**How to Play the "Playing God" Card**

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**Abstract**: When the phrase "playing God" is used in debates concerning the use of new technologies, such as cloning or genetic engineering, it is usually interpreted as a warning not to interfere with God's creation or nature. I think that this interpretation of "playing God" arguments as a call to non-interference with nature is too narrow. In this paper, I propose an alternative interpretation of "playing God" arguments. Taking an argumentation theory approach, I provide an argumentation scheme and accompanying critical questions that capture the moral concerns expressed by "playing God" arguments. If I am right, then "playing God" arguments should be understood, not as a warning to leave God's creation or nature alone, but rather as an invitation to think carefully about all the ways in which the use of new technologies could go seriously wrong.

**1. Introduction**

When the phrase "playing God" is used in debates concerning the use of new technologies, such as cloning or genetic engineering, it is usually interpreted as a warning not to interfere with God's creation or nature. For example, according to Evans (2002, 125), the phrase "playing God" "stands in for the argument that HGE [i.e., Human Genetic Engineering] is an arrogant *interference with the nature that God has created*" (emphasis added). In other words, the phrase "playing God" is understood as a call to non-interference with God's creation or nature. As Weckert (2016, 88) puts it, "playing God is *interfering with nature or modifying nature*, as in the genetic engineering example, and that this is morally wrong" (emphasis added).[1] Or, as Peters (2007, 173) puts it, "By 'playing God', [...] [w]e mean changing nature."

For the most part, textbook treatments of "playing God" arguments also construe such arguments as a warning not to interfere with God's creation or nature. For example, in the context of the debate over prenatal genetic testing, the "playing God" argument against trait selection is presented as follows in one textbook (Barry 2012, 239):

> It is frequently argued, religiously, that trait selection is against God's will for human reproduction and life's meaning and purpose. Because children, regardless of traits, are a gift from God, by *intervening in the divinely directed course of reproduction*, as by trait

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[1] Weckert (2016, 97) goes on to say that "playing God" is "expanding the sphere over which we have control to the extent that we no longer have the knowledge or capacity to competently make decisions with respect to the expanded part." For Weckert (2016, 98), this "suggests that, strictly speaking, the 'playing God' phrase is redundant" because he thinks of "playing God" arguments as arguments from consequences. As I will argue in Section 4, "playing God" arguments should not be construed as arguments from consequences.

selection, we are playing God and, therefore, denying God's wisdom of what is best for us (emphasis added).

In other words, people should not use Assisted Reproductive Technology (ART) to intervene in human reproduction, which is best left to God or nature.[2] As the author of another textbook puts it, those who put forth "playing God" arguments "fear that humans are going beyond appropriate limits in remolding or 'recreating' the human's nature" (Veatch 2016, 146). Likewise, Link (2013, 444) interprets "playing God" arguments as expressing "the worry [...] that [synthetic biologists] might 'play' with nature in a carefree way."

I think that this interpretation of "playing God," "in the secular sense of interfering with nature" (Weckert 2016, 97), arguments as a call to non-interference with nature is too narrow. When arguers make such arguments, they are concerned about interfering with God's creation or nature, to be sure, but they have additional moral concerns that the non-interference with nature interpretation of "playing God" arguments leaves out. In this paper, then, I propose an alternative interpretation of "playing God" arguments. Taking an argumentation theory approach, I first explain the role that the concept of God should play in "playing God" arguments, as I see it, and then I provide an argumentation scheme with accompanying critical questions that capture the moral concerns expressed by "playing God" arguments. The accompanying critical questions are designed to help determine whether using a new technology counts as "playing God" when a "playing God" argument is made. If I am right, then "playing God" arguments should be construed, not as a warning to leave God's creation or nature alone, but rather as an invitation to think carefully about all the ways in which the use of new technologies could go seriously wrong.

Construed in this way, I submit, "playing God," "in the secular sense of interfering with nature" (Weckert 2016, 97), arguments can have a legitimate place in debates concerning the use of new technologies, such as cloning, genetic engineering, and the like, contrary to those who argue that such arguments are redundant, unhelpful, or even meaningless. For instance, Weckert (2016, 98) writes:

> the 'playing God' phrase is redundant and perhaps just a rhetorical device [...]. If all of the work is done by the *consequences* of an action and not by its intrusion into the realm of God or nature, then playing God adds nothing to cost-benefit analysis, the precautionary principle, or some other risk-assessment strategy. From a secular perspective then the notion of playing God is redundant (emphasis added).[3]

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[2] On whether or not the phrase "playing God" has its origin in Christian theology, see Peters (2003). Peters argues that there is no place in Christian theology for the "playing God" argument. For Peters (2007, 182), the issue is not whether new technologies are morally objectionable because they interfere with God's creation, but rather whether new technologies "will respond to a transcendental ground for goodness and will enhance our capacity to love." On the other hand, concerns about "playing God" can be traced back to the Hebrew Bible for, insofar as God granted human beings dominion over nature, there is a danger that humans would abuse their authority over nature (see, e.g., Isaiah 45:9-12). At any rate, secular "playing God" arguments can be, and indeed have been, advanced by non-religious philosophers. See, e.g., Sandel's (2007) "playing God" argument against human genetic enhancement.

[3] In my argumentation scheme for "playing God" arguments, the work is done by the concept of God, not by the consequences of actions. I will say more about that in Section 4.

Along similar lines, Cavanaugh (2002, 119-120) argues that "reference to God is not necessary [and] not helpful in bioethical disputes." Others have argued that the phrase "playing God" is meaningless. For instance, according to Ball (2010), "playing God" is a meaningless "cliché mouthed mindlessly." If I am right, however, then the concept of God can be meaningful and useful in bioethical disputes provided that "playing God" arguments are interpreted as invitations to think carefully about all the ways in which the use of new technologies could go seriously wrong instead of warnings to leave God's creation or nature alone. To appreciate how "playing God" arguments can be helpful and meaningful in such debates, one first needs to understand the role that the concept of God should play in "playing God" arguments. In the next section, then, explain the role that the concept of God should play in "playing God" arguments, as I see it.[4]

## 2. The Role the Concept of God Should Play in "Playing God" Arguments

Clearly, the concept of God is supposed to play a role in "playing God" arguments; otherwise, why mention God at all? But what role should this concept play? How should one decide what counts as "playing God"? More specifically, what determines whether the use or application of a new technology amounts to "playing God"?  In this section, I explain the role that the concept of God should play in "playing God" arguments, as I see it.[5]

The traditional conception of God is that of a maximally perfect being. More explicitly, "the orthodoxly conceived monotheistic god of traditional Western theism" is an "omniscient, omnipotent, omnibenevolent, eternal creator *ex nihilo* of the universe" (Oppy 2006, 16). That is, the concept of God is that of an all-powerful (omnipotent), all-knowing (omniscient), and all-good or morally perfect (omnibenevolent) being (Wierenga 1989, 1).[6] As an omnipotent being, God is supposed to be the sort of being who will never lose control over new technologies. In other words, any new technology, no matter how powerful, is no match for God's power.[7] For

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[4] It is important to note the difference between the so-called "God complex" and the notion of "playing God." As far as I can tell, the former comes from psychoanalysis and the writings of the likes of Ernest Jones. According to Jones (1923, 207), "the main foundation of the [God] complex is to be discovered in a colossal *narcissism*, and this I regard as the most typical feature of the personalities in question. All the character-traits presently to be described can either be directly derived from narcissism, or else stand in the closest connection with it" (emphasis in original). Accordingly, unlike the "God complex," which has to do with a narcissistic personality, the notion of "playing God" pertains specifically to actions that can be evaluated from a moral point of view regardless of one's psychological makeup and/or character traits. For this reason, one can have a "God complex," i.e., be a narcissist, without "playing God," although one might "play God," of course, and one can "play God" without being a narcissist (or having a "God complex").

[5] As such, what follows is a *normative*, not a descriptive, account of how the concept of God *should* be used (as opposed to how it is in fact used) in "playing God" arguments. It would be interesting to find out how the phrase "playing God" is actually used by arguers, but that is not my aim in this paper. The descriptive part of this paper begins and ends with my claim that the standard interpretation of "playing God" arguments as a warning to leave God's creation or nature alone (discussed in Section 1) is too narrow to capture all the moral concerns expressed by "playing God" arguments. For empirical evidence suggesting that "people condemn scientific procedures they perceive to involve playing God," see Waytz and Young (2019). In this paper, my aim is to show how "playing God" arguments should be analyzed and evaluated using my proposed argumentation scheme and its accompanying critical questions.

[6] "According to traditional western theism, classically expressed by Anselm and others, God is the greatest being possible" (Hoffman and Rosenkrantz 2013, 319). In philosophy of religion, "Western theism" generally refers to the so-called "Judeo-Christian tradition," i.e., the God of the monotheistic religions: Judaism, Christianity, and Islam.

[7] I use the phrase "supposed to" here to indicate that my concern is with the *concept* of God, not the *being*. That is, the Western theistic conception of God is that of a "maximally great (or perfect)" being (Hoffman and Rosenkrantz

this reason, new technologies could not get out of control when God is in charge of them.[8] Unlike God, human beings are not omnipotent, and so they could lose control over new technologies when they use or apply them. For this reason, new technologies could get out of control when humans, not God, are in charge of them.

Likewise, as an omniscient being, God is supposed to be the sort of being who would be able to foresee all the bad consequences that might come about from using or applying new technologies. In other words, any new technology, no matter how sophisticated, is no match for God's knowledge. For this reason, new technologies could have no unforeseen consequences when God is in charge of them. Unlike God, human beings are not omniscient, and so they are unable to foresee all the bad consequences that might come about from using or applying new technologies. For this reason, new technologies could have unforeseen consequences when we humans, not God, are in charge of them.

Finally, as an omnibenevolent being, God is supposed to be the sort of being who would never misuse or abuse new technologies. In other words, any new technology, no matter how tempting it is to misuse or abuse it, is no match for God's goodness. For this reason, new technologies could not be misused or abused when God is in charge of them. Unlike God, human beings are not morally perfect, and so we could misuse or abuse new technologies. For this reason, new technologies could be misused or abused when humans, not God, are in charge of them.

Given this conception of God, then, for humans to "play God" is to pretend they are as powerful as God is, and so new technologies could not get out of control when they use or apply them. For humans to "play God" is to pretend they are as prescient as God is, and so new technologies could not have unforeseen consequences when they use them. For humans to "play God" is to pretend they are as morally perfect as God is, and so new technologies could not be misused or abused when they use them. Of course, humans are not as powerful, prescient, or morally perfect as God, and so new technologies could get out of control, have unforeseen consequences, and be misused or abused by humans.

In that respect, the concept of God is useful for "playing God" arguments precisely because it is the concept of an all-powerful, all-knowing, and all-good being. If one (inspired by Gaunilo[9]) is tempted to say that the concept of wizard, or dragon, or anything whatsoever, can play the role that the concept of God should play in "playing God" arguments, the reply (inspired by Anselm[10]) would be that only the concept of God can play this role. This is because, unlike wizards, dragons, and the like, God is supposed to be all-powerful, all-knowing, and all-good *by*

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2017). Whether such a being exists, the concept is still that of a maximally great (or perfect) being just as, whether any triangles exist, the concept of triangle is still that of a plane figure with three straight sides and three angles. For this reason, I can talk about the concept of God while putting aside the question about the existence of God. This point will become important, as we will see, in Section 3.

[8] Of course, God does not need to use technology because God is supposed to be an omnipotent being. For this reason, it might seem a bit strange to say of God that he would use technology. However, just as God is supposed to be all-powerful such that he does not need to use technology, God is also able to use technology, if he wants to. In other words, as an all-powerful being, God can use technology, if he wants, even though he doesn't need to.

[9] See Gaunilo's Reply on Behalf of the Fool (Anselm 1995, 27-34) against Anselm's ontological argument.

[10] See Anselm's Reply to Gaunilo (Anselm 1995, 35-46).

*definition*. That is, traditionally, God is understood as an all-powerful, all-knowing, and all-good being. On the other hand, dragons are supposed to be powerful to some extent, but they are not supposed to be all-powerful. Similarly, wizards are supposed to be wise to some extent, but they are not supposed to be all-knowing. In other words, God is supposed to be all-powerful, all-knowing, and all-good *by definition*. As Anselm (1995, 36) puts it), it is "that than which a greater cannot be thought."

With this understanding of the role that the concept of God should play in "playing God" arguments in hand, we are now in a position to see what an argumentation scheme for "playing God" arguments, along with its critical questions, looks like. In the next section, then, I offer such an argumentation scheme with its accompanying critical questions.

## 3. An Argumentation Scheme for "Playing God" Arguments

According to Walton, Reed, and Macagno (2008, 1), "Argumentation schemes are forms of argument (structures of inference) that represent structures of common types of arguments used in everyday discourse, as well as in special contexts like those of legal argumentation and scientific argumentation." As such, argumentation schemes are a useful tool for the analysis and evaluation of "playing God" arguments, since such arguments are commonly used in everyday discourse (Waytz and Young 2019). For instance, a 2018 Pew Research study shows that Americans often use "playing God" arguments when it comes to questions about biotechnology and genetic engineering. The results of this survey show that the main "reason for saying genetic engineering of mosquitoes to prevent the spread of some diseases by limiting their reproduction is taking technology too far" or that "genetic engineering to create more nutritious meat is taking technology too far" is that it amounts to "messing with nature and/or God's plan" (Funk and Hefferon 2018, 6).[11]

Accordingly, "playing God" arguments are fairly common in everyday discourse (Waytz and Young 2019). But how should one understand these arguments? And how should such arguments be analyzed and evaluated? Here are two examples of "playing God" arguments from the aforementioned 2018 Pew Research study:

> "Nature has selected species to become extinct over millions and millions of years. We have no right to bring animals back and play God" (quoted in Funk and Hefferon 2018, 9).

> "[While] changing a fish to glow might sound like something people would want to see it's not something beneficial to humankind. At this point it would just [be] playing God to entertain rather [than] help us" (quoted in Funk and Hefferon 2018, 10).

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[11] Could *not taking action* count as "playing God"? For example, if we have the technology to genetically modify mosquitoes such that they will not be able to infect humans with deadly diseases, but we choose not to use it, are we "playing God" in this case? Answering this question requires getting into deep meta-ethical waters having to do with the doing/allowing distinction and the action/omission distinction, which is beyond the scope of this paper. For a book-length treatment of these distinctions, see Clarke (2014). For present purposes, I hope it is sufficient to point out that, as we have seen in Section 1, "playing God" is commonly understood as a form of doing or acting rather than allowing or omitting. As Peters (2007, 173) puts it, "By 'playing God', [...] [w]e mean changing nature." Accordingly, allowing nature to take its course would not count as "playing God."

As mentioned above, one way to understand these "playing God" arguments is as a warning not to interfere with God's creation or nature. In both cases, the arguers are undoubtedly concerned about interfering with God's creation or nature. But I think that these arguments are meant to express additional moral concerns. So I would like to propose that there is more to "playing God" arguments than just a concern about interfering with God's creation or nature. In particular, I submit, "playing God" arguments invite us to think carefully about all the ways in which the use of new technologies, such as genetic engineering, could go seriously wrong, given the fact that we are not as powerful, wise, and good as God is supposed to be. For instance, in the first example above, the arguer is suggesting that bringing animals back would be a bad idea, so we should not do it. Similarly, in the second example above, the arguer is suggesting that using genetic engineering to make fish glow is not worth the risk, so it should not be done. Both arguers, then, seem to be concerned about how genetic engineering could go seriously wrong in ways that human beings, who are not as powerful, wise, and good as God is supposed to be, would fail to anticipate. As I have argued in Section 2, to "play God" is for humans to pretend they are as powerful, prescient, and morally perfect as God, and so bringing back extinct species or genetically modifying extant species by means of genetic engineering would not get out of control, have bad consequences that could not have been anticipated, and be misused or abused by humans.

Accordingly, here is an argumentation scheme for "playing God" arguments that I think captures the aforementioned moral concerns about using or applying new technologies:

*Major Premise*: We should not (morally speaking) "play God."
*Minor Premise*: Using new technology *T* amounts to "playing God."
*Conclusion*: We should not (morally speaking) use *T*.

Applied to genetic engineering, for example, a "playing God" argument against using genetic engineering to bring back extinct species or genetically modify extant species would run as follows:

*Major Premise*: We should not (morally speaking) "play God."
*Minor Premise*: Using genetic engineering to bring back extinct species or genetically modify extant species amounts to "playing God."
*Conclusion*: We should not (morally speaking) use genetic engineering to bring back extinct species or genetically modify extant species.

Before the conclusion is accepted or rejected, one should ask critical questions that are meant to "probe the weak points of an argument" (Walton et al. 2008, 6). That is, an argumentation scheme is typically accompanied by a set of critical questions that together assist "in carrying out an analysis and evaluation of the argument" (Walton et al. 2008, 11). As far as "playing God" arguments are concerned, the crucial question is whether using new technology, *T*, does indeed amount to "playing God." As I have argued in Section 2, to "play God" is for humans to pretend that they are as powerful as God, and so new technologies will not get out of control when they apply them; to pretend that they are as prescient as God, and so new technologies will not have unforeseen consequences when they apply them; and to pretend that they are as morally perfect

as God, and so new technologies will not be misused or abused when they use them. To determine whether using a new technology amounts to "playing God," then, one must determine whether it amounts to pretending that this new technology is manageable given humans' limitations.

Accordingly, I propose the following Critical Questions (CQ) to accompany the aforementioned argumentation scheme of "playing God" arguments. These Critical Questions are designed to help determine whether using a new technology counts as "playing God" when a "playing God" argument is made:

CQ1: Could $T$ get out of the control of (less than omnipotent) human beings?
CQ2: Could $T$ have unforeseen consequences for (less than omniscient) human beings?
CQ3: Could $T$ be misused or abused by (less than omnibenevolent) human beings?

These Critical Questions are conceptually related to the aforementioned scheme for "playing God" arguments in virtue of the concept of God invoked in such arguments. Unlike God, human beings could be overpowered, outsmarted, or overwhelmed by the power, sophistication, and potential for abuse inherent in new technologies.

Now, affirmative answers to these critical questions provide good reasons to think that using new technology $T$ does indeed amount to "playing God"; that is, if humans were to use or apply $T$, they would thereby be pretending that they could not lose control over $T$, be caught off guard by the unforeseen consequences of using $T$, or be tempted to misuse or abuse $T$. This, in turn, provides a good reason to think that humans should not use $T$ until they have a better understanding of all the ways in which using $T$ could go seriously wrong. On the other hand, negative answers to these critical questions provide good reasons to think that using new technology $T$ does not amount to "playing God"; that is, if humans were to use or apply $T$, they would not be pretending that they could not lose control over $T$, be caught off guard by the unforeseen consequences of using $T$, or be tempted to misuse or abuse $T$.

As I have construed them, "playing God" arguments are defeasible arguments. Defeasible reasoning is not deductive, which means that the premises of a good defeasible argument, if true, provide some evidential support for the conclusion, but they do not guarantee its truth. Accordingly, if the major and minor premises of a "playing God" argument are true, the conclusion of that argument would then be supported by the evidence cited in those premises, but the conclusion can always be defeated by additional evidence that is not cited in the premises. Now, given that defeasible arguments can be stronger or weaker, my argumentation scheme for "playing God" arguments, with its associated critical questions, provides a simple way for telling how strong a "playing God" argument is: the more critical questions are answered in the affirmative, the stronger the argument; the more critical questions are answered in the negative, the weaker the argument.

To illustrate using the example of genetic engineering again, one would ask the following critical questions in order to determine whether one should accept or reject the conclusion that humans should not use genetic engineering to bring back extinct species or genetically modify extant species:

CQ1: Could the genetic engineering of animals get out of the control of (less than omnipotent) human beings?

CQ2: Could the genetic engineering of animals have unforeseen consequences for (less than omniscient) human beings?

CQ3: Could the genetic engineering of animals be misused or abused by (less than omnibenevolent) human beings?

If the answer to all of these critical questions is "yes," then it means that using genetic engineering to bring back extinct species or genetically modify extant species does indeed amount to "playing God." Given that humans should not pretend to be all-powerful, all-knowing, and all-good as God is supposed to be, one could then conclude that humans should not use genetic engineering to bring back extinct species or genetically modify extant species until they have a better understanding of all the ways in which genetic engineering could go seriously wrong. In this case, one would have a strong "playing God" argument against using genetic engineering to bring back extinct species or genetically modify extant species.

On the other hand, if the answer to all of these critical questions is "no," then it means that using genetic engineering to bring back extinct species or genetically modify extant species does not amount to "playing God." In that case, the conclusion that humans should not use genetic engineering to bring back extinct species or genetically modify extant species would not be warranted.[12] In this case, one would have a weak "playing God" argument against using genetic engineering to bring back extinct species or genetically modify extant species.

Any other combination of "yes" and "no" answers to the critical questions would make the "playing God" argument stronger or weaker: the more critical questions are answered in the affirmative, the stronger the argument; the more critical questions are answered in the negative, the weaker the argument. One's answers to the critical questions will also tell one what needs to be addressed before the new technology in question can be used or applied. For example, if the answer to CQ1 and CQ2 is "no," but the answer to CQ3 is "yes," then one would have a rather weak "playing God" argument against using genetic engineering to bring back extinct species or genetically modify extant species. Nevertheless, one would know that, as far as genetic engineering technology is concerned, the problem is not that it would get out of control or have unintended, negative consequences. Rather, the problem is that it could be used for nefarious purposes. Knowing that would help one direct one's efforts toward crafting policies and/or legislation designed to prevent abuse instead of more safety engineering.

An anonymous reviewer raises an important question: Does scientific experimentation count as "playing God"? For example, if scientists use technology to genetically modify animals such that they glow (e.g., using Green Fluorescent Protein or GFP) for the purpose of scientific

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[12] In that respect, it should be clear that I am *not* taking a position on the morality of genetic engineering. Whether genetic engineering is morally permissible or not will depend on one's answers to the critical questions, CQ1-CQ3. Moreover, "playing God" arguments are only one kind of argument being made in the debate concerning the morality of genetic engineering. There are plenty of other arguments having to do with justice, fairness, equality, human well-being, human rights, and many other issues pertinent to the debate. See, e.g., Berry (2007) for more on such arguments. For this reason, "playing God" arguments are defeasible, insofar as their conclusions can be defeated by additional evidence.

experimentation, are the scientists "playing God" in this case? I think that this case is covered by my argumentation scheme for "playing God" arguments and its accompanying critical questions. That is, scientists who are considering using GFP or other so-called "glowing genes" (Zimmer 2005) in their experiments with animals should ask themselves the following critical questions:

> CQ1: Could using glowing genes in scientific experimentation get out of the control of (less than omnipotent) human beings?
> CQ2: Could using glowing genes in scientific experimentation have unforeseen consequences for (less than omniscient) human beings?
> CQ3: Could using glowing genes in scientific experimentation be misused or abused by (less than omnibenevolent) human beings?

If they answer all of these critical questions in the affirmative, then the scientists would have good reasons to think that using glowing genes in scientific experimentation does indeed amount to "playing God." On the other hand, if they answer all of these critical questions in the negative, then the scientists would have good reasons to think that using glowing genes in scientific experimentation does not amount to "playing God." In general, the more critical questions they answer in the affirmative, the stronger the "playing God" argument against using GFP in research on animals would be. The more critical questions they answer in the negative, the weaker the "playing God" argument against using GFP in research on animals would be. If the scientists answer all of these critical questions in the negative, then they would have no good reason to think that using glowing genes in scientific experimentation amounts to "playing God." This is how my argumentation scheme for "playing God" arguments, with its associated critical questions, provides a simple way for telling how strong a "playing God" argument is.

As Walton et al. (2008, 20) point out, one can "add the content of each of the critical questions as a separate premise," if one prefers. As far as the aforementioned argumentation scheme for "playing God" arguments is concerned, doing so results in the following extended argumentation scheme:

> *Major Premise*: We should not (morally speaking) "play God."
> *Conditional Premise*: If $T$ could get out of the control of humans, have unforeseen consequences for humans, and be misused or abused by humans, then the use of $T$ amounts to "playing God."
> *Control Premise*: $T$ could get out of the control of humans.
> *Unforeseen Consequences Premise*: $T$ could have unforeseen consequences for humans.
> *Abuse Premise*: $T$ could be misused or abused by humans.
> *Conclusion*: We should not (morally speaking) use $T$.

If I am right, then "playing God" arguments should be construed, not as a warning to leave God's creation or nature alone, but rather as an invitation to think carefully about all the ways in which the use or application of new technologies could go seriously wrong. An advantage of my interpretation of "playing God" arguments as invitations to think carefully about all the ways in which the use or application of new technologies could go seriously wrong, rather than warnings to leave God's creation or nature alone, is that such arguments do not commit one to the existence of God or to any views about the creation of the universe. For humans' limitations in

power, knowledge, and goodness in comparison to a being like God hold whether or not God exists and whether or not the universe was created by an "omniscient, omnipotent, omnibenevolent, eternal creator" (Oppy 2006, 16). For example, arguing that "HGE [i.e., Human Genetic Engineering] is an arrogant interference with the nature that God has created" (Evans 2002, 125), and hence morally wrong, seems to commit the arguer to the existence of God as the creator of nature. Consequently, the conclusion of this "playing God" argument, i.e., that human genetic engineering is morally impermissible, can be rejected merely on the grounds that there is no compelling evidence for the existence of God. For example, "if, as the secular world believes, there *is* no God, how could there be any danger of human beings illegitimately abrogating to themselves His function?" (Graham 2002, 145).

On my interpretation of "playing God" arguments, however, there is no need to postulate the existence of God as the creator of the universe. Human limitations hold regardless of the existence of God. As beings that are limited in knowledge, power, and goodness, humans should always consider carefully all the ways in which the use or application of new technologies could go seriously wrong before applying those new technologies. For this reason, even non-believers ("the secular world") can make "playing God" arguments, on my interpretation of "playing God" arguments, for my interpretation allows one to remain non-committal on the question concerning God's existence. In other words, theists, atheists, and agnostics of various stripes can be morally concerned about all the ways in which the use or application of new technologies could go seriously wrong at the hands of beings that are limited in power, knowledge, and goodness in comparison to a "maximally great (or perfect)" being (Hoffman and Rosenkrantz 2017). Understood as invitations to think carefully about all the ways in which the use of new technologies could go seriously wrong, rather than warnings to leave God's creation or nature alone, "playing God" arguments cannot be dismissed simply on the grounds that there is no compelling evidence for the existence of God.

## 4. How "Playing God" Arguments Should Be Evaluated

In addition to being neutral on questions about God's existence and creation, another advantage of my interpretation of "playing God" arguments as invitations to think carefully about all the ways in which the use or application of new technologies could go seriously wrong, rather than warnings to leave God's creation or nature alone, is that such arguments can be made even when the new technology in question is not designed to intervene in nature directly. That is, "playing God" arguments can be advanced in domains other than bioethics, where the technology in question is designed to intervene in human nature specifically. To illustrate this point, and how the aforementioned argumentation scheme and accompanying critical questions should be used to analyze and evaluate "playing God" arguments, consider the case of Artificial Intelligence (AI).[13]

Unlike cloning, genetic engineering, and other technologies in the domain of medical science and technology, AI is not designed to intervene in nature directly, so it falls outside of

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[13] For a discussion of "playing God" arguments in the context of environmental ethics and climate engineering, see Wong (2015). On synthetic biology and "playing God" arguments, see Link (2013).

the domain of biomedical ethics.[14] Nonetheless, I think that advances in AI technology raise many of the moral concerns that can be captured by the aforementioned "playing God" argumentation scheme and its accompanying critical questions. For example:

> *AI and the control problem*: The more powerful AI is, as a general rule, the less we are going to be able to control it (Boddington 2017, 29).
> *Problems of prediction*: The very fact that AI is rapidly developing technology means that it's hard to predict what will occur even in the near future (Boddington 2017, 28).
> *The manipulation of data*: Some issues, especially in certain areas of AI, concern the use and manipulation of masses of data (Boddington 2017, 29).

As far as AI technology is concerned, the control problem is an instance of the general concern about losing control over technology, i.e., the concern addressed by CQ1. Similarly, the prediction problem is an instance of the general concern about any unforeseen consequences of new technologies, i.e., the concern addressed by CQ2. Finally, the manipulation problem is an instance of the general concern about any misuse or abuse of new technologies, i.e., the concern addressed by CQ3.[15]

For example, the development of Lethal Autonomous Weapons (LAWs) raises concerns about the power, sophistication, and potential for abuse of this technology. For one thing, since they will be autonomous, LAWs will have "the power and discretion to select targets and take lives without human involvement," as the UN Secretary-General António Guterres put it (UN News 2019). In that sense, there is a danger of LAWs "going rogue." This concern is distinct from the concern that LAWs could "fall into the wrong hands," i.e., be hacked and then used for nefarious purposes.

Accordingly, those who are concerned about LAWs getting out of control, having unforeseen consequences, or being misused or abused by humans can advance the following "playing God" argument using the aforementioned scheme:

> *Major Premise*: We should not (morally speaking) "play God."
> *Minor Premise*: Using LAWs amounts to "playing God."
> *Conclusion*: We should not (morally speaking) use LAWs.

Before the conclusion is accepted or rejected, of course, one should analyze and evaluate the argument by asking the aforementioned critical questions.

CQ1: Could LAWs get out of the control of (less than omnipotent) human beings?

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[14] Of course, AI technology can (and indeed, does) have medical applications as well. For example, AI can assist doctors in medical diagnosis (see, e.g., Buch et al. 2018). The point here is simply that AI has applications beyond the medical domain (e.g., autonomous vehicles, lethal autonomous weapons, etc.), where gene-editing technologies have obvious and direct applications.

[15] Not all manipulation of data is immoral, of course. Among other things, AI researchers are concerned about the manipulation of data (or data management) as well as the manipulation of people by means of data handled by AI (see, e.g., Barnhizer and Barnhizer 2019). As Kate Crawford once said, AI's potential for abuse is "a fascist's dream" (Solon 2017).

CQ2: Could LAWs have unforeseen consequences for (less than omniscient) human beings?
CQ3: Could LAWs be misused or abused by (less than omnibenevolent) human beings?

If the answer to all of these critical questions is "yes," then it means that using LAWs does indeed amount to "playing God." Given that humans should not pretend to be all-powerful, all-knowing, and all-good as God is supposed to be, one could then conclude that humans should not use LAWs. On the other hand, if the answer to all of these critical questions is "no," then it means that using LAWs does not amount to "playing God." In that case, the conclusion that humans should not use LAWs would not be warranted.

Any other combination of "yes" and "no" answers to the critical questions would make the "playing God" argument against LAWs stronger or weaker: the more critical questions are answered in the affirmative, the stronger the argument; the more critical questions are answered in the negative, the weaker the argument. One's answers to the critical questions would also tell one what needs to be addressed before LAWs could be used. For example, if the answer to CQ1 and CQ2 is "yes," but the answer to CQ3 is "no," then one would have a pretty strong "playing God" argument against using LAWs. In addition, one would know that, as far as LAW technology is concerned, the problem is not that it would be misused or abused by humans. Rather, the problem that humans would lose control over the technology. Knowing that would help one direct one's efforts toward more safety engineering instead of crafting policies and/or legislation designed to prevent abuse.

Against my proposal, it might be argued that there is no need for an argumentation scheme for "playing God" arguments in particular. Instead, it might be argued, the moral concerns expressed by "playing God" arguments can be captured adequately by existing argumentation schemes, especially the argumentation scheme for arguments from negative consequences.

Walton et al. (2008, 101) provide the following argumentation scheme for arguments from consequences, particularly *negative* consequences:

If I (an agent) bring about (don't bring about) *A*, then *B* will occur.
*B* is a bad outcome (from the point of view of my goals).[16]
Therefore, I should not (practically speaking) bring about *A*.[17]

There are crucial differences between Walton et al.'s argumentation scheme for arguments from negative consequences and my argumentation scheme for "playing God" arguments. First, according to Walton et al. (2008, 100), "Argument from consequences may be considered as a generic category of causal inference." Accordingly, the major premise of Walton et al.'s

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[16] In Walton et al.'s argumentation scheme for arguments from negative consequences, it is implicitly assumed, but not explicitly stated, that one should not bring about outcomes that are bad from the point of view of one's goals.
[17] I am following Walton et al. (2008) in using "practical reasoning" to talk about reasoning with respect to actions, not statements. According to Walton et al. (2008, 94-95), "A practical inference has two characteristic types of premises. One states that the rational agent has a particular goal. The other states some kind of action through which the agent could carry out the goal." Note the use of "practically speaking" in their argument scheme for arguments from consequences quoted above.

argumentation scheme for arguments from negative consequences is about a causal relation between two things, *A* and *B*. In contrast, my argumentation scheme for "playing God" arguments does not fall under the category of causal inference. Accordingly, there is no premise about a causal relation between two things, *A* and *B*, in my argumentation scheme for "playing God" arguments. As I have argued in Section 2, what is doing the theoretical work in my interpretation of "playing God" arguments is the divine attributes that God is supposed to have by definition, namely, omnipotence, omniscience, and omnibenevolence. Instead of causal relations, then, my argumentation scheme for "playing God" arguments is about the conceptual relation between the concept of an omnipotent, omniscient, and omnibenevolent being, AKA God, in comparison with human beings who are not all-powerful, all-knowing, or all-good.

Second, according to Walton et al. (2008, 101), arguments from consequences are also instances of practical reasoning, which "is often a backward process from the outcome of a consequence to its premises." Accordingly, the conclusion of Walton et al.'s argumentation scheme for arguments from negative consequences is about what should not be brought about, *practically speaking*. In contrast, my argumentation scheme for "playing God" arguments is not an instance of practical reasoning. Accordingly, the conclusion of my argumentation scheme for "playing God" arguments is about what should be done *morally speaking*, not practically speaking. The moral and the practical are distinct. In other words, there may be practical reasons for doing something that should still not be done *morally speaking*. For example, if I am one of two survivors of an airplane crash who are stranded on a desert island with no food, I may have a practical reason to kill and eat the other survivor, given that my goal is to survive, even though I should not do it, morally speaking.[18]

Given these crucial differences between my argumentation scheme for "playing God" arguments and Walton et al.'s argumentation scheme for arguments from negative consequences, I think that there is a need for an argumentation scheme for "playing God" arguments that is different from the scheme for arguments from negative consequences.[19] As I hope to have shown above, my argumentation scheme for "playing God" arguments is sufficiently general to be able to cover "playing God" arguments that can be made in various domains (e.g., medical science and technology, artificial intelligence, etc.) where new technologies emerge. In other words, my argumentation scheme for "playing God" arguments and its accompanying critical questions are meant to be tools for the analysis and evaluation of "playing God" arguments wherever they might occur.

## 5. Conclusion

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[18] The moral and the practical are not always so easily distinguishable. This is especially the case if one thinks of morality as action-guiding. In moral philosophy, the idea that morality is supposed to be action-guiding is often encapsulated in the principle known as "ought implies can." The idea is that one ought to do something only if one can do it. Conversely, if one cannot do something, then one has no moral obligation to do it. For example, if I ought to keep my promise to meet a friend for dinner, then I can keep my promise to meet a friend for dinner. But if I cannot meet a friend for dinner, then I have no moral obligation to do so. Recently, this principle has been challenged by empirical evidence suggesting that people generally do assign moral obligations to agents who are incapable of fulfilling those obligations. See, e.g., Kissinger-Knox et al. (2018) and Buckwalter (2019) for recent discussions.

[19] For the same reasons, Walton et al.'s argumentation schemes for fear and danger appeals (Walton et al. 2008, 102-104) are different from my argumentation scheme for "playing God" arguments, and thus fail to capture the moral concerns expressed by "playing God" arguments.

When the phrase "playing God" is used in debates concerning the use of new technologies, such as cloning or genetic engineering, it is usually interpreted as a warning not to interfere with God's creation or nature. I think that this interpretation of "playing God" arguments as a call to non-interference with nature is too narrow. In this paper, I have proposed an alternative interpretation of "playing God" arguments. Taking an argumentation theory approach, I have offered the following argumentation scheme and its accompanying critical questions that capture the moral concerns expressed by "playing God" arguments.

*"Playing God" Argumentation Scheme*

*Major Premise*: We should not (morally speaking) "play God."
*Minor Premise*: Using new technology *T* amounts to "playing God."
*Conclusion*: We should not (morally speaking) use *T*.

*Critical Questions*

CQ1: Could *T* get out of the control of (less than omnipotent) human beings?
CQ2: Could *T* have unforeseen consequences for (less than omniscient) human beings?
CQ3: Could *T* be misused or abused by (less than omnibenevolent) human beings?

I have argued that this interpretation of "playing God" arguments as invitations to think carefully about all the ways in which using new technologies could go seriously wrong, rather than warnings to leave God's creation or nature alone, has three advantages. First, it provides a straightforward way to judge the strength of "playing God" arguments. Second, it allows one to make "playing God" arguments without thereby being committed to the existence of God or to any views about the creation of the universe. Third, it allows one to advance "playing God" arguments even when the new technology in question is not designed to intervene in nature directly. In that respect, my argumentation scheme for "playing God" arguments and its accompanying critical questions are meant to be tools for the analysis and evaluation of "playing God" arguments wherever they might occur.

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