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In Defense of Relative Realism: A Reply to Park

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## Abstract

In this paper, I reply to Seungbae Park's (2020) critique of the view I defend in Chapter 6 of *The Relativity of Theory: Key Positions and Arguments in the Contemporary Scientific Realism/Antirealism Debate* (Cham: Springer, 2020), namely, Relative Realism. Relative Realism is the view that, of a set of competing scientific theories, the more predictively successful theory is comparatively true. Comparative truth is a relation between competing theories. So, to say that  $T_1$  is comparatively true is to say that  $T_1$  is closer to the truth than its competitors,  $T_2, T_3, \dots, T_n$ . Park offers two arguments against Relative Realism. The first is an argument by analogy to NBA players, which is supposed to show that, contrary to what the relative realist argues, absolute judgments about the (approximate) truth and (predictive) success of competing theories are rationally justified. The second is what Park calls "The Argument from Double Spaces," which is supposed to show that, contrary to what the relative realist argues, relative judgments about the (comparative) truth of competing theories are not rationally justified. I argue that Park's arguments fail to do what he wants them to do.

## 1. Introduction

I am very grateful to Seungbae Park for writing a critique of the view I defend in Chapter 6 of *The Relativity of Theory: Key Positions and Arguments in the Contemporary Scientific Realism/Antirealism Debate* (Cham: Springer, 2020), namely, Relative Realism. Relative Realism is the view that, of a set of competing scientific theories, the more predictively successful theory is comparatively true. Comparative truth is a relation between competing theories. So, to say that  $T_1$  is comparatively true is to say that  $T_1$  is closer to the truth than its competitors,  $T_2, T_3, \dots, T_n$ .

In what follows, I reply to Park's criticisms in the order in which they appear in his article. First, I respond to his argument by analogy to NBA players, which is supposed to show that, contrary to what the relative realist argues, absolute judgments about the (approximate) truth and (predictive) success of competing theories are rationally justified. Second, I respond to what Park calls "The Argument from Double Spaces," which is supposed to show that, contrary to what the relative realist argues, relative judgments about the (comparative) truth of competing theories are not rationally justified. I argue that Park's arguments fail to do what he wants them to do.

## 2. Park's Argument from Analogy

After stating what Relative Realism is (Park 2020, 59), and distinguishing between empirical success and empirical adequacy (Park 2020, 60), Park offers an analogy between judgments about the (approximate) truth of competing scientific theories and judgments about the height of NBA players. As Park (2020, 61) puts it:

[S]uppose there are two NBA players:  $p_1$  and  $p_2$ . We make the relative judgment that  $p_1$  is taller than  $p_2$ . Still, *we can make an absolute judgment that both are tall*. Similarly, we make the relative judgment that T is closer to the truth than its alternative. Still, *we can make the absolute judgment that they are approximately true* (emphasis added).

Of course, we can make all sorts of judgments: absolute and relative. The question is whether those judgments are rationally justified. According to the relative realist, absolute judgments, such as “T is approximately true” are not rationally justified, whereas relative judgments, such as “ $T_1$  is comparatively true relative to competing theories  $T_2$  and  $T_3$ ” are rationally justified, since theory evaluation is comparative (Mizrahi 2020, 120-123). If Park’s analogy were apt and strong, then it would show that absolute judgments about the (approximate) truth of competing theories are rationally justified, contrary to what the relative realist argues.

Unfortunately, Park’s analogy is neither apt nor strong, or so I would argue. First, the analogy is inapt because the term “tall” is vague. The term “tall” is vague in the sense that there are borderline cases to which it is not clear whether the term correctly applies or not. That is, what is the measure of *tall* exactly? At what height is a person considered *tall*? As Sorensen (2018) puts it in his *Stanford Encyclopedia of Philosophy* entry on vagueness:

Vagueness is standardly defined as the possession of borderline cases. For example, “tall” is vague because a man who is 1.8 meters in height is neither clearly tall nor clearly non-tall. No amount of conceptual analysis or empirical investigation can settle whether a 1.8 meter man is tall. Borderline cases are inquiry resistant.

Presumably, the term “truth” (and so, “approximate truth” as well) is not vague in this sense (or, at least, scientific realists would not want to say that “truth” is vague in this sense).

Second, the analogy is not strong enough to support Park’s contention that absolute judgments about the (approximate) truth of competing theories are rationally justified. To see why, consider Park’s absolute judgment that the two NBA players are tall. Is it a rationally justified judgment? Well, it depends. Relative to ordinary people (i.e., non-NBA players), the two NBA players may be considered tall. Relative to other NBA players, however, they may be considered quite average in height (i.e., not tall). For example, LeBron James is 2.06 meters in height. Relative to other men who do not play professional basketball, he may be considered tall because the average height of adult males is 1.73 meters. Relative to other NBA players, however, LeBron James is not so tall because the average height of a male NBA player is 2.01 meters. This shows that in order to determine whether the judgment “Player 1 and Player 2 are tall” is true, we need to know the context. Are we talking *tall* relative to NBA players? Or are we talking *tall* relative to non-NBA players as well? For a man, LeBron James may be considered tall. For an NBA player, however, LeBron James is considered a player of average height. In other words, it turns out that the rationally justified judgment we can make may be the relative one, namely, “Player 1

and Player 2 are tall relative to adult males who are not NBA players,” rather than the absolute one, namely, “Player 1 and Player 2 are tall.”

Park (2020, 62) admits that “we usually make the relative judgment that T is better confirmed than its competitor.” But he goes on to argue that it “does not follow [...] that we cannot make the absolute judgment that both are highly confirmed.” The relative realist’s claim that absolute judgments about the (approximate) truth of competing theories are not rationally justified is not supposed to follow from the fact that relative judgments about the (comparative) truth of competing theories are rationally justified. Rather, the claim that absolute judgments about the (approximate) truth of competing theories are not rationally justified follows from the nature of theory evaluation itself. That is, if theory evaluation is comparative, then it follows that comparative, but not absolute, judgments about competing theories are rationally justified by such evaluation.

As I show in Chapter 6 of *The Relativity of Theory* (2020), both scientific realists and antirealists would agree that theory evaluation is comparative. For example, according to Wray (2018, 4), “evaluations of competing theories are comparative in nature.” Likewise, according to Psillos (1999, 76), “Scientists use accepted background theories in order to form their expectations, to choose the relevant methods for theory-testing, to devise experimental set-ups, to calibrate instruments, to assess experimental evidence, *to choose among competing theories*, to assess newly suggested hypotheses, etc.” (emphasis added). A comparative evaluation of competing theories, which is the way competing theories are evaluated in science (as scientific realists and antirealists seem to agree), is the sort of evaluation that warrants relative or comparative judgements, such as,  $T_1$  is closer to the truth than competitors  $T_2$ ,  $T_3$ , ...,  $T_n$ , rather than absolute judgements, such as,  $T_1$  is (approximately) true, about competing theories.

### 3. Park’s Argument from Double Spaces

What Park (2020, 63) calls “the argument from double spaces” is supposed to be “similar” to the argument from a bad lot. As I explain in Chapter 4 of *The Relativity of Theory* (2020), the argument from a bad lot is an argument against Inference to the Best Explanation (IBE). As van Fraassen (1980, 143) puts it:

[IBE] is a rule that selects the best among the historically given hypotheses. We can watch no contest of the theories we have so painfully struggled to formulate, with those no one has proposed. So *our selection may well be the best of a bad lot* (emphasis added).

In other words, when scientists select the best explanation (or hypothesis) from several competing explanations (or hypotheses), they may be selecting the best from a lot of bad explanations (or hypotheses). If the selected explanation is indeed the best of a bad lot, as van Fraassen argues, then IBE does not support the belief that the selected explanation is (likely) true.

Now, as I understand it, Park wants to run a parallel argument, which he calls “the argument from double spaces,” against Relative Realism. Park’s argument from double spaces purports to show that the relative realist’s claim that the relative success of competing theories warrants relative judgments about their comparative truth is false. As Park (2020, 66) puts it in an imaginary conversation between a scientific realist and a relative realist, “Although T is comparatively successful, we cannot conclude it is comparatively true because it may be a selection from the F-space,” where the so-called “F-space” is “inhabited by the unconceived scientific theories that are commonly fated to lead us to *false* beliefs about themselves” (Park 2020, 63; emphasis in original).

Unless all the competing theories in the so-called “F-space” are indistinguishable from one another, however, some of them would be more successful than others. Consequently, a subset of competing theories from the so-called “F-space” would be more successful than others. And if scientists can determine which of those competing theories is more successful than others by experimentation and observation, then they are rationally justified in believing that the more successful theory of the subset is the comparatively true one.

In fact, I illustrate this point about Relative Realism in Chapter 6 of *The Relativity of Theory* (2020). Suppose the following logical space of competing theories in order of closeness to the truth:

$T_1$      $T_2$      $T_3$      $T_4$      $T_5$      $T_6$      $T_7$      $T_8$     TRUTH

Now, consider the following two sets of competing theories:

Lot 1  $\{T_1, T_2, T_3, T_4\}$   
Lot 2  $\{T_5, T_6, T_7, T_8\}$

Precisely because we do not know whether the theories we are testing are theories from Lot 1 (which are far from the truth) or theories from Lot 2 (which are close to the truth), we are not entitled to conclude that the more successful theory of the lot is (approximately) true. We are entitled to conclude, however, that the more successful theory of the lot is (comparatively) true, i.e., closer to the truth relative to its competitors in the set. This is because, even if we are testing theories from Lot 1, which are farther away from the truth than the theories of Lot 2, those theories are still closer to (or farther away from) the truth relative to each other (assuming they are distinct, not identical, competing theories).

This point stands if we take Lot 1 to be Park’s so-called “F-space,” i.e., the space of false theories, and Lot 2 to be Park’s so-called “T-space,” i.e., the space of true theories. Even if all the competing theories in the so-called “F-space” (or Lot 1) are false, some are farther away from the truth than others because they are distinct theories (otherwise, they would be indistinguishable from one another). Conversely, then, some of the competing theories in the so-called “F-space” (or Lot 1) are closer to the truth than others, i.e., they are comparatively true relative to competitors in the set. So, I fail to see how the possibility that our scientific theories are competing theories from the so-called “F-space” (or Lot 1) is

supposed to undermine Relative Realism. The relative realist is happy to grant that it is possible.

In other words, our scientific theories may be competing theories from the so-called “F-space” (or Lot 1), as Park argues, but that is precisely why absolute judgments about the (approximate) truth of competing theories are not rationally justified. For we cannot know whether the competing theories we are testing are from the so-called “F-space” (or Lot 1) or from the so-called “T-space” (or Lot 2). This point does not undermine Relative Realism. If anything, this point is part of the motivation for Relative Realism. For while “to take it that the best of set X will be *more likely to be true* than not, requires a prior belief that the truth is already more likely to be found in X, than not,” as Van Fraassen (1989, 143; emphasis added) argues, and Park (2020, 64-65) seems to agree, to take it that the best of a set X will be better than other members of set X requires no such prior belief. After all, given that the relative realist already takes on board the argument from a bad lot (Mizrahi 2020, 120-123), and the antirealist’s point about the logical space of possible theories (Mizrahi 2020, 124-130), Park’s argument from double spaces should pose no problems for the relative realist, either, if the argument from a bad lot and the argument from double spaces are indeed as similar as Park (2020, 68) claims they are.

#### 4. Conclusion

In his concluding remarks, Park (2020, 68) writes, “Relative realists’ position is predicated on the argument from a bad lot as well as on their fundamental belief that we cannot make the absolute judgment that T is successful.” Park is right that Relative Realism is predicated on the argument from a bad lot, if by “predicated” he means “motivated.” However, the argument from a bad lot is *not* one of the key arguments for Relative Realism. Those are the argument from the comparative evaluation of theories (Mizrahi 2020, 120-123) and the argument from the relative success of theories (Mizrahi 2020, 124-130). Both of which are not discussed in Park (2020), unfortunately.

Likewise, the claim that absolute judgments about the (approximate) truth and (predictive) success of competing theories are not rationally justified is *not* a “fundamental belief” of the relative realist, as Park (2020, 68) contends, if by “fundamental” he means to suggest that it is an unargued for assumption. Rather, it is the conclusion of the aforementioned arguments, namely, the argument from the comparative evaluation of theories (Mizrahi 2020, 120-123) and the argument from the relative success of theories (Mizrahi 2020, 124-130). According to the first argument, the comparative nature of theory evaluation entails that we are justified in believing comparative judgements (that is,  $T_1$  is closer to the truth than competitors  $T_2, T_3, \dots, T_n$ ), rather than absolute judgements (that is,  $T_1$  is likely true), about competing theories (Mizrahi 2020, 120-123). According to the second argument, the relative nature of predictive success entails that we are justified in believing comparative judgements (that is,  $T_1$  is more predictively successful than its competitors  $T_2, T_3, \dots, T_n$ ), rather than absolute judgements (that is,  $T_1$  is predictively successful), about competing theories (Mizrahi 2020, 124-130). I will leave it to readers of the book to decide how convincing those arguments are.

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