Why Park's Argument from Double Spaces is Not a Problem for Relative Realism

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Abstract

In this paper, I reply to Seungbae Park's (2021) reply to my (Mizrahi 2021) reply to his (Park 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 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, …, T_n. In his latest reply, Park (2021) clarifies his notions of "T-space" and "F-space," which he now labels "T-space" and "O-space," and further develops what he 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 revised version of the "Argument from Double Spaces" still fails as an argument against Relative Realism.

1. Park's Argument from Double Spaces

I am grateful to Seungbae Park for continuing the dialogue on Relative Realism and his critique of this view, which I defend in Chapter 6 of *The Relativity of Theory: Key Positions and Arguments in the Contemporary Scientific Realism/Antirealism Debate* (Cham: Springer, 2020). Relative Realism is the view that, of a set of competing scientific theories, the more successful theory is comparatively true. Unlike (approximate) truth, which is a semantic property of theories, 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, …, T_n.

Against Relative Realism, Seungbae Park (2020) advances what he calls the "Argument from Double Spaces." 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).

In response, I (Mizrahi 2021) argue that, unless all the competing theories in the so-called "F-space" are indistinguishable from one another, some of them would be more successful than others. As a result, in a subset of competing theories selected from the so-called "F-space," some competing theories would be more successful than other theories in the set. And if the competing theories in that set can be ranked comparatively, then we are rationally justified in believing that the more successful theory of the subset is the comparatively true

one, even if the subset of competing theories is a subset of the so-called "F-space" of theories.

Park (2021) replies to my (Mizrahi 2021) reply by clarifying his notions of the so-called "F-space" and "T-space." He says that his "old definitions [of the so-called "T-space" and "F-space"] fail to fully capture what [he] had in mind," and he replaces them with new definitions (Park 2021, 4). He now labels these spaces "O-space" and "T-space" and he defines them as follows:

> The T-space is [...] the space of unconceived theories whose appearances agree with their realities, and the O-space is rather the space of unconceived theories whose appearances may agree or disagree with their realities (Park 2021, 5).

In other words, in the so-called "T-space" there are theories that appear to be (approximately) true and are in fact (approximately) true, whereas in the so-called "O-space" there are theories that appear to be (approximately) true but that may not in fact be (approximately) true.

2. Why Park's Argument from Double Spaces Fails as an Argument against Relative Realism

What does that have to do with Relative Realism? Well, according to Park (2021, 4), (approximate) truth can be replaced with any other semantic property of theories, including comparative truth. That is, one could argue that in the so-called "O-space" there are competing theories that appear to be comparatively true but that may not in fact be comparatively true. Consequently, a set of competing theories that are from the so-called "O-space" would be a set of competing theories that appear to be comparatively true but that may not in fact be comparatively true. In that case, Park argues, the belief that the best theory of that set is comparatively true, i.e., closer to the truth relative to its competitors in the set, would not be rationally justified. As Park (2021, 5) puts it:

> Mizrahi (2020) infers the comparative truth of our best theories from his observation that they are more successful than their rivals. They may appear to be comparatively true, given that they are more successful than their rivals. But are they really comparatively true? In my view, *to take it that they are comparatively true on the basis of the observation that they are more successful than their rivals requires the prior belief that it is more likely that they were pulled out from the T-space than from the O-space.* This view is also similar to van Fraassen's view above, which motivated Mizrahi to develop relative realism (emphasis added).

This is Park's revised version of his Argument from Double Spaces, as I understand it. Nevertheless, I still think that Park's revised version of his Argument from Double Spaces, with its new definitions of the so-called "T-space" and "O-space," fails as an argument against Relative Realism. And my reasons for thinking so are very similar to the reasons articulated in Mizrahi (2021).

First, Park (2021, 4) claims that "semantic properties include truth and comparative truth," which is why his Argument from Double Spaces is supposed to pose a problem for both scientific realists and relative realists. However, strictly speaking, comparative truth is *not* a semantic property of theories. As I argue at great length in the book, unlike (approximate) truth, which is a semantic property of propositions (or theoretical claims), comparative truth is a comparative relation between competing theories (Mizrahi 2020, 110-115). So, even if Park's Argument from Double Spaces does pose a problem for scientific realism, given its reliance on the notion of (approximate) truth, it still does not pose a problem for Relative Realism, given that comparative truth is unlike (approximate) truth insofar as it is not a semantic property of theoretical claims.

Second, even if the so-called "O-space" contains theories that appear to be (approximately) true but that may not in fact be (approximately) true, some of the competing theories in the so-called "O-space" are more (approximately) true than others, and thus some of the competing theories in the so-called "O-space" are less (approximately) true than others. Indeed, according to Park (2021, 4) himself, "some inhabitants of the T-space are false, and [...] some inhabitants of the F-space [now labeled "O-space"] are true." Since almost no scientific realist would claim that even our best scientific theories are completely true (Mizrahi 2020, 22-23), I take it that Park is simply leaving out "approximately" for convenience, but that he is really talking about approximate truth. Accordingly, if "some inhabitants of the O-space are true, while other inhabitants are false" (Park 2021, 3), this means that some competing theories in the so-called "O-space" are more approximately true than their competitors and some competing theories in the so-called "O-space" are less approximately true than their competitors. Likewise, some competing theories in the so-called "O-space" are closer to the truth than their competitors and some competing theories in the so-called "O-space" are farther from the truth than their competitors.

Now, if some theories in a subset of competing theories taken from the so-called "O-space" are comparatively true, i.e., closer to the truth than their competitors in the set, and some theories in in a subset of competing theories taken from the so-called "O-space" are comparatively false, i.e., farther away from the truth than their competitors in the set, then whether a competing theory is from the so-called "O-space" or not makes no difference at all. As long as some theories from the so-called "O-space" are closer to the truth than their competitors in a set of competing theories, as Park (2021, 3) himself seems to admit, and scientists can rank these competing theories comparatively from best to worst on the basis of comparative theory evaluation, then relative judgments, such as "T_1 is comparatively true relative to competing theories T_2 and T_3" are rationally justified, just as the relative realist argues (Mizrahi 2020, 120-123).

To illustrate, suppose that the following competing theories were selected from Park's so-called "T-space" and "O-space":

T-space $\{T_1, T_2, T_3, T_4\}$

O-space $\{T_5, T_6, T_7, T_8\}$

That is, competing theories $\{T_1, T_2, T_3, T_4\}$ are theories that appear to be (approximately) true and are in fact (approximately) true, whereas competing theories $\{T_5, T_6, T_7, T_8\}$ are theories that appear to be (approximately) true but that may not in fact be (approximately) true. Still, some theories in the so-called "T-space" are more (approximately) true than others, and some theories in the so-called "O-space" are more (approximately) true than others, since "some inhabitants of the O-space are true, while other inhabitants are false" (Park 2021, 3). Therefore, some competing theories in the set taken from the so-called "T-space" are closer to the truth than their competitors, and some competing theories in the set taken from the so-called "O-space" are closer to the truth than their competitors. This means that some competing theories in the set taken from the so-called "T-space" are comparatively true relative to their competitors, and some competing theories in the set taken from the so-called "O-space" are comparatively true relative to their competitors. Accordingly, it makes no difference at all whether a set of competing theories is taken from the so-called "T-space" or "O-space." As long as some theories in the so-called "O-space" are closer to the truth than others, as Park (2021, 3) himself seems to admit, and scientists can rank competing theories comparatively, relative judgments, such as "T_1 is comparatively true relative to competing theories T_2 and T_3" are rationally justified, just as the relative realist argues (Mizrahi 2020, 120-123).

It is important to note that, contrary to what Park (2021, 5) claims, there is no inference to "the comparative truth of our best theories from [the] observation that they are more successful than their rivals," as far as the relative realist is concerned. That is not how any argument for Relative Realism proceeds. Instead, the best theory of a set of competing theories is judged to be the comparatively true one relative to its rivals in the set on the basis of its performance in comparative theory testing. That is, of a set of competing theories, the theory that makes more successful predictions than its rivals, explains more of the target phenomena than its rivals, allows for more efficacious interventions in nature than its rivals, is simpler than its rivals, and in general outperforms its rivals in observational and experimental testing is the theory that we can justifiably judge to be comparatively true, i.e., closer to the truth relative to its rivals (Mizrahi 2020, 110-115).

3. Conclusion

It is precisely because we do not know whether the scientific theories we are evaluating are competing theories from the so-called "T-space" or competing theories from the so-called "O-space" that we are not entitled to conclude that the more successful theory of a set of competing theories is (approximately) true. Nevertheless, we are entitled to conclude that the more successful theory of a set of competing theories is comparatively true, i.e., closer to the truth relative to its competitors in the set. This is because, even if we are testing a set of competing theories from the so-called "O-space," those competing theories are still closer to (or farther away from) the truth relative to each other. Contrary to what Park (2021, 1) claims, then, his Argument from Double Spaces does not spell trouble for Relative Realism.

This should not be surprising. After all, as Park himself says, his "argument from double spaces mirrors Bas van Fraassen's (1989) argument from a bad lot in multiple respects" (2021, 1) and the latter is an argument that "motivated [me] to develop relative realism" (2021, 5). A bad lot is not an equal lot; some things in that bad lot are worse than others. Similarly, even a set of bad competing theories, or competing theories taken from the so-

called "O-space," contains theories that are worse relative to other rival theories in that set of bad theories. As long as comparative theory evaluation allows us to rank competing theories in order from better to worse, such relativized ranking of competing theories can only justify comparative judgments about competing theories, such as T_1 is comparatively true (that is, T_1 is closer to the truth than its competitors, T_2, T_3, ..., T_n), rather than absolute judgements about competing theories, such as T_1 is (approximately) true.

Acknowledgments

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