The Puzzle of Uniqueness and The Being-Apt-To Strategy

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1. Introduction

Perdurantism, the view that ordinary objects are temporally extended and composed of temporal parts, has been considered a theory revisionary of common-sense. However, perdurantism is a revisionary theory because it revises some common-sensical truth-value attribution to ordinary sentences.[2] The pressure towards revisionary ontology is to save, in a way or another, the appearances – to adopt a reconciliatory strategy between the revisionary ontology and common-sense.[3] In this talk, we focus on the exemplar kind of reconciliatory strategies – namely, those strategies based on the method of paraphrase – that is still considered the standard kind of reconciliatory strategies in analytic philosophy.[4] The goal of these strategies is to provide a paraphrase of the contentious ordinary sentence within the given metaphysical theory that preservers the truth-value attribution of common-sense.

Throughout this talk, we examine one specific puzzle that detects a contrast in the truth-value attributions between perdurantism and common-sense: the Puzzle from Uniqueness, based on ordinary sentences of the form: "Statue, and only Statue, is aesthetically valuable at *t*".[5] In particular, the goal of this article is to formulate a new solution to the Puzzle from Uniqueness that, in turn, relies on a novel account of the expression "being apt to" that provides conditions of inheritance of a certain property *P* by a candidate object *x* on the basis of properties or relations that hold between *x* or other entities.

2. Setting the Stage: Perdurantism and The Puzzle from Uniqueness

Perdurantism is the view that a persisting ordinary object is a temporally extended entity that has different temporal parts at different moments of time. Standard versions of

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[2] See, e.g., Sattig 2003; Varzi 2003.

[3] See., e.g., Lewis and Lewis 1970; Van Inwagen 1990; Sider 2001; Varzi 2002, 2003; Carrara and Varzi 2001; Sattig 2003, Berto and Plebani 2015; Kovacs 2021; Carrara and Morato 2023; Koslicki and Massin 2023.

[4] See, e.g., O'Leary Hawthorne and M. Michaelis 1996; Varzi 2002; von Solodkoff 2014; Berto and Plebani 2015; Carrara and Morato 2023; Goldwater 2023.

[5] A version of this puzzle was firstly formulated by Sattig (2003).

perdurantism are compatible with the following Scenario 1. A persisting statue, Statue, is temporally extended over the interval [t_1, t_{n+m}] (with m greater than 0) – viz., Statue is exactly located at its path corresponding to the interval [t_1, t_{n+m}]. Statue has two temporal parts: a temporally extended proper temporal part x at interval [t_1, t_n], and an instantaneous temporal part y at moment t_i, where t_i is part of the interval [t_1, t_n]. y is also a temporal part of the temporally extended proper temporal part x at interval [t_1, t_n].[6] There are several reasons why standard versions of perdurantism may want to have temporally extended proper temporal parts of an ordinary object. One reason concerns lingering properties – namely, those properties that seem to take time to be satisfied, such as the properties of digesting, ripening, and the like.[7] These properties cannot be satisfied by instantaneous temporal parts, but they are satisfiable by temporally extended temporal parts. Another decisive reason is that, according to standard perdurantism, the temporally extended proper temporal part may in turn be another ordinary object. For instance, perdurantism holds that Statue is a temporally extended proper temporal part of the clay it is made of, Clay.[8]

A crucial assumption is how ordinary talk of having properties at time is accounted for by perdurantism. The standard perdurantist truth-conditions for ordinary temporary predications are the following:

(**PerdTruth**) "x is P a t" is true just in case $\exists y(\mathrm{TP}(y, x, t) \wedge P(y))$,

where "TP(y, x, t)" stands for "y is a temporal part of x at t". One should note that **PerdTruth** holds for temporary predications, such as "being happy at t", that are predications that are true of, e.g., Obama at a certain moment of time.[9] Moreover, it should be noted that the predication "is P a t" is not the same predication "$P(y)$" in the right-hand side of **PerdTruth**. On the one hand, there is no temporal relativization in the right-hand side. On the other hand, the prediction on the left is a semi-regimented form of our ordinary talk, while the predication on the right is part of a formal theory of perdurnstism. Given these remarks, we can conceive **PerdTruth** as an inheritance principle that fixes how to link a predication of the kind "$P(y)$" to a predication of the kind "x is P a t" in ordinary language. For instance, consider the following sentence:

(1) Statue is aesthetically valuable at t.

The predication "being aesthetically valuable at t" is inherited by Statue via the property possessed by Statue's temporal part at t – viz., the property of *being aesthetically valuable* whose possession is not relativized to time. A fact to be noticed is that the given framework is compatible with the thesis that an instantaneous thing x is temporal part of itself. Thus, if x is P, it follows that x is P at t.[10] Now, in order to examine

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[6] We make the standard assumption that the value of "t_1, t_2, …" are moments, while the value of "[t_1, t_n], [t_1, t_{n+m}], …" are intervals of time.

[7] See, e.g., Hawley, 2001.

[8] Simons 1987, Sider 2001.

[9] We are focusing on temporary properties that are taken to be the target of **PerdTruth**, and that exclude, e.g., age-properties "being 45 years old" or properties like "remembering one's first wedding". For a discussion, see, e.g., Hawley (2001), Sider (2001), Sattig (2003).

[10] This fact depends on the specific definition of temporal part adopted – whether it makes room for things that are temporal parts of themselves. See (Correia and Calosi, *ms*) for a definition of temporal part that is irreflexive.

the most general and challenging version of the Puzzle from Uniqueness, we assume that a thing *cannot* be temporal part of itself. If one wants a thing to be temporal part of itself, the provided arguments will be readily accommodated.

The Puzzle from Uniqueness can now be stated.[11] Consider the following sentence:

(2) Statue, and only Statue, is aesthetically valuable at t_i.

According to common-sense, sentence (2) may be true (see, Sattig 2003). Indeed, we may conceive a world in which Statue is the only object that is aesthetically valuable at the given time t_i. We also make the assumption that Statue is a persisting object in every world it exists at – viz., in every world Statue exists at some time t_1, Statue also exists at some time t_2 such that $t_1 \neq t_2$.

Let us notice that (2) contains a condition of uniqueness "and only Statue", and that **PerdTruth** does not provide any way of analyzing a uniqueness-condition within perdurance theory. Following Sattig (2003), we suppose interpreting the uniqueness-condition in (2) as (informally) saying that for any object that has a *t*-temporal part that is aesthetically valuable, this object is identical to Statue. Given this assumption and given **PerdTruth**, the paraphrase of (2) within perdurance theory is the following (see Sattig 2003):

(3) $\exists x(\mathrm{TP}(x, \mathit{Statue}, t_i) \wedge \mathrm{AesVal}(x)) \wedge \forall y(\exists z(\mathrm{TP}(z, y, t_i) \wedge \mathrm{AesVal}(z)) \rightarrow y = \mathit{Statue})$.[12]

The situations in which common-sense holds (2) to be true are incompatible with situations akin to Scenario 1. According to Scenario 1, Statue has a temporally extended proper temporal part x at $[t_1, t_n]$ and a temporal part y at t_i, where t_i is part of $[t_1, t_n]$ and such that y is a temporal part of x at t_i. Now, temporal part y at t_i is aesthetically valuable. Then, by **PerdTruth**, both Statue and x are aesthetically valuable at t_i. Thus, (3) is false, and so (2) is false, contra the intuitive truth-value attribution given by common-sense. Thus, perdurantism finds itself in a predicament. On the one hand, standard versions of perdurantism want to perverse Scenario 1 because, e.g., the temporally extended temporal part x has the property of *being decaying*. On the other hand, Scenario 1 together with **PerdTruth** is incompatible with ordinary truth-value attribution provided by common-sense and the result may be conceived as a counterexample to the formulations of perduantism that allow this output. This is the place where reconciliatory strategies step in.

3. A novel solution to the Puzzle based on *being apt to*

In the following, we sketch of a theory of *being apt to* that will be used to develop a reconciliatory strategy to the puzzle. This solution modifies **PerdTruth** and so the interactions between the temporary properties possessed by an object x and the atemporal properties possessed by its temporal parts.

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[11] This puzzle is a version of a puzzle initially formulated by Sattig (2003).

[12] Someone may take issue with the proposed paraphrase of (2). However, Sattig (2003) examines other possible readings of (2) and argues that they are untenable. Regardless of whether or not Sattig's arguments are effective, we are interested in the intended reading of (2) according to which Statue is aesthetically valuable at t_i, and there are no other objects numerically different from Statue which are aesthetically valuable at t_i. Since (3) is the most plausible paraphrase of this intended reading of (2), in the following we shall focus on paraphrase (3).

The notion of *being apt to* is mundane, and it may be introduced through several examples:

(4) Someone is *apt to* take the driving license in UK just in case they are 17 years old.
(5) Someone is *apt to* be the successor of the King of the Franks just in case they have some blood relationship, and they are male.
(6) Something is *apt to* be accelerated just in case it is a massy body located in space.
(7) Something is *apt to* be squared just in case it is a geometrical figure with four sides.
(8) Something *is apt to* be true just in case it is a proposition.

A way of glossing the expression "being apt to" is by understanding it as a way of establishing a restriction on the candidates that may have property *P*. In other words, the *apt-to* strategy provides conditions of inheritance of a certain property *P* by a candidate object *x* on the basis of properties or relations that hold between *x* or other entities. Consider example (5). King Louis le Pieux had eleven children during his life: seven men and four women. There was a law in the Kingdom according to which only men with the right blood relationship can be the successor of the King. Such a law establishes that only the seven children that are men are apt to be the successor of the King, thereby restricting the candidates by excluding women from having the property *being the successor of the King*.

To initially develop a theory of *apt-to*, let us suppose that the expression "*apt-to*" is a predicate modifier, such that given the modifier "*apt-*" and the predicate "*P*", one obtains the predicate "*atp-P*". The first two fundamental principles that regulate the meaning of *apt-to* are the following:

(Pr1) If an object *x* is *P*, then *x* is apt to being *P*;
(Pr2) If an object *x* is apt to being *P*, it doesn't follow that *x* is *P*.

(Pr1) and (Pr2) jointly entail that the properties expressed by "being *P*" and "being apt to being *P*" may be different. For instance, if something is accelerated, then it is apt to being accelerated. However, if something is apt to being accelerated, it doesn't follow that it is accelerated. Maybe this body is moving in linear motion. Further, if something is not apt to being accelerated, such as a photon, it is not being accelerated.

Given the goal of this article, we develop a mini-version of the *apt-to* theory by fixing the following two schemas:

(Pr3) $\Box\forall x\exists y(atp\text{-}Px \leftrightarrow Qy)$
(Pr4) $\Box\forall x\exists y(Px \leftrightarrow atp\text{-}Px \wedge Ry)$,

(Pr3) claims that an entity *x* is *apt-to being P* just in case a condition *Q* is satisfied, where the condition *Q* does not express an *apt-to* property. The entity that satisfies *Q* may be *x* itself or some other entity *y*. (Pr4) claims that some *x* is *P* just in case it is *apt-to being P* plus some condition *R* holding on *x* or some other entity. So, according to (Pr3) and (Pr4), for each property *P*, there are conditions *Q* and *R* that satisfy these two schemas. Some partial elucidations concerning *Q* and *R* will be provided in what follows. First, (Pr3) and (Pr4) holds by necessity. A further constrain on this account of *apt-to* is that the kinds of necessity involved may be different. For instance, the necessity involved in the example (8) is metaphysical in nature, the necessity involved in example (6) is physical, while the necessity involved in sentences (4) and (5) seems to be both legal and historical in nature.

Moreover, the specification of the conditions *Qy* in (Pr3) and *Ry* in (Pr4) depends on the specific situations and it is ultimately relative to the kind of predicate one is dealing with and the given situation. For instance, consider example (4): it is the meaning of the given predicate "take the driving license in UK" and the relative UK law-system that allows one to fix the condition *Q* as "they are 17 years old". Finally, at this stage of development of the *apt-to* theory, we leave it open that, for some property *P*, some *x* has *P* just in case it is apt to being *P*. Maybe fundamental properties are of this kind. For instance, we leave it open that some *x* is a subatomic particle with a negative one elementary electronic charge just in case it is apt to be so.[13] Such a condition may be obtained from (Pr4) by substituting "*Ry*" with "*atp-Px*" such that, in this case, the application of the right-hand condition of (Pr4) would have the form "*atp-Px* ∧ *atp-Px*".

It is now time to apply this mini-theory of *apt-to* to perdurantism. We envisage two cases. The first one concerns temporary predications, "*x* is *P* at *t*", and the second one atemporal predications like "*x* is *P*". Both cases are examined in the revision of perdurantist's truth-conditions for temporary predications, **PerdTruth**, that now take the form:

(**Apt-PerdTruth**) "*x* is *P* a *t*" is true just in case $atp\text{-}t\text{-}Px \wedge \exists y(\mathrm{TP}(y, x, t) \wedge P(y))$,

where "*atp-t-Px*" stands for "*x* is apt to be *P* at *t*" and may be defined in terms of "*P*" and two predicate modifiers, "*apt-*" and time "*t*" conceived as a further modifier.[14] The explication of "*atp-t-Px*" and "*P*(*y*))" depends on the specific predicate "*P*" being considered.[15] Consider, as an example, sentence (1):

(1) Statue is aesthetically valuable at *t*.

Given **Apt-PerdTruth**, the truth-conditions of (1) are the following:

(9) $atp\text{-}t\text{-}\mathrm{AesVal}(Statue) \wedge \exists x(\mathrm{TP}(x, Statue, t) \wedge \mathrm{AesVal}(x))$,

where "*atp-t*-AesVal(*x*)" stands for "Statue is apt to be aesthetically valuable at *t*". Plausibly, the analysis of "*atp-t*-AesVal(*x*)" involves some disjunction of sortals such that common-sense holds that their instances are candidates to be aesthetically valuable at some time – such as "being a statue", "being a painting", and so on. Relevantly, this disjunction of sortals does not include "being a piece of clay" or "being a proper temporal part of a statue". The explication of "*P*(*y*)" takes the form of principle (Pr4), namely "*P*(*y*)" is defined as "*atp-Px* ∧ *Ry*". For instance, with respect to (9), "AesVal(*x*)" may be defined as "*x* is apt to being aesthetically valuable and *x* provides some aesthetic feeling", where the first conjunct "*x* is apt to being aesthetically valuable" may in turn be characterized as "*x* is an object located in space at time that has the shape of a statue or the shape of a painting or…".

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[13] In this case, the properties *atp-Px* and *Qy* in (Pr3) would be still different – viz., *Qy* would not be an *apt-to* property. The situation is similar to the case of *being possibly an electron* (a modal property) and *being an electron* (an actual property). While these properties are different, it is plausibly true that if something is an electron, then it is possibly an electron, and that if something is possibly an electron, then it is an electron.

[14] For a similar option of conceiving the temporal relativization as a predicate modifier, see, e.g., Sattig (2003).

[15] Moreover, this explication of "*atp-t-Px*" may involve the temporal part *y* involved in the second conjunct. For the sake of simplicity, we drop this complication here.

The suggested sketched-theory of *apt-to* within perdurantism seems to solve the original Puzzle from Uniqueness. Consider sentence (2), and Scenario 1. Given **Apt-PerdTruth**, its translation within perdurantism is the following:

(10) *atp-*t_i-AesVal(*Statue*) $\wedge$ $\exists x$(TP(x, *Statue*, t_i) $\wedge$ AesVal(x)) $\wedge$ $\forall y$($\exists z$(*atp-*t_i-AesVal(y) $\wedge$ TP(z, y, t_i) $\wedge$ AesVal(z)) $\rightarrow$ y = *Statue*).

Since a temporally extended proper temporal part of Statue is not apt to being aesthetically valuable at t_i (for the reasons considered above), the conjunct "*atp-*t_i-AesVal(y)" is false for all entities except for Statue. Therefore, (10) turns out to be true. In turn, since (10) is the paraphrase of (2) within the suggested account, (2) is true – and so the common-sense attribution is preserved.

A potential objection to this strategy is that not only Statue, but also a proper part of it, e.g., Statue minus its left pinkie is a statue and so it is also apt to be aesthetically valuable at t_i. This objection is an instance of the problem of the many, and it affects all the previous solutions. A possible response is that a proper part of a statue like Statue-minus is not a statue according to common-sense and so it is not among the kinds of thing that is apt to be aesthetically valuable at a moment *t*. Thus, when philosophers claim that Statue-minus is aesthetically valuable at *t*, they mean that Statue-minus is aesthetically valuable* at *t*, where "aesthetically valuable*" is derivative on having a super-part that is aesthetically valuable.

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