

Review of: "Free Will and the Paradox of Predictability"

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The concepts of free will and prediction, closely related as they are, have both been the subjects of ages-long controversies, in philosophy as well as in the sciences covering various aspects of them. Within these debates, the paradox of predictability has provoked a number of arguments that illuminate free will and predictability from different angles. Using it as a focus to accentuate those arguments in the context of a specific paradox, complemented by some original ideas, is certainly not a bad strategy. However, it also bears the risk of getting lost in the discussion of particular details related to this paradox, but lacking general relevance.

With the present essay, the author largely complies with these objectives. Highlights are the elaborate discussions of the distinction between external and embedded predictors, of the necessity that the prediction precede the predicted events, the fact that determinism is a necessary, but not a sufficient condition for predictability, and the impossibility of self-prediction. As a particularly important aspect, the author points out the information-theoretic conditions of predictions and their consequences for free will. They provide crucial arguments deserving special emphasis in the discussion.

At the same time, the article suffers from a number of weaknesses that may well reduce its potential impact. To mention the most serious problems that attracted my attention:

– I find the specific examples not particularly helpful that the author brings out to illustrate the discussion, such as what he calls the "domino universe", depicted in Figs. 1 and 2, the mathematical example of Eqs. (1-3), and the computer program on p. 10. On the one hand, they are oversimplified and miss crucial aspects of the problem they refer to; on the other hand, they bring about certain details

that distract from the essence. In this way, the examples tend to confuse rather than to illuminate.

– As crucial as the distinction between embedded and external predictors is, it is not implemented with the necessary consequence and precision. The concept of an external demon, as the author calls it referring to Laplace's demon, requires that prediction and predicted events or persons do not interact at all, or that at least the demon cannot communicate its predictions to the predicted subject. Otherwise, it becomes part of and interferes with the causal processes going on in the predicted system, that is, it becomes embedded. It is exactly this situation that is considered under the headline of an "external" demon. Moreover, the way it is discussed in the text, the demon appears to be supervised, instructed, and influenced by some undefined superior third party. This additional actor in the play unnecessarily confuses and complicates the argument.

There exists a particularly illuminating "case study" of the critical importance of the retroaction of the predictor on the predicted events, and that moreover enjoys some historical and literary dignity: It is the Oedipus saga, which wonderfully illuminates how the frustrator's (here, King Layos') counteraction is perfidiously outperformed by the predictor (the oracle) and even becomes the decisive instrument to let the prediction come true. This option, reflecting a qualitative superiority of the predicting over the predicted system, must be addressed in the context of the paradox of predictability. I think it even suffices to resolve the paradox and invalidate it as an argument in favour of free will.

– The author dedicates quite elaborate and circuitous reasoning to show the impossibility of self-prediction. Summed up, it can be reduced to a single argument: The memory capacity of the predicting system must be sufficient to accommodate the full initial condition of the predicted system, plus a non-vanishing overhead comprising the prediction algorithm and the prediction as such, i.e., it must be strictly larger than that of the predicted system. More generally, the predicting system must be strictly superior, concerning its processing capacity, to the predicted one. That already excludes self-prediction.

There is again a fascinating case example in the history of literature: In his "Life and Opinions of Tristram Shandy, Gentleman", Tristram Shandy describes his hero's attempt to write down his life story as far as possible towards the present and has to conclude that as he notes the past, time already advances, so that he will actually never catch up. If not even the present can be reached in retrospect, evidently the future remains unattainable forever.

– Most of this essay appears to have been conceived in a decidedly scientific spirit, relying on physical, mathematical, and logical arguments. I was all the more surprised that the author, referring to concepts such as "mentality" and "intentionality", introduces a "mental world" parallel to a "physical world" and thus turns to a kind of dualist view. (In fact, it could be anticipated from the remark in the introduction that "people who, like me, desire that Cartesian dualism and free will libertarianism be true".) I abstain from advancing any of the countless arguments against dualism, but I find it problematic that the author, close to the end, in this way opens doors to another endless philosophical debate.

In the same vein, the conclusion the author announces in the abstract and draws in his "Final Thoughts", that the "paradoxy arises from a confusion between mental and physical notions in its formulation" comes unmotivated and cannot convince. Why such sophisticated austere reasoning, when in the end the inevitable consequences for the paradox of predictability are brushed aside, and the discussion terminates undecided for an open-minded curious reader?

Despite these diverse criticisms, this essay is a thought-provoking read that addresses most of the relevant issues in the context of the paradox of predictability. It may well serve as a primer to enter further into the literature and the ongoing debate around determinism, predictability, and free will.