

STABLE STRATEGIES FOR PERSONAL DEVELOPMENT

ON THE PRUDENTIAL VALUE OF RADICAL ENHANCEMENT AND THE PHILOSOPHICAL VALUE OF SPECULATIVE FICTION

IAN STONER

Abstract: In her short story “Stable Strategies for Middle Management,” Eileen Gunn imagines a future in which Margaret, an office worker, seeks radical genetic enhancements intended to help her secure the middle-management job she wants. One source of the story’s tension and dark humor is dramatic irony: readers can see that the enhancements Margaret buys stand little chance of making her life go better for her; enhancing is, for Margaret, probably a prudential mistake. This paper argues that our positions in the real world are sufficiently similar to Margaret’s position in Gunn’s fictional world that we should take this story seriously as grounding an argument from analogy for the conclusion that radical genetic enhancements are, for us, probably a prudential mistake. The paper then defends this method. When the question at hand is one of speculative ethics, there is no method better fit to the purpose than argument from analogy to speculative fiction.

Keywords: human enhancement, philosophical methods, philosophy and literature, science fiction, speculative ethics, well-being.

If you were in a position to hand out radical genetic enhancements on a street corner (ultra-intelligence, mega-brawn, super-longevity) you would meet three broad categories of people: those who accept, those who decline for moral reasons, and those who decline for prudential reasons. The kinds of reasons for abstaining offered by the latter two categories of people are fairly long established. Some declining for moral reasons see radical enhancements as a pathological drive for inhuman perfection. *Atlantic Monthly* subscribers might mention the ethic of giftedness, and *Foreign Policy* subscribers might fear the dilution of our human essence. Others will cite religious objections: meddling with genetic codes is, for them, a meddling best left to a god.¹

¹For more on the ethic of giftedness, see Sandel (2004); for human essence, see Fukuyama (2002); for Frankensteinian hubris, see Kass (1997).

Those citing prudential reasons for declining genetic enhancement will probably mention the state of the science, which is currently in its infancy. The relationship between genes and their expression is poorly understood, and no one would want to swallow a gene for phosphorescent skin and wake up instead with an octopus's beak.² The standard prudential case against radical genetic enhancement is this: beware enhancements, for in enhancing you may get something other than what you bargained for.³

As science advances and technological applications improve, the standard prudential objection will wither and eventually fall. The safe money says that someday, maybe some distant day, genetic interventions will be as safe and reliable as vaccines.

One goal of this paper is to offer an alternative prudential case against radical genetic enhancement—one that holds even when, in enhancing, we get *exactly* what we bargained for. My argument appeals to Eileen Gunn's short story "Stable Strategies for Middle Management." I treat that story as a described case grounding an argument from analogy: we are sufficiently similar to Gunn's narrator that the prudential mistakes she makes are prudential mistakes we should expect ourselves to make.

A second goal is to defend this mode of argument. When the question at hand is one of speculative ethics, there is unlikely to be any mode of argument better fit to the purpose than argument from analogy grounded in speculative fiction.

1. Radical Genetic Enhancements Are Probably a Prudential Mistake

Thesis: though we conventionally call them "enhancements," some modifications to human bodies and minds will probably make us worse off than we would be without them, even if those modifications deliver exactly what they promise. Section 1 first clarifies the scope of this thesis, then offers an argument in defense of it, and finally replies to anticipated objections.

1.1. *The Subject of This Argument*

One reason debates about human enhancement are liable to be frustrating is that the scope of the debate is too often underspecified. The enhancement debate attracts the attention of people working on real-world technologies

² The science isn't *that* infantile. The skin and the beak are *metaphors*.

³ There could also be unintended social, as opposed to individual, consequences of enhancement. Will enhancement open up new frontiers of degrading inequality? Will it spark positional arms races (Singer 2010, 282–84)? Will it make interpersonal communication difficult or impossible (Allhoff et al. 2010, question 15)? Whether developed as prudential or moral objections to enhancement, these are versions of the claim that enhancement should be avoided because it is likely to give us something other than what we bargained for.

such as cosmetic surgeries and performance-enhancing drugs, and it also attracts the attention of transhumanists speculating about technologies they expect will midwife the post-human age. Enhancement technologies vary widely in their means (pharmacological, surgical, digital) and their ends (competitive edge, self-expression, wish fulfillment). It would be surprising if a single argument were relevant to every permutation of these factors. We should expect that different levels of intervention, employing different means in pursuit of different goals, will prompt distinct moral questions.

Even the term “enhancement” is potentially a source of confusion, with various definitions embracing and excluding different specific interventions (Gyngell and Selgelid 2016). In this paper I avoid committing myself to a definition and focus instead on a subset of paradigm cases of enhancement, including radical health-span extension and intelligence boosts. Even if we disagree about philosophical definitions of enhancement, we can successfully discuss paradigm cases such as these.⁴

The paradigm cases of human enhancement that I consider here display two features. First, I focus on enhancements that aim at allowing us to pursue our values—to get what we want—by attenuating our biological limits. Baseball players who use steroids and college students who use Adderall are present-day examples of people seeking to attenuate biological limits with pharmacological enhancements. It is not the case that *all* enhancements fall into this instrumental, limit-mitigating category; some enhancements, such as cosmetic surgeries, decorative body mods, and recreational mood-enhancing drugs, aim primarily at self-expression, artistic performance, play, or peace of mind.⁵

Second, I focus on *radical* enhancements—those that eliminate or drastically attenuate human biological limits. Moderate enhancements, by which I mean, following Nicholas Agar (2010), interventions that enhance abilities or features to levels found among unenhanced humans, present a

⁴ I tend to think thin/descriptive accounts are more useful than thick/normative accounts such as Julian Savulescu, Ruud ter Meulen, and Guy Kahane’s Welfarist Conception of enhancement (2011). But even if you prefer the Welfarist Conception, that need not introduce confusion regarding paradigm cases. Adopting the Welfarist Conception only requires an awkward rephrasing of my thesis: some paradigm cases of enhancement are not enhancements at all, because they would decrease our chances of leading a life that’s good for us.

⁵ The distinction between enhancements that aim at helping us achieve our goals by removing biological limits and enhancements that aim at other ends is fuzzy both because a person’s desire for a given enhancement could be overdetermined and because goals of self-expression, play, and so forth are themselves in some cases goals whose pursuit could instrumentally involve the removal of biological limits. The fuzziness of the distinction is not a problem, because we can focus our attention on paradigm cases and away from the gray areas.

different set of questions. While moderate enhancements currently exist, radical enhancements are currently speculative.

The speculative category of radical, limit-mitigating enhancements includes modifications that introduce novel sensory modalities or other abilities, as well as modifications that yield huge increases in healthy longevity, cognitive processing and memory retrieval, and physical strength and agility. These are the enhancements transhumanists expect will secure a future filled with new stockpiles of human (or post-human) well-being.⁶ These are the enhancements I believe will probably make us worse off than we are without them.

1.2. “Stable Strategies for Middle Management” as a Described Case

I intend to treat Eileen Gunn’s “Stable Strategies for Middle Management” as a described case, using the beliefs we, as readers, form in response to it as the basis of an argument from analogy. Structurally, my argument is similar to the analogies to fanciful cases that are familiar throughout contemporary philosophy. Fanciful examples (such as Thomson’s violinist) are short and easy to sketch with no loss of fidelity; they can be recapped.⁷ Gunn’s story, in contrast, is a rich piece of fiction with an idiosyncratic narrator embedded in a specific social context; it cannot be recapped effectively. For my argument to have any hope of success, it will have to be the case that you, reader, form the beliefs in response to the story I expect you will form. So if you haven’t read “Stable Strategies for Middle Management,” please read it now.⁸

Before the argument, the facts of the case. Margaret, our narrator, knows what she wants: “I want to be in charge. I want to be the boss” (in Gunn 2004, 12). She has identified a position in middle management as the best way to satisfy this desire, and so has purchased, with the support of her employer, a specific radical genetic enhancement: the No. 2 Insect Option, which is targeted at developing the traits “useful in gaining entry to upper hierarchical levels” (12). The Insect Option is slowly remaking

⁶ For a sampling of early transhumanist optimism, see Naam (2005), Kurzweil (2006), and Grey and Rae (2007).

⁷ I will make occasional illustrative reference to Judith Jarvis Thomson’s violinist case from “A Defense of Abortion” (1971): imagine you wake up in the hospital, back to back with a famous violinist. Doctors inform you that the violinist’s kidneys have failed and yours are a perfect match for them. They have hooked his circulatory system into yours, so that he may use your kidneys. Does the famous violinist’s right to life entail a right to use your body for life support? Thomson expects you will judge that this is not the case.

⁸ “Stable Strategies for Middle Management” first appeared in *Isaac Asimov’s Science Fiction Magazine* in June 1988 and is included in Gunn’s 2004 collection *Stable Strategies and Others*. The Internet Archive offers free digital loans of that collection: <https://archive.org/details/stablestrategies00gunn>. For a full reprint bibliography, visit the story’s page at the Internet Speculative Fiction Database: <http://www.isfdb.org/cgi-bin/title.cgi?40920>. The page numbers I cite reference Gunn’s 2004 collection.

Margaret's body—before the story's opening, her tongue has turned into a stiletto, and by story's end she has developed compound eyes. The Insect Option is also remaking her mind: "I used to be more patient, didn't I? More appreciative of the diverse spectrum of human possibility. More interested in sex and television" (14). Margaret is unsettled by her friends who approach enhancements differently. Greg has purchased a butterfly-based package, a poor fit for his corporate job, because "he just wants to look nice, like Michael Jackson" (10), and David is scrupulously unenhanced—he "simply does what he wants to do" (14). Her worries calm as the No. 2 Insect Option continues to remake Margaret for middle management. As her eyes turn compound, she reports: "I felt a deep chemical understanding of the ecological system I was now a part of. I knew where I fit in" (17). She returns to her office, where she literally bites the head off her boss. She is momentarily surprised by her instinct-driven murder but recognizes that "this certainly is a useful strategy, and should make a considerable difference in my ability to advance myself" (17).

1.3. *The Argument*

On reading "Stable Strategies for Middle Management," I form the following judgment about the prudential value of the choices Margaret makes: her enhancements are unlikely to make her life go better for her; in fact, they are likely to make her life worse than it otherwise might have been. This is because the values she pursues—clustered around her desire "to be the boss"—do not appear to be values that are a good fit for her. Her No. 2 Insect Option merely allows her to pursue more effectively a set of corporate, ladder-climbing values that is detrimental to her own well-being.

Worse, the No. 2 Insect Option locks her into that course. After she has remade herself with a stiletto tongue, a nervous disposition, and strong, sharp mouthparts, she will find it hard to escape from the middle-management niche she's worked hard to slot herself into. ("But was it possible to just quit, to go back to being the person I used to be? No, I wouldn't be able to do it. I'd never be a management virgin again" [15].) Her enhancements are likely to close off various life alternatives that are better for Margaret—a different job, a different set of relationships and projects—*because* they are likely to give her the specific kind of middle-management success she seeks. For her, buying the No. 2 Insect Option is a prudential mistake not because she gets something other than what she bargained for but because she gets exactly what she sincerely (though mistakenly) believes is best for her.

This is not a deep reading or a theory-mediated interpretation I am offering. I am treating the story as a (rich and nuanced) described case and reporting my reaction to it. Much as I form the belief that the famous violinist does not have a right to use my kidneys, I form the belief that

Margaret has probably made a prudential mistake in choosing the No. 2 Insect Option. This is a judgment I expect you share.

The key features, then, of the case Margaret suggests for us are these: (1) her current set of values is not conducive to her own well-being and (2) if she is effective in fulfilling those values, she is less likely to grow beyond them. These are features she shares with nearly all of us. Our understanding of ourselves and of the world, and thus our values, continue to develop over the course of our lives. As with Margaret, the values we have now are unlikely to be the best fit for us. And we, like her, are less likely to change course when we are successful at pursuing the values we have.

In “Stable Strategies” we find in Margaret a character we can recognize—a character pursuing values she’d be better off changing. And in the story, we can see that radical enhancement in pursuit of those values worsens her predicament. The argument, bounded in a nutshell: radical enhancements are, for Margaret, probably a prudential mistake. The rest of us are not meaningfully different from her. Therefore, radical enhancements are, for us, probably a prudential mistake.

1.4. *Objections and Replies*

Are there relevant differences between Margaret and the rest of us, such that enhancing could be good for us, though bad for her? A few possibilities:

1.4.1. *Margaret has shallow values, and my values are deep.* This misses the point. The problem is not that Margaret’s desire to be the boss is *shallow*. The problem is those values appear to be a poor fit for her. Much as many people who desire fame would not be happy were they famous, Margaret is unlikely to be happy wielding power in her cubicle wasteland. I have no doubt that some people thrive in middle management, and Margaret-style values would be a good fit for them. But Margaret-style values are not a good fit for Margaret. This is not an evaluative claim about the depth or decency of Margaret-style values but rather a judgment that those values undermine Margaret’s own well-being.

1.4.2. *Margaret’s values are (or ought to be) in flux, in a growth phase, and my values have stabilized in maturity.* It is unlikely that your values have stabilized in maturity. Psychologists have a term for the widely held but mistaken belief that we have achieved a stable set of values: the end of history illusion. “Young people, middle-aged people, and older people all believed they had changed a lot in the past but would change relatively little in the future. People, it seems, regard the present as a watershed moment at which they have finally become the person they will be for the rest of their lives” (Quoidbach, Gilbert, and Wilson 2013).

This result is not particularly counterintuitive. Call to mind a time slice of yourself ten years ago. No matter how old you are, I’m willing to bet

that ten years ago you believed you had figured out what matters to you in life, and I'm willing to bet that your values today are different from what they were then. Induction suggests your values a decade hence will differ from your values today. Some people might achieve the end of their own histories long before they die, but the odds are that you and I are not among them.

1.4.3. Margaret's enhancements are narrowly targeted at a specific conception of the good life, while the radical enhancements transhumanists seek are compatible with nearly any conception of the good life. Margaret's enhancements are indeed targeted at a specific conception of the good life: the life of a middle manager. The specificity of the set of traits Margaret enhances makes it easy to believe that she is right when she declares she'll never be able to change course. After she rebuilds herself as the genetically ideal middle manager, she'll probably remain a middle manager. I suspect transhumanists see Margaret's case as starkly different from the futures they imagine for themselves. Aubrey de Grey and others who hope for eternal youth aren't pursuing a path as narrowly conceived as Margaret's. Someone who can expect to live for a thousand years can pursue many conceptions of the good during that time. They won't be stuck in middle management.

There is precedent for this line of objection in earlier discussions of enhancement. John Mackie and Jonathan Glover have worried that parents who select traits for their children will leave children saddled with traits that are valued by an earlier generation, and not by their own: if "genetic engineering had been available in Victorian times, people might have designed their children to be patriotic and pious" (Glover 2006, 98). Responding to Jonathan Glover, Nick Bostrom and Rebecca Roache write that parents should "restrict themselves to shaping characteristics that are likely to benefit the child regardless of her eventual preferences and values, and regardless of her cultural context" (2007, 147). I presume they would say the same of Margaret: her prudential mistake is in choosing *too specific* a radical enhancement. She should instead have selected an enhancement that would support the pursuit of any preference or value.

For two reasons, I suspect this objection isn't as strong as it appears. First, suppose for the sake of argument that transhumanists are right that the enhancements they imagine would support the pursuit of various conceptions of the good. There is, at present, little reason to believe that the enhancements transhumanists imagine are the enhancements we will get. Inventing and integrating new sensory modalities, ending aging, and massively increasing general intelligence are ambitious goals, and such basic interventions in the raw material of humanity may not actually be possible. Even if some future era does include full-blown transhumanist technologies, we are likely to spend quite a while living with their predecessor components. In short: the general-purpose enhancements transhumanists believe will support the pursuit of nearly any conception of the good are

significantly *more speculative* than specific enhancements targeted at specific conceptions of the good life. Even if my argument fails in some highly speculative futures, it is still relevant to many nearer futures.

Second and more important, it simply isn't true that transhumanist visions are broadly agnostic between different sets of values. Even de Grey's dream of eternal youth rules out many conceptions of the good. Philosophers as respectable as Michel "To Philosophize Is to Learn to Die" de Montaigne and Bernard "Tedium of Immortality" Williams have argued that the desire for eternal youth is a value that fades (or should fade) with maturity.⁹ Though eternal youth is certainly a broader enhancement than Margaret's No. 2 Insect Option, it might well be that enhancing for youth risks locking in childish values that are hostile to our own well-being.

1.5. Summary

The features that make radical enhancement a prudential mistake for Margaret are features we all share: we haven't finished our process of personal development, and it is possible for us to stunt that process in a way that would be bad for us. If we can see clearly that Margaret's radical enhancements are probably a prudential mistake, we should worry that radical enhancements are probably a prudential mistake for us, too.¹⁰

When I recall earlier stages of myself, this argument from analogy is uncomfortably plausible. For example, a much earlier time slice of me was serious about soccer. Suppose, when I was sixteen, I had been able to remake my body and mind in pursuit of soccer excellence. Suppose I could have buffed my strength, agility, visual acuity. Suppose I could have dulled my curiosity about things other than soccer and increased my motivation to practice. I expect that, thus enhanced, I could have made it further than I did—which is why I fantasized about getting exactly those enhancements. In reality, I quit soccer before I turned eighteen, in large part because I didn't want to devote the time necessary to excel in a competitive sport—there were too many other aspects of life that interested me. In retrospect, I am relieved to have followed the course I did. I am lucky that my younger self did not have access to the enhancements he wanted. That child could not have been trusted to make a wise decision.

From the perspective of the present day, I can see that my sixteen-year-old self, given the chance, would probably have made the same

⁹ See Montaigne (1905, chap. XIX) and Williams (1973) for the sources of these joke monikers.

¹⁰ Again: it is *radical* enhancements I suspect would make our lives worse for us by stunting our personal growth. Moderate enhancements do not clearly carry the same risks, and some moderate enhancements might even foster personal growth by compensating for unjustly imposed social and economic handicaps (Trujillo 2018).

prudential mistake Margaret makes. If I accept that my present-day values are unlikely to be the values I will die with, then I should hesitate, on prudential grounds, to seek radical enhancements in pursuit of the values I have now.

I'm hardly the first to suggest that humanity's track record should inspire little confidence in our ability to deploy radical enhancements wisely. Frances Kamm worries that shallow values and lack of imagination will prompt people to choose a lamentably narrow range of enhancements that "will limit the number and combination of goods from what is possible" (2005, 14). Shannon Vallor worries that "contemporary humans lack the necessary virtue to use our expanding technological powers to achieve a qualitatively higher form of life, *or even to properly identify one*" (2011, 149). While I share their concerns, I am here making a simpler, less visionary claim. Radical enhancements would probably be bad for you in the immediate, kick-you-in-the-neck, first-person prudential sense: you're better off without them. Free from radical enhancements you will probably be better able to live a life that's good for you.

In making this case I've relied on a science fiction story. In the second section of the paper, I defend this method.

2. The Value of Speculative Fiction for Speculative Ethics

"Speculative ethics" is a term that picks out philosophical inquiry into ethical controversies that don't yet exist. Those engaging in speculative ethics first speculate about the direction of technological, social, political, or environmental developments and then analyze the new ethical issues that would appear if that world were to come to be.

Several critics have dismissed the entire endeavor of speculative ethics as pointless or even harmful. My aim in this section is not so ambitious as to issue, or answer, such a blanket dismissal but simply to respond to the concerns expressed in it, in order to help characterize the appropriate subjects and methods of speculative ethics. I defend three methodological claims. First, the subject of speculative ethics should be the exploration and evaluation of values, not the defense of policies. Second, principlism in speculative ethics is impossible; speculative ethics must develop through case-based methods. Third, speculative fiction provides ideal cases for speculative ethicists to analyze.

2.1. *The Subject of Speculative Ethics: Values, Not Policies*

Around the turn of the millennium, knowledgeable people made spectacularly wrong predictions about the near-future consequences of the Human Genome Project. Perhaps most prominently, Francis Collins, then director of the Human Genome Project (and currently director of the National Institutes of Health), predicted that a complete map of the human genome

would almost immediately revolutionize medicine. In his 1999 Shattuck Lecture, Collins speculated about the future of walk-in clinics in the age of genomic medicine. He predicted that by 2010 people could walk into a clinic and, through the power of genomic medicine, discover nascent heart disease and nip it in the bud with prophylactic drugs tailored to their DNA (Jones, Whitaker, and King 2011, 139). A decade beyond that deadline, it is clear that the predicted revolution in genomic medicine was predicated on some false beliefs about the relationship between genes and health. Routine applications of genomic medicine are further in the future, and probably less decisive, than advocates of the Human Genome Project predicted.

The difficulty of prediction is a problem for some projects in speculative ethics. Any turn-of-the-millennium ethicists who devoted time and attention to hashing out principles and policies governing Collins's imaginary walk-in clinics wasted their time. Meanwhile, while they mulled over technologies that might never be invented, there were real-world ethical controversies that were then (and remain now) under-discussed. If predictions about the future are *typically* wrong, then ethicists who spend their attention debating specific imaginary technologies and the moral and institutional policies appropriate for them are *typically* diverting attention from under-discussed real-world issues toward ethical issues that will probably never come to pass. Thus, some critics conclude that "the opportunity costs of speculative ethics are too high, with less spectacular but more pressing 'here and now' ethical issues not getting the attention they deserve" (Nordmann and Rip 2009, 273). Some critics go so far as to urge the general abandonment of speculative ethics in favor of analysis of issues people face in the present (Nordmann 2007; Gilbert and Goddard 2014).

These concerns suggest that there are some speculative questions that are not appropriate subjects of philosophical research. If we wish to avoid wasting our time and attention, then philosophers should not focus on specific technologies that are as yet speculative. What CRISPR technologies will be available through the mail twenty years from now? Whatever guess we venture will probably be wrong, and it would be a waste of time to propose codes of ethics, public policies, or legal regulations governing any specific, as-yet-imaginary CRISPR tech. If an ethicist hopes to contribute guidelines governing a specific technology, then much better to take up a real technology than an imaginary one that probably won't come to pass.

But the difficulty of specific predictions does *not* give us reason to abandon speculative ethics in general. Though we cannot predict with even gauzy clarity the specific technologies, social trends, or environmental and political changes that await us in the future, we can make some broad assertions with confidence. In the future, we will have more medical and technological power over our own bodies. We will have more power to select

the traits of our children. Computers will take over an expanding swath of jobs. Corporations and governments will have access to increasingly detailed personal information about nearly everyone. Specifics are hard; broad trends are easy.

Those broad trends prompt a wide range of ethical questions. Are there kinds of control over our children's bodies we should not want? How should we value labor in a world in which labor has no *market* value? Which varieties of privacy remain important for well-being in a socially networked world? These questions don't require specific predictions, and answering them thoughtfully—which is to say, doing speculative ethics—focuses our attention on which lines of research and technological application will help us “live the kinds of lives we genuinely want to live” (Vallor 2015, 122). Refusing to think about ethical ramifications of future technology, on the other hand, renders us passive, mere observers “vulnerable to a tsunami of technological change” (Moor 2005, 119).

Rebecca Roache puts the point this way: “Reflecting on where our most important values lie, and how we might work to maximise them, is surely an important step towards ensuring that ethical concern, and other valuable resources, are not squandered. And, as philosophers have long known, one of the most effective ways of discovering deeply-held values involves speculating about incredible scenarios” (2008, 326). Diane Michelfelder agrees: speculative ethics “can allow for critical values to emerge that might otherwise go unheeded, open up avenues to reframe issues that might otherwise go unnoticed, and, perhaps most importantly, permit questions to be raised that might otherwise go unvoiced” (2011, 55).

The lesson to draw from the opportunity-cost critique of speculative ethics is that speculative ethics should not evaluate specific imaginary technologies. Speculative ethics, properly performed, is an inquiry into the values implicated in technological and social change, “or, more precisely, the *desirability of these values*” (Ferrari, Coenen, and Grunwald 2012, 225). Values-oriented approaches to speculation about our technological futures can succeed despite our consistent failure to accurately predict specific technologies.

In section 1, I modeled an argument in speculative ethics that does not depend on accurate predictions. No one expects that the No. 2 Insect Option will be marketed to office workers, and I did not argue for any principles or policies governing that technology. Instead, my argument suggests that at least some of the radical, limit-mitigating enhancements that transhumanists want are things we probably should not want.

A related objection to speculative ethics cites the threat such inquiries potentially pose to current research. These critics of speculative ethics note a too-common phenomenon: alarmist speculative scenarios stymie current research, even when those speculative scenarios have little or nothing to do with the current research. For example, in the 1980s Eric Drexler

imagined a future in which self-replicating nanobots digest the world, leaving behind nothing but gray goo (1986, chap. 11). He now regrets writing about gray goo, because even though no research programs in nanotechnology seek to develop self-replicating nanobots, “fears associated with that old scenario are interfering with current research” (Giles 2004, cited in Jones, Whitaker, and King 2011).

The same pattern has unfolded in other lines of research. The President’s Council on Bioethics once imagined cold-blooded super-soldiers coaxed into amorality through the pharmacological manipulation of their memories; that terrifying vision hampers present-day research in memory attenuation as a treatment for PTSD (Henry, Fishman, and Youngner 2007). Alarmist speculative scenarios about embryo hacking have slowed therapeutic research on stem cells (Jones 2006). In cases like these, people conflate unlikely speculative technologies with present-day research that is barely connected with those speculative technologies, and they oppose both because they fear a speculative future. This threat to current research leads some, like Jones, to call for a general moratorium on “baseless speculation” in bioethics (2006, 80–81).

This line of objection to speculative ethics is less interesting than the first, because the concern that speculative ethics will improperly hamper current research is not so much a problem with speculative scenarios as it is a problem with people who *abuse* speculative scenarios. The abuse of speculative scenarios is a specific instance of a general truth: research in every field is open to misinterpretation, misunderstanding, and misuse. The fact that research can be misused does not establish that it should be abandoned.

The abuse of speculative scenarios (for example, gray goo) to constrain unrelated current research (for example, carbon nanotubes) is closely analogous to the abuse of ticking-bomb scenarios to justify pro-torture public policies. Ticking-bomb arguments begin by setting up a fanciful scenario: imagine a terrorist has planted a bomb that will kill a million innocent people, and the only reliable way to get the information necessary to defuse the bomb is to torture the terrorist. Is torture in this case morally permissible? If your answer is “yes,” the philosophically responsible conclusion to draw is that torture is not categorically impermissible. But ticking-bomb arguments are not always employed responsibly. Too often, those fond of torture use these scenarios to argue that torture ought to be available to government agents in the real world. This is philosophical malpractice; the real world is nothing like the ticking-bomb scenario, and there is no reason to think policies that might be defensible in a heavily stipulated fantasyland are defensible in the real world.

Ticking-bomb scenarios are useful as a philosophical device for testing beliefs about the categorical impermissibility of torture; they are not useful as cases on which to ground public policy (Shue 2005, 233). The fact that some politicians, lawyers, and philosophers have tried to use ticking-bomb

scenarios to justify pro-torture policies does not show that there is a problem with the philosophical method; it shows that these people are bad at their jobs (Stoner and Swartwood 2017, sec. 3.1).

Similarly with speculative ethics. Speculative scenarios are useful as a tool to support the exploration and evaluation of beliefs and values that will probably be salient in the future. If some people conflate these speculative scenarios with present-day circumstances they little resemble, this is not the fault of the tool, it is the fault of the people who misuse it. The lesson to draw from the speculation-hampers-progress critique is that speculative ethicists should be clear that their speculations are intended to uncover and evaluate *values*, not to import norms or policies appropriate for imaginary technology into present-day research.

In section 1, I used a speculative example in support of a conclusion about values: enhancements that are attractive because they promise to give us access to what we value could undermine our well-being even when they give us exactly what they promise. This conclusion could have *indirect* consequences for future research. In the distant possible world in which a critical mass of people finds arguments like mine persuasive, we might choose to allocate scientific and technological resources in pursuit of goals other than radical enhancement. But this argument has no *direct* implications for present-day policies, laws, or research programs.

Indeed, grounding my argument in speculative fiction has a welcome side effect: it heads off any misguided urges to import norms from fantasyland into the real world. It would take herculean obtuseness to conflate Margaret's No. 2 Insect Option with any present-day technologies, and this is in part due to the fact that the case the argument analyzes is plainly marked as *fiction*, as opposed to an earnest attempt to predict the future.

2.2. *The Method of Speculative Ethics: Cases, Not Principlism*

One long-standing method in medical ethics is the four-principles approach of Tom Beauchamp and James Childress (2008). Ethicists using this method to evaluate an ethical question first uncover the facts relevant to the question, then apply four principles: the principle of respect for autonomy, the principle of nonmaleficence, the principle of beneficence, and the principle of justice. A successful application of the four principles is supposed to yield guidance about how to proceed in difficult cases.

Some projects in speculative ethics have sought to extend this kind of principlism to proposed research programs and developing technologies. For example, Ethical Technology Assessment (eTA), an early attempt to establish a framework for the ethical evaluation of emerging technologies, took the form of a checklist of nine key moral values, including "impact on human values," "dissemination and use of information," and "international relations" (Palm and Hansson 2006). Philip Brey (2012) offers a similarly minded but significantly longer ethics checklist for the assessment

of emerging technologies. That checklist includes four categories of values (Harms and Risks, Rights, Distributive Justice, and Well-Being) divided into a total of twenty-two subcategories and twelve sub-subcategories. Both approaches, like Beauchamp and Childress's principlism, aim to standardize a set of principles that, when applied to any specific case, yield guidance about how, ethically, to proceed.

In real-world health care scenarios, it isn't clear that Beauchamp and Childress's four principles are practically useful for decision making (Page 2012; Westin and Nilstun 2006). This should come as no surprise, since the ability to perceive which values are salient in a complicated situation and the ability to creatively balance apparent conflicts of values are to a significant extent the substance of moral wisdom. Naming principles of nonmaleficence, autonomy, and so on, can help structure conversations about ethical challenges, but resolving those challenges requires the wisdom to understand how those principles interact with each other and with the details of a situation (O'Neill 2001).

In the occasional real-world medical controversy in which the four-principles approach yields a clear answer, it certainly requires something approaching full information about the situation; principles are no help when we are missing key descriptive information those principles are supposed to process into a normative conclusion. And this is fatal to principlism in *speculative* ethics, whether employing Beauchamp and Childress's four principles, Palm and Hansson's nine principles, or Brey's thirty-plus principles. Even if those engaging in speculative ethics were moral experts, they cannot possibly gather the information necessary to apply a catalog of prepackaged principles, because that information doesn't currently exist and cannot be predicted.¹¹

Case-based methods of ethics are not vulnerable to the same objection. Case-based methods—I discuss the two most prominent ones in the next section—all begin by eliciting a judgment about a relatively uncontroversial described case. There is little doubt that we can form judgments about speculative cases in the form of fanciful philosophical examples (such as Nozick's experience machine, Routley's last man, Warren's space traveler). There is still less doubt that we can form moral judgments in response to speculative literature: Winston Smith is harmed by his rat-helmet epiphany in *Nineteen Eighty-Four*, Offred is oppressed by social arrangements that claim to venerate her in *The Handmaid's Tale*, and the ones who walk away in Ursula Le Guin's "Omelas" deserve our respect. These moral

¹¹ Exactly the same argument applies to any theory-application method of applied ethics. Applying a consequentialist, deontological, or virtue theory to a specific controversy always requires substantial reliable information about that controversy, and reliable information cannot exist for speculative controversies. For further discussion of some challenges of adapting theory-application methods of bioethics to speculative ethics, see Racine et al. (2014, 332–33).

judgments about speculative fiction could potentially be effective contributors to case-based methods of ethics, even though it would be absurd to approach these same stories in the manner of a principlist. (Suppose Offred asks a Gileadean nurse about abortifacient plants. What should the nurse do? Let's turn to Beauchamp and Childress's four principles for an answer.)

We cannot usefully apply a prepackaged catalog of moral principles to speculative scenarios, but we can form moral judgments in response to speculative cases. The lesson to draw is that speculative ethics should avoid principlism in favor of case-based methods. In section 1, I did exactly that, by eliciting a judgment about a relatively uncontroversial case—Margaret's insect enhancements—and using that judgment to ground an argument about the sorts of enhancements many people hope one day to get.

2.3. The Argument for Speculative Fiction in Speculative Ethics

So far in section 2 I have argued for the following claims. Speculative ethics should not focus on developing policies governing future, as yet speculative, technology; rather, speculative ethics should focus on uncovering and evaluating the values that are likely to be salient in a broad range of possible futures. Speculative ethics should take care to maintain a bright distinction between imaginary scenarios and the real world. And speculative ethics should proceed using case-based methods, not through the application of prepackaged principles.

From here, the methodological argument in favor of speculative fiction follows from the question: What type of cases should speculative ethicists use? There are two obvious candidates. Speculative ethicists could use existing fictional cases, as written by authors of speculative fiction; or they could invent their own described cases, in the form of the fanciful examples that pervade philosophical research.¹²

Concise, wholly invented described cases are especially useful when employed within the method of wide reflective equilibrium, because authors can tailor them to elicit a judgment about the invented case that is in clear tension with a specific target belief. (For example, Thomson designed her violinist example to elicit a judgment in clear tension with the target belief that the right to life entails a right to life support [1971, 56]). Fanciful examples, including those that read like speculative flash (that is, short short) fiction, can play this role well (Stoner and Swartwood 2017).

¹² A third possibility, modeled by Nick Bostrom in "The Fable of the Dragon Tyrant" (2005), is that philosophers could write their own fiction—not concise fanciful examples, but full-blown short stories—and then use their original fiction as the raw material for philosophical argument. This could (maybe, perhaps) be a viable method for those few philosophers able to write fiction of similar quality as authors who have spent years refining their craft. Even then, fiction written for the purposes of argument risks being "message fiction" in the pejorative sense.

So, naturally, projects in speculative ethics that develop arguments intended to challenge specific target beliefs can usefully employ standard fanciful examples.¹³

But projects in speculative ethics do not typically set out to challenge a clearly articulated target belief. The values-first approach I defended in section 2.1 seeks instead to uncover values that might become salient in the future, to anticipate the interactions between our values and our possible future circumstances, to ask what we should want. In order to investigate those questions we need to imagine ourselves living in circumstances unlike those we live in today, and that imaginative act requires a degree of fictional richness greater than fanciful philosophical examples typically provide. A one-paragraph fanciful example about a futuristic office worker seeking a promotion would be unlikely to elicit any of the insights Gunn's story does. To see the prudential mistake Margaret has made requires us to imaginatively immerse ourselves, for a time, in her world. Only after we have taken multiple perspectives on her, her circumstances, her values, and her choices can we begin to understand and evaluate them. The argument in section 1, like most values-first arguments in speculative ethics, cannot be based in the kind of concise described case we tend to associate with the method of wide reflective equilibrium.

Another standard use of described cases is within the method of casuistry. Here, described cases are not intended to challenge a specific target belief. Rather, described cases provide analogical guidance in controversial cases. Casuistic methods are particularly prominent in medical ethics. Many of the controversies of medical practice achieve their status as controversies precisely because it is unclear which beliefs and values are the relevant ones. In controversies like these, participants often struggle to articulate a belief that could be illustrated or challenged with a concise described case. Progress can still be made by searching for relatively uncontroversial and well-understood paradigm cases—preferably detailed real-world case studies—that share morally important features with the controversial case at hand. Participants can then ask: Which of these paradigms is closest to the controversy at hand? Is it similar enough that we can inform our moral judgments about the controversy by analogy to the paradigm (Jonsen and Toulmin 1990; Arras 2016, sec. 4.1)?

Much like these controversies of medical ethics, the controversies of speculative ethics are typically those in which it is difficult to articulate beliefs that could be illustrated or challenged with fanciful examples, because it is unclear which values will become salient in changing

¹³ Philosophical projects using the method of wide reflective equilibrium could certainly deploy speculative fiction in the role typically occupied by fanciful examples. For described cases that require difficult empathic projections or emotional engagement with the characters in them, speculative fiction is likely to be more effective than fanciful examples (De Smedt and De Cruz 2015).

circumstances, unclear how to balance values as they are brought into new forms of conflict by emerging technologies and social trends. And much as casuistic methods can support progress in medical ethics, casuistic methods can support progress in speculative ethics.

In advocating for casuistic methods in medical ethics, John Arras offers a list of recommendations, beginning: “1. Use real cases rather than hypotheticals whenever possible. 2. Avoid schematic case presentations. Make them long, richly detailed, messy, and comprehensive. Make sure that the perspectives of all the major players . . . are represented” (1991, 49). This is sensible advice. To draw analogical lessons applicable to the richly detailed and messy real world, we should expect to do better with richly detailed and messy described cases.

Medical ethicists can draw on a vast library of real-world case studies that satisfy Arras’s first two criteria. Speculative ethicists, of course, have no real-world case studies at all. But authors of speculative fiction have spent years or decades imagining different social arrangements, technologies, economies, and environments. They have devoted years to exploring how people might change and be changed by future circumstances. To succeed as a piece of speculative fiction, a work must strike a balance between breaking with the texture and circumstances of familiar life, while preserving sufficient continuity with it to allow readers cognitive and emotional access to the text.¹⁴ An excellent work of speculative fiction is thus something like a case study not of the real world but of a possible future world. If speculative ethicists are to use casuistic methods (and they should) then they should use the best speculative fiction as their “long, richly detailed, messy, and comprehensive” case studies.

If philosophers were to make better casuistic use of speculative fiction, they would be taking up the genre on one of its standing offers, for many of the best science fiction authors explicitly conceive as their stories as contributions to something similar to casuistic ethics. Ursula Le Guin, for example, once imagined how she would defend the *usefulness* of speculative fiction to a familiar sort of anti-fiction American man. Her first and truest defense, which she expects our familiar American man will reject, is that reading speculative fiction brings delight. Her second defense: “The use of imaginative fiction is to deepen your understanding of your world, and your fellow men, and your own feelings, and your destiny” (Le Guin 1979, 43).

Octavia Butler similarly describes the value of imagining the unpredictable future: “So why try to predict the future at all if it’s so difficult, so nearly impossible? Because making predictions is one way to give warning when we see ourselves drifting in dangerous directions. Because prediction is a useful way of pointing out safer, wiser courses. Because, most of

¹⁴ Thanks to Joshua Kortbein for suggesting this way of articulating my point.

all, our tomorrow is the child of our today. Through thought and deed, we exert a great deal of influence over this child, even though we can't control it absolutely. Best to think about it, though. Best to try to shape it into something good. Best to do that for any child" (Butler 2000, 264). Eileen Gunn, too: "It is not the task of science fiction to predict the future. Rather, SF gives us a way of thinking about humanity as a work in progress and contemplating what we might become. Science fiction proposes and examines possible futures, it extrapolates from contemporary problems and trends, but what it illuminates is the present" (Gunn 2014). In that same article, Gunn interviews several authors about why they choose to *speculate* in their fiction. A consensus emerges among such science fiction luminaries as Ursula Le Guin, Octavia Butler, Kim Stanley Robinson, Ted Chiang, and Neal Stephenson: they understand themselves to be doing the first part of the casuistic method of speculative ethics. They are writing imagined futures, in full knowledge that those futures are unlikely to come to pass, because they believe speculative stories are an enlightening method for examining present-day values, an aid in navigating toward a more decent future.

Technologists are increasingly aware of the value of speculative fiction as a guide to the ethical dimensions of emerging technologies. Dan Rockmore, professor of computer science at Dartmouth, includes science fiction in his syllabus for an advanced course on artificial intelligence. "My hope is that discussing these texts in AI classrooms will prod a few nascent developers to think differently about information centralization and ownership" (Rockmore 2017). Cory Doctorow (2018), tech activist and science fiction author, has highlighted the role science fiction can play in helping social media corporations steer themselves toward less awful destinations.

Philosophers, thus far, have made relatively little use of speculative fiction, but the stories are out there, waiting.¹⁵ When a science fiction story really *works*, when—like "Stable Strategies for Middle Management"—it is recognized within the field, passed between friends, and discussed for decades, it is usually because it elicits from readers a strong intellectual or emotional reaction. When a story elicits similar *normative judgments* from most who read it—Winston Smith is harmed, Offred is oppressed, Margaret isn't doing herself any favors with that insect DNA—then it provides an ideal described case for speculative ethics.

¹⁵ Alberto Giubilini and Sagar Sanyal note that the few existing appeals to speculative fiction in the enhancement debate skew bioconservative. They suggest these appeals are evidence of philosophical weakness: "An approach that is based on intuitions, emotions, and the notion of 'mystery' is more likely to find resources in poetic and rhetorical language than in argumentation and cool reasoning" (2016, 9). This analysis need not apply everywhere. The first step of an argument about a normative controversy must be the gathering of less controversial normative beliefs. Appeals to fiction can help with that first step, and thus be a part of argumentation and cool reasoning, not an alternative to it.

Philosophers' expertise is in arguments. When we are at our best we are good at recognizing tensions and contradictions between beliefs. We are good at abstracting principles from cases, good at challenging generalizations with counterexamples, good at recognizing analogies and disanalogies, good at giving reasons. Most of us are not well equipped to write literature. But philosophers in general, especially speculative ethicists, have the opportunity to help themselves to a rich literature of speculative case studies. If we can identify beliefs that many readers form in response to excellent speculative fiction, we can use those beliefs as input for philosophical argument. We should do that.

Conclusion

Speculative ethics can help us chart a decent course through a changing technological and social landscape. Speculative fiction can play an important role in speculative ethics. I have modeled one sort of contribution speculative fiction can make to speculative ethics by arguing, via analogy to Eileen Gunn's "Stable Strategies for Middle Management," that we probably have prudential reason to avoid the radical enhancements transhumanists seek.

Department of Philosophy
Saint Paul College
235 Marshall Ave.
Saint Paul, MN 55102
USA
ian.stoner@saintpaul.edu

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