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### The story so far...

**I**n Part One of the series it was suggested that technologies are not innocent, and should be held to moral account. In most interpretations of Western moral philosophy, moral judgement does not extend to non-humans, and for non-humans to be included, a number of objections need to be overcome. The objections include: the arguments that morality is the exclusivity domain of humans (considered in Part Two), the argument that non-humans don't really act (considered in Part Three), the argument that technologies are just dumb instruments (considered in Part Four), the free will argument (considered in Part Five), and the dilution of responsibility argument (considered in Part Six). By way of conclusion we ask, does any of this matter?

### Conclusion

In a series of installments it has been argued that moral agents are not in principle limited to members of the human race, that non-humans and in particular technologies can be considered to act in the world, and that when they do so, they cannot be regarded as just tools or dumb instruments, that the actions of technologies are willful and occur in the foreknowledge of consequences, in a significant way,

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# Are Technologies Innocent?

## Part Seven: Conclusion

and that even technologies that are distributed in time and space may be defined with sufficient specificity to allocate moral accountability. Taken together, it has been argued that technologies are not innocent, and can be held to moral account.

But does any of this matter? Even if the argument is accepted and the actions of technologies become subject to moral evaluation as well as instrumental assessment, what are we going to do – put the Doctor's computer system in gaol? Send the axe to confession? Fine it? Execute it? Re-educate and rehabilitate technologies that are immoral?

Well, yes.

Although it is allowed that in a literal sense jail and fines might not work, a figurative execution or rehabilitation of non-human technologies are certainly options that should be considered.

Execution for example, is an attractive option in some circumstances. There are technologies whose constitution so well express an "in order to" that is aligned to bad outcomes, and whose actions are so deeply impli-

cated in both the means and the ends of bad outcomes, that rehabilitation is improbable, and the permanent destruction of the technology (that is, execution) becomes the best way of avoiding those outcomes. One might think here of napalm, cluster bombs, CF2 spray, dioxin, battery cages, bear-bile milkers, automated spam, malware, and so forth. To blame humans and only humans for the acts of napalm, cluster bombs or CF2 spray, and to direct moral outrage at humans and only humans, whilst implicitly or explicitly finding the napalm, the cluster bombs or the CF2 spray in themselves irrelevant to a moral assessment, lying outside an ethical jurisdiction, and thereby innocent of all moral wrong, is nothing short of perverse. These technologies act in the world, the world is different for their actions, and at the very least, they share responsibility for the outcomes of their actions in the world. Accordingly, certain technologies should share the focus of moral outrage, and their moral assessment has a place in the restitution of moral order.

The eradication of certain technologies on moral grounds will lead to better outcomes, but this can occur only if those technologies are held to bear responsibility for those outcomes. If we continue to conclude that all technologies are beyond moral accountability, and that only humans are morally responsible for bad outcomes, the technologies that might otherwise be eradicated will continue to threaten and cause tragedy, and technologies that might otherwise be rehabilitated will continue to cause nuisance and accident.

But to make decisions about which technologies are to be eradicated, and why, and how, and which are to be rehabilitated, and why, and how, requires a mode of technology assessment capable of reaching these decisions. To allow that technologies are legitimate subjects of moral assessment alters the grounds for assessment in ways that allow this. While considered beyond the ken of moral assess-

ment, technologies may be judged only in instrumental terms. They may be held to be inefficient, inaccurate, slow, costly, cumbersome to use, and so on. But surely these are inadequate yardsticks to use to get the full measure of these powerful actors? An assessment of the actions of technologies that is limited to questions of accuracy, efficiency, effectiveness, or cost, does not begin to come to grips with their significance as actors, and falls far short of exhausting their implications. To draw on concepts from the moral domain is to assess their actions within an appropriate framework. Right and wrong, virtue and wickedness, good and bad, are yardsticks by which we can more meaningfully comment upon the actions of cluster bombs, CF2 spray, or automated spam. A position at the intersection of moral axes provides a more meaningful conceptual context, and provides a more appropriate language for the

assessment of technologies than a position on instrumental axes. Only in a moral context can the actions of technologies be assessed with appropriate conceptual tools, and with appropriate power and authority.

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### Acknowledgment

This series of short papers is a heavily revised version of an earlier publication (1) in this *Magazine*.

### References

[1] M. Arnold and C. Pearce, "Is technology innocent? Holding technologies to moral account," *IEEE Technology & Society Mag.*, vol. 27, no. 2, pp. 44-50, 2008.



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## OPINION

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The election of Donald Trump as President of the United States, with the help of Russian hackers and boatloads of blatantly deceptive "news" on the Internet, is a case in point. Facebook's Mark Zuckerberg initially called accusations that fake news influenced the election "a pretty crazy idea" — but eventually conceded that maybe it wasn't such a crazy idea after all. The denial of a former software engineer for Twit-

ter cracked more quickly. "For my @twitter alum friends," he tweeted the day after Trump's victory, "What did we build?"

Dystopian works of science fiction are, for these reasons, an expression not only of understandable anxiety but of appropriate concern. They could, if taken seriously, serve as petitions for restraint. Unfortunately, as exercises in fiction and entertainment, they are too easily dismissed,

overshadowed by the real-world temptations of technological power. Would that the risks they foresee were taken more to heart. To paraphrase the wisdom of one of my favorite bumper stickers: "If you're not worried, you're not paying attention."

### Author Information

*Doug Hill* is the author of *Not So Fast: Thinking Twice About Technology*.

