mighty Caesar, let me know some cause,  
Lest I be laughed at when I tell them so.

**Caesar**

The cause is in my will: I will not come;  
That is enough to satisfy the Senate.  
But for your private satisfaction,  
Because I love you, I will let you know:  
Calpurnia here, my wife, stays me at home.<sup>18</sup>

A machine or a creature that, for example, runs or drives to one side of a tree in its path rather than to the other, or that eats one item of food rather than another, is not necessarily choosing,<sup>19</sup> let alone choosing for a reason, even if, in other circumstances, it might have been capable of choosing for a reason.

In a telling passage, also from *Julius Caesar*, illustrating the complexity of human motivation, Shakespeare has Cinna the poet (not Cinna the conspirator) say:

**Cinna**

I dreamt to-night that I did feast with  
Caesar,  
And things unlucky charge my fantasy:  
I have no will to wander forth of doors;  
Yet something leads me forth.<sup>20</sup>

Cinna does not want to go out into the city, but feels he must; here “will” means “what he would like to do” not “what he chooses to do,” thus illustrating our irritating human capacity to act autonomously against our will: our capacity to choose between our different but powerful reasons for action.

I argued along analogous lines recently in my book *How to be Good*, in which I also discussed the nature and limitations of AI.<sup>21</sup> We humans learn from our mistakes, and that is what a Super AI would also do. It is doubtful if we could genuinely learn without making mistakes.

Decisions are decisive; that's why we make them! But they can go wrong and often do, and are often ill advised, even when the advice is our own, as in Cinna's case. The decisiveness of decisions is also why we are responsible for them and for their consequences. Our responsibility stems from our will, or from the fact that we do or did these things "on purpose." To understand this better, we need to consider some of the fundamental concepts that inform this debate.

*Autonomy* and *responsibility* are two key concepts, *autonomy* being the ability to make decisions, choose freely, and accept the *responsibility* or the consequences of the choice that this autonomy entails. Autonomy is literally "self-government," and it is common knowledge that government, including self-government—the exercise of power and responsibility in the interests of the individual or the state or the self—can teach us much about our place in, and our effect on, the world. The will is one of the instruments of self-government.

We have responsibility for ourselves and our decisions, our deliberate actions, or our refrainings,<sup>22</sup> and again, that is partly how we learn from them. And we are responsible in the second sense identified here; that is, we are accountable for our decisions and their effects—accountable, in short, for the way we govern ourselves and for the effects of so doing.

But this second sense of responsibility; namely, accountability, is predicated on the idea that our decisions are *our own*, are expressions of our will or choice and not merely the products of brute forces or programming, whether natural, human, social, or divine.<sup>23</sup> In short, it assumes that there is genuine power to choose behind both governance and self-governance.

*According to this view, each decision is world changing and world creating.* The world will be a different place to the extent that something is decided and to the extent to which that decision makes a difference. That is why decisionmaking matters; each decision is, in effect, a choice between possible worlds, made actual by that decision. And although every event is also world changing, decisions are special because the decision, the choice by an individual consciousness, is what makes the difference.

Decisions, then, are not only world creating, they are self-defining. We are the product of our past decisions: they are in large part responsible for making us what we are, and our history and our future are defined by them. We are the persons we make of ourselves.<sup>24</sup>

Of course our decisions have antecedents, which exercise causal effects: they are part of the complex causal chain that precedes every event. Some of these antecedents are chemical, neurological, or biological, whereas others are social: peer example and pressure, education, and knowledge, including knowledge of cause and effect. Still other influences include previous acts of the will, previous decisions that have made us the individuals that we are.

Decisions have a myriad of antecedent causal factors, which include the sorts of people we have made of ourselves (inter alia as discussed) by our antecedent choices and decisions of all sorts and indeed by accidents of birth. The fact that I have taken the trouble to learn some French or Italian (or have done so without much trouble because I have lived in French- and Italian-speaking countries) influences the range of choices that are open to me, as does the fact that I have a university degree and have studied philosophy. But my prior choices have played a crucial role in all of these factors. Even the planned accident of my birth in England in 1945<sup>25</sup> has had an effect; but who did not have an accident of birth at a particular time and in a particular place?

At the Diet of Worms on April 18, 1521, Martin Luther<sup>26</sup> famously defended his doctrinal approach thus: "Unless I am convinced by proofs from Scriptures or by plain and clear reasons and arguments, I can and will not retract, for it is neither safe nor wise to do anything against conscience. Here I stand. I can do no other. God help me. Amen."<sup>27</sup>

He was not, as is sometimes said, acting involuntarily. He was not literally able to "do no other." As he himself says, he was acting for what he perceived to be "clear reasons and arguments," exercising his will in the light of these, and, like any rational creature, "compelled" by reason and force of argument along with all the other antecedent causes, but not excluded by those causes. But this sort of compulsion is at the heart of autonomy: self-government is pointless (as well as nonexistent) if not exercisable.

A fact that must always also be remembered is that Luther was an incorrigible, vicious and persistent anti-Semite,<sup>28</sup> who was almost certainly an inspiration for the deaths or suffering of countless Jews over centuries. He is therefore severely limited in his moral sensibility, in his objectivity, and in his capacity to reason clearly; and so, ultimately, in any claim he has to moral authority. His famous "stance" is here simply illustrative of the role of the will in decisionmaking, regarding the relatively trivial matter of Christian doctrine and observance.

Of course reasons and arguments are powerful causes of decisions and of actions and they are also often satisfying explanations of what we say and do. If they were not, we would not seek for them and deploy them in explanation and defense of our decisions. Such things have a crucial role in the chain of causation, or in the explanation, of action.

These factors are necessary conditions of who I am and hence of what I do. What they decidedly are *not* is sufficient explanation of any of my choices, because like all other people capable of choice, my decisions are subject to my will.

To return to Shakespeare's Julius Caesar for a moment, Caesar explains to Decius Brutus that Caesar's wife has pleaded with him to stay at home. That is part of the reason for his act of will and only possibly one of its necessary conditions, but not the cause of it in any deterministic sense.

The alternative to freedom is no accountability for actions at all. I am happy, if not willing, on that basis to do something unspeakable to anyone who disagrees with me; as long, that is, as the legal jurisdiction under which I live, my government, and my fellow citizens are willing to accept that I have been disastrously influenced by prior events, which of course include my desire to maintain my argument against all comers.

## Disturbing the Universe

How would my autonomous vehicle measure up? Would it dare disturb the universe or even contemplate declining to do so? Of course motor manufacturers are not in the disturbance business, quite the reverse.

In *Car and Driver*, Mercedes-Benz executive Christoph von Hugo is reported as saying that Mercedes-Benz future autonomous cars will save the car's driver and passengers, even if that means sacrificing the lives of pedestrians, in a situation in which those are the only two options.<sup>29</sup> "If you know you can save at least one person, at least save that one," von Hugo is reported as saying at the Paris



Motor Show. "Save the one in the car. If all you know for sure is that one death can be prevented, then that's your first priority."

This is a version of the famous "Trolley Problem," first introduced into both philosophy and public discourse in 1967 by the Oxford Philosopher Philippa Foot.<sup>30</sup> Foot's version of the problem imagines the dilemma of "the driver of a runaway tram which he can only steer from one narrow track on to another; five men are working on one track and one man on the other; anyone on the track he enters is bound to be killed."<sup>31</sup>

I still have my copy of the *Oxford Review* in which Foot's essay first appeared. When I started my graduate work in philosophy in Oxford in 1969, I began playing with this problem and, more importantly, with the Acts and Omissions problem, which lay behind it, and devised an analogous dilemma in a paper I wrote in 1971 (which was eventually published in 1975) outlining the compelling logic of "The Survival Lottery."<sup>32</sup>

Discussion of trolleys and AI of course invites the question as to whether, had there been autonomous trams or trolleys for Foot and others to consider, the tram or trolley itself might itself have cracked the annoying "Trolley Problem."<sup>33</sup> Or whether, like many who have pondered this problem since, they would simply have saved time by tossing a coin or by recommending another alternative solution that involved avoiding invidious choices by adopting methods, like the lottery, that succeed in selecting without preferring.

Many believe that an "autonomous" vehicle will someday find itself in a parallel situation: having to choose, for example, between crashing full speed into a concrete barrier, or striking pedestrians while keeping its passengers safe.<sup>34</sup>

In a comment referred to later in *Fortune*, Mercedes-Benz is cited as insisting that their official position is that "neither programmers nor automated systems are entitled to weigh the value of human lives."<sup>35</sup> And yet sometimes we must.

There are many examples from literature and history. Homer's *The Iliad* takes as one of its many themes the decision of the Greeks at the behest of Achilles, to force Agamemnon, their king, to return the hostage Chryseis in order to appease the god Apollo in the hope of ending the pestilence affecting the Greek army. *The Iliad* is replete with human decisions to risk lives and to sacrifice some people for the good of others, or in order to save more lives, or to preserve honor, or to please the gods.

A clear contemporary example about which I have written a number of times concerns events in World War II.<sup>36</sup>

### Coventry 1940

In 1939, British intelligence obtained, through the Polish Secret Service, an example of the German cipher machine known as "Enigma." A team of cryptanalysts working at Bletchley Park succeeded in breaking the German codes and were thus able to supply the Allies with much information about Axis plans. As a result, at 3 p.m. on November 14, 1940, the team at Bletchley intercepted a German signal, which gave Churchill at least 5 hours' warning of the Coventry raid, which was a planned saturation bombing of the city. F.W. Winterbotham, the man responsible for passing information from what was dubbed "the most secret source" to Winston Churchill, saw the prime minister's dilemma as follows:

If Churchill decided to evacuate Coventry, the press, indeed everybody, would know we had pre-knowledge of the raid and some counter-measure might be necessary to protect the source which would obviously become suspect. It also seemed to me...that there would be chaos if everyone tried to get out of the city in the few hours available and that if, for any reason, the raid was postponed...we should have put the source of our information at risk to no purpose.<sup>37</sup>

As I noted in *Violence & Responsibility*, "Churchill had to balance the lives that might be saved by evacuating Coventry against the lives that might be lost by endangering the source and thus cutting the Allies off from other information which might well shorten the war and save lives."<sup>38</sup> Probably many tens, perhaps hundreds, of thousands more lives were saved than were lost in Coventry.

What happened in Coventry demonstrates that decisions, not unlike those analyzed in "The Survival Lottery," and now being discussed in relation to autonomous vehicles, are actually routinely made and defended in the real world, as well as in the world of the imagination. Indeed Kazuo Ishiguro's novel *Never Let Me Go*,<sup>39</sup> is one of many imaginative exercises that has used ideas very closely analogous to those I first developed in "The Survival Lottery."

Although scenarios like that at Coventry in 1940 may happen, and indeed may happen for the best, the philosophical principles that underpin and sometimes justify real actions and realpolitik, do not themselves either advocate, or license, any particular course of action in the real world, with all its characteristically terrifying complexity.

## Conclusions

No so-called "autonomous" vehicles that we yet have, including drones, are actually autonomous. They are autonomous in "scare quotes": hyperbolically autonomous. They may do things without reference to us, or to their inventors or creators, but they do not make real choices. If and when they become autonomous, they will be more dangerous and more powerful, they will begin to be accountable for their actions, and they will make mistakes from which they will learn. We don't learn from getting things right, we learn, as Karl Popper argued,<sup>40</sup> from being wrong and recognizing that we are wrong or at least trying to prove ourselves wrong.

The creation of autonomous creatures signals that they cannot be owned, because the autonomous are self-owners, self-regulating and self-governing, subject only to the extent that they surrender that autonomy to the democratic process; that is, to the rule of law.

Corporations listen up! There is no profit in the development of genuinely autonomous vehicles, except to the public interest or the public danger. It is in this regard that, for example, Steven Hawking said "The development of full artificial intelligence could spell the end of the human race"<sup>41</sup> and Elon Musk<sup>42</sup> said "We need to be super careful with AI. Potentially more dangerous than nukes."

Of course genuinely autonomous vehicles will first need to be brought into existence, and will inevitably develop needs and need protection and services. There may well be profit in all of these, as there is profit for clinics offering assisted reproduction. But neither these clinics nor the makers of fully autonomous vehicles will be able to sell or own those of their creations that possess, or will possess, autonomy.



Equally, they will present manufacturers, not only of hyperbolically named “autonomous vehicles” but also, eventually, those who will develop genuinely autonomous AI, with dilemmas and responsibilities that, if not unprecedented, will be agonizingly difficult to solve and will generate regulatory and jurisprudential issues and consequences that may well not survive cost/benefit analysis.<sup>43</sup>

## Notes

1. I was stimulated to start this article in anticipation of attending the “Round table”: Regulating the Tyrell Corporation: Company Law and the Emergence of Novel Beings (WT.208871/Z/17/Z.) Grey’s Inn, London, January 17, 2018 convened by David Lawrence and Sarah Morley. I am indebted to all those who attended. Special thanks go to my colleagues Giulia Cavalieri and David Lawrence for detailed comments and assistance beyond the call of friendship, and to Tomi Kushner for, as ever, the most constructive and insightful editorial suggestions and encouragement.
2. Morris DZ. Mercedes-Benz’s self-driving cars would choose passenger lives over bystanders. *Fortune*, October 15, 2016; available at <http://fortune.com/2016/10/15/mercedes-self-driving-car-ethics/> (last accessed 17 Apr 2018).
3. In what follows, I give a brief account of autonomy, one consistent with the standard accounts; for example, with that in the *Stanford Encyclopedia of Philosophy*, revised January 9, 2015; available at <https://plato.stanford.edu/entries/autonomy-moral/> (last accessed 17 Jan 2018). Here, I merely gloss over the many accounts I have myself previously given of autonomy, most recently in Harris J. *How to be Good*. Oxford: Oxford University Press; 2016, at 95–8, and 105–8, and with particular reference to AI at 178–9. But see also Harris J. *The Value of Life*. London: Routledge and Kegan Paul; 1985, at 195–295.
4. Robert Nozick Feser E. *Internet Encyclopedia of Philosophy*. n.d.; available at <http://www.iep.utm.edu/nozick/>. <http://www.sscnet.ucla.edu/polisci/faculty/pateman/Self-Ownership.pdf> (last accessed 17 Apr 2018).
5. Coke E. *The Third Part of the Institutes of the Laws of England*. Societie of Stationers; 1628, pt. III, chap. 7:47. I am grateful to David Lawrence for this reference.
6. Slavery was abolished in an 1833 act of the Parliament of the United Kingdom. This abolished slavery throughout the British Empire (with the exceptions “of the Territories in the Possession of the East India Company,” Ceylon, now Sri Lanka, and Saint Helena. the exceptions were eliminated in 1843). Slavery Abolition Act of 1833, February 14, 2018; available at [https://en.wikipedia.org/wiki/Slavery\\_Abolition\\_Act\\_1833](https://en.wikipedia.org/wiki/Slavery_Abolition_Act_1833) (last accessed 17 Apr 2018).
7. I prefer to speak of “fundamental rights” rather than “human rights” because of the inherent species bias in the use of the term “human” in this context. See Harris J. Taking the “human” out of human rights. *Cambridge Quarterly of Healthcare Ethics* 2011;20(1):9–20.
8. Bayern S, Burri T, Grant TD, Hausermann DM, Moslein F, Williams R. Company law and autonomous systems: A blueprint for lawyers, entrepreneurs, and regulators. *Hastings Science and Technology Law Journal* 2017;9:135. Note also that: in the Senate of the United States, December 12, 2017 Ms. Cantwell (for herself, Mr. Young, and Mr. Markey) introduced the following bill, which was read twice and referred to the Committee on Commerce, Science, and Transportation; namely, “To require the Secretary of Commerce to establish the Federal Advisory Committee on the Development and Implementation of Artificial Intelligence, and for other purposes.”
9. <https://www.legislation.gov.uk/ukpga/1990/37> (last accessed 17 Apr 2018).
10. Human Fertilisation & Embryology Authority. n.d.; available at <https://www.hfea.gov.uk/> (last accessed 17 Apr 2018).
11. To the extent that such bodies exist outside the United Kingdom
12. I do not here further explore the nature of mind.
13. Shakespeare W. *Henry The Fourth, Part 2*, Act III, Scene I, 26–31. In: Craig WJ, ed. *The Complete Works of William Shakespeare*. Oxford and London: Oxford University Press; 1914.
14. Shakespeare W. *MacBeth*. Act III, Scene IV, 137–9. In: Craig 1914 (see note 13).
15. Shakespeare W. *Hamlet*, Act II, Scene I, 55–66. In: Craig 1914 (see note 13).
16. Shakespeare W. *Julius Caesar*, Act IV, Scene III, 217–23. In: Craig 1914 (see note 13).
17. Eliot TS. The Love Song of J. Alfred Prufrock. In: *Collected Poems*. London: Faber and Faber; 1974, at 4.
18. Shakespeare W. *Julius Caesar*, Act 2, Scene 2, lines 68–75. In: Proudfoot R, Thompson A, Kasten DS, eds. *The Arden Shakespeare*. Walton-On-Thames: Thomas Nelson and Sons Ltd.; 1998.

19. Lawrence DR. Robotic intelligence—philosophical and ethical challenges. In: Giordano S, ed. *Bridging the Gap between Science and Society*. London: Bloomsbury; 2018.
20. Shakespeare W. *Julius Caesar*, Act III, Scene III, 967. In: Craig 1914 (see note 13).
21. See note 3, Harris 2016, at 95–6. See also Lawrence DR, Palacios-González CÉ, Harris J. The Shylock Syndrome. *Cambridge Quarterly of Healthcare Ethics* 2016;25:250–61.
22. For a full account of the logic of refrainings see Harris J. *Violence and Responsibility*. London: Routledge and Kegan Paul; 1980.
23. I discussed the latitude afforded humans by the God of the Old Testament in Chapter 4 of *How to be Good*. See note 3, Harris 2016, at 56ff.
24. For more on autonomy and responsibility see Hart HLA. *Punishment and Responsibility*. Oxford: Clarendon Press; 1968, chap. IX, Postscript. Glover J. *Responsibility*. London: Routledge and Kegan Paul; 1970. Pears DF, ed. *Freedom and the Will*. London: MacMillan; 1969. Dworkin G. *The Theory and Practice of Autonomy*. Cambridge: Cambridge University Press; 1988. O’Neill O. *Autonomy and Trust in Bioethics* Cambridge: Cambridge University Press; 2002. Raz J. *The Morality of Freedom*. Oxford: Clarendon Press; 1986. Waldron J. Moral autonomy and personal autonomy. In: Christman J, Anderson J, eds. *Autonomy and the Challenges to Liberalism*. Cambridge: Cambridge University Press; 2005. Harris J. *The Value of Life*. London: Routledge and Kegan Paul; 1985, chap. 10 and 11. Also see note 22, Harris 1980.
25. Harris J. Thought and memory. In: Coggon J, Holm S, Chan S, Kushner T, eds. *From Reason to Practice in Bioethics: An Anthology Dedicated to the Works of John Harris*. Manchester: Manchester University Press; 2015, at 16–30.
26. Kaufmann T. Luther’s Jews: A journey into anti-Semitism. January 12, 2017; available at <https://global.oup.com/academic/product/luthers-jews-9780198738541?cc=gb&lang=en&> (last accessed 17 Apr 2018).
27. I cannot remember where I found the lines quoted in the text. There are many extant versions, but I prefer these lines to one of the many alternative formulations; namely, “Luther then replied: Your Imperial Majesty and Your Lordships demand a simple answer. Here it is, plain and unvarnished. Unless I am convicted [convinced] of error by the testimony of Scripture or (since I put no trust in the unsupported authority of Pope or councils, since it is plain that they have often erred and often contradicted themselves) by manifest reasoning, I stand convicted [convinced] by the Scriptures to which I have appealed, and my conscience is taken captive by God’s word, I cannot and will not recant anything, for to act against our conscience is neither safe for us, nor open to us. On this I take my stand. I can do no other. God help me.” Martin Luther: Excerpts from his account of the confrontation at the Diet of Worms. January 17, 1997; available at [http://www-personal.ksu.edu/~lyman/english233/Luther-Diet\\_of\\_Worms.htm](http://www-personal.ksu.edu/~lyman/english233/Luther-Diet_of_Worms.htm) (last accessed 17 Apr 2018).
28. Martin Luther and antisemitism. January 19, 2018; available at [https://en.wikipedia.org/wiki/Martin\\_Luther\\_and\\_antisemitism](https://en.wikipedia.org/wiki/Martin_Luther_and_antisemitism). Ocker C. Martin Luther and anti-Judaism and anti-Semitism. Oxford Research Encyclopedias. 2018; available at <http://religion.oxfordre.com/view/10.1093/acrefore/9780199340378.001.0001/acrefore-9780199340378-e-312> (last accessed 17 Apr 2018).
29. See note 2, Morris 2016.
30. Foot P. The problem of abortion and the doctrine of the double effect. In: *Virtues and Vices*. Oxford: Basil Blackwell; 1978 (originally appeared in the *Oxford Review* 1967; 5. See also Trolley Problem. February 20, 2018; available at [https://en.wikipedia.org/wiki/Trolley\\_problem](https://en.wikipedia.org/wiki/Trolley_problem) (last accessed 17 Apr 2018).
31. Op Cit.
32. Harris J. The survival lottery. *Philosophy* 1975;50:81.
33. I think I overheard the suggestion that we might leave trolleys to solve the Trolley Problem for themselves at the meeting referred to in note 1, but I have not been able to identify the source.
34. <http://science.sciencemag.org/content/352/6293/1573> (last accessed 21 Jan 2018, but not read because it was behind a pay wall). I cite it for others.
35. See note 2, Morris 2016.
36. See note 22, Harris 1980. Harris J. In search of blue skies: Science, ethics and advances in technology *Medical Law Review* 2013;21:131–45
37. Winterbotham FW. *The Ultra Secret*. London: Weidenfeld and Nicolson; 1974. There are conflicting accounts of just how much warning Churchill had of the raid. See Brown AC. *A Bodyguard of Lies*. London: WH Allen/Virgin Books; 1976 and Jones RV. *Most Secret War*. London: Coronet; 1979, at 204.
38. See note 22, Harris 1980, at 91.

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39. *Never Let Me Go*, February 7, 2018; available at [https://en.wikipedia.org/wiki/Never\\_Let\\_Me\\_Go\\_\(novel\)](https://en.wikipedia.org/wiki/Never_Let_Me_Go_(novel)) (last accessed 17 Apr 2018).
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43. Indeed even human persons find such survival problematic.