Dao as You? Dropping Proper Parthood in a Mereological Reconstruction of Daoist Metaphysics

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Abstract

In this article, I discuss parthood status in mereologically interpreted Daoist metaphysics, based on the Daodejing. I depart from the dao and you interrelation, which mereologically overlap by sharing parts. I consider the case of a complete overlap, which (a) challenges proper parthood, according to which a part cannot be identical with the whole that it composes, and (b) entails the question of identity that, while complying with classical mereology, cannot be consistent with Daoist metaphysics. The discussion leads to abandoning proper parthood and antisymmetry axiom from classical axiomatics. It also shows a plausible further direction for mereological reconstruction.

Keywords
Daoist metaphysics – mereology – comparative metaphysics – Chinese metaphysics – proper and improper parthood – antisymmetry

1 Introduction

The aim of this article is to examine the question of proper parthood with reference to dao. This discussion is built on a mereological interpretation of the Daoist metaphysical system in the Daodejing, whose assumptions and characteristics are conceptualized in terms of parthood relations.1 One of the most essential relations in Daoist metaphysics is that between dao and you, which, in my analysis, I assume as the departure point for the mereological reconstruction of the whole system. Accordingly, dao and you are conceptualized as two interrelated metaphysical regions that exhaust the Daoist metaphysical universe.

In my mereological interpretation, the difference between the two regions is determined by composition type; more precisely, how parts can form compositions. Compositions partly include what is regarded as objects or things. This incomplete overlap reflects a characteristic feature of compositions: that not all of them are covered by names in natural language. For instance, some objects in outer space that we are unaware of exist notwithstanding the lack of name tagging. The compositions in you are determined by a specific composition rule (or a finite number of rules). For example, composition rules can include parts in physical adherence, forming a system, or life.2 What makes dao considerably different from the

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2 Composition that consists in the forming a living being is proposed by Peter van Inwagen. For details, see Peter van Inwagen, Material Beings (Ithaca, NY: Cornell University Press, 1990): 81–97.
conceptualized you is that it is characterized by unrestricted composition, otherwise known as mereological universalism, according to which, for any entities, there is a composition. Thus, whereas you can be characterized as a region with compositional limits, dao enjoys all possible compositions, part of which are those in you. The interrelation between the two regions consists of the fact that you, as the region of restricted composition, necessarily overlaps with dao, that by virtue of unrestricted composition comprises of any compositions that can originate in you. The very process of the origination of compositions in you can be explained by causal relations between these two regions.³ ⁴

Compositions can involve two types of part-hood. The type of part-hood that appears to be more intuitive is proper part-hood (PP), according to which a part cannot form a composition solely by itself: there need to be at least two parts to compose:

\[ \text{PP}xy \equiv \text{P}xy \land x \neq y \]

There is also a more capacious variety of part-hood, referred to as “improper part-hood.” In comparison with proper part-hood, improper part-hood also includes the case in which a composition is made of only one part:

\[ \text{P}xy \equiv \text{PP}xy \lor x = y \]

The above disjunction makes a material addition, in that it entails the relation of identity of the part and composition that it makes. As will be shown, on the basis of Daoist metaphysics, some doubts concerning this relation can be raised.

The difference attributed to the identity relation is connected with two axioms of so-called classical mereology.⁵ The first of them is reflexivity, according to which any entity is part of itself:

\[ \forall x (\text{P}xx) \]

The other axiom – antisymmetry – is also connected with identity. It states that if any two entities are parts of each other, they are identical:

\[ \forall x \forall y (\text{P}xy \land \text{P}yx \rightarrow x = y) \]

Reflexivity, together with antisymmetry and transitivity (according to which parts of a part of a whole are also parts of this whole: \[ \forall x \forall y \forall z ((\text{P}xy \land \text{Py}z) \rightarrow \text{P}xz) \]), are the axioms that describe the nature of part-hood relations in so-called classical mereology. The implications of the first two axioms consist of the fact that a single part composition is reducible to identity, whereas compositions should be understood as those that are made from proper parts.

Classical mereology axiomatics poses some difficulties when mapped onto Daoist metaphysics. It can be attributed to the status of proper part-hood and its connection with the implications of reflexivity and antisymmetry axioms. According to antisymmetry, any mutual part-hood leads to reflexivity, which entails the relation of identity. However, as will be shown, in Daoist metaphysics there are justified reasons to question the holding of such a conceived identity.

The article is concerned with this particular challenge to classical mereology axiomatics. It is

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³ The nature of causal relations between the dao and you regions is a considerably complex and not directly connected issue. It is not directly connected with the topic under discussion in this paper. A more detailed account of how the dao and you interrelation is causally conceptualized is outlined in Banka, “Rules of Composition: A Mereological Examination of the Dao-You Relation.”


motivated by a special case of the relation between dao and you that can suggest an interpretation that goes against the grain of reflexivity and asymmetry, in that there can be a mutual inclusion of the two regions that violates an identity relation. This in turn would require reconstructing Daoist metaphysical tenets in a manner different from non-classical mereological terms.

The discussion starts with a formal explication of the problem by means of axioms and definitions, where possible alternative solutions are proposed. Next, I shall map the problem onto Daoist metaphysics by locating it in the relation of dao and you. Modeling this relation in accordance with classical mereology axioms is meant to pinpoint their shortcomings in encapsulating the special case of the relation – the entire overlap of dao and you – which cannot be ignored for the sake of axiomatic coherence. The next step consists of the mereological conceptualization of the case at stake: the mutual parthood between dao and you. Finally, in the concluding remarks, I shall discuss the plausible role of improper parthood and dropping proper parthood in reconstructing Daoist metaphysics. I shall also show where this discussion can be extended, in particular to the composition as identity problem, which remains one of the most important issues in contemporary mereology.

2 Formulating the Problem

As mentioned in the introduction, classical mereology, with regard to parthood relationship, is based on three axioms: reflexivity, antisymmetry, and transitivity. The problem relevant to our discussion hinges on the first two.

Let us start with antisymmetry, which states that if two entities are parts of each other, they are identical. It has to be noted that antisymmetry occurs when two entities not only share parts but the sharing in question is complete. To highlight how complete sharing is relevant to the problem discussed in this article, let us view it in terms of mereological overlap \((O_1)\), defined as follows:

\[
(O_1) \ Oxy \equiv \exists z (Pzx \land Pzy)
\]

Two entities overlap when there is a \(z\) that is a part of both. This definition operates with improper parthood, which allows for cases in which the overlap is complete or incomplete. The latter variant of overlap \((O_2)\) can be defined in the following way:

\[
(O_2) \ Oxy \equiv \exists z (PPzx \land PPzy)
\]

\(O_2\) refers to a type of overlap in which only a portion, and never the whole, of \(x\) can be shared by \(y\) and vice versa. What clearly follows is that in \((O_2)\) despite parts being shared, we always distinguish two entities, and there is no premise for raising the question of identity between them. The question only emerges in the case of complete overlap \((O_3)\). It can be defined in the following way:

\[
(O_3) \ Oxy \equiv \forall z (Pzx \land Pzy)
\]

Complete overlap, which consists in sharing all the parts of \(x\) by \(y\) and vice versa, is tantamount to their identity:

\[
\forall z (Pzx \land Pzy) \equiv x = y
\]

From the perspective of overlap, it can be said that identity becomes an issue when the limit of this very relation is reached: the sharing parts must reach completeness to dismiss the difference between entities and collapse into identity. The identity in question can be defined by Leibniz’s Law, otherwise referred to as the identity of indiscernibles, according to which “if, for every property \(F\), object \(x\) has \(F\) if and only if object \(y\) has \(F\), then \(x\) is identical to \(y\):”

\[
\forall F (Fx \leftrightarrow Fy) \rightarrow x = y
\]

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Mereology conceives of entities as compositions determined by their proper parts. Accordingly, the complete sharing of the same and only the same parts appears to be sufficient for accepting the identity of compositions. However, this interpretation of identity and the above-described overlap relations raise a serious doubt once mapped onto the interrelation between dao and you. The incompatibility particularly concerns the liminal case when the two metaphysical regions entirely overlap. On Leibniz’s Law, one can state that dao is identical with you, which entails there being only one object. However, considering the whole Daoist metaphysical system, especially the interactive character of dao and you interrelation, this would entail that the overlap reaches a stage in which either dao or you cease to exist. At least at face value, such a fact would be difficult to accommodate. First, the annihilation of dao would contradict its eternal status. Chapter 25 of the Daodejing states that dao has always existed and operated in the whole universe.\footnote{Wing-tsit Chan, trans., “The Laotzu (Tao Te-Ching),” in A Source Book in Chinese Philosophy (Princeton: Princeton University Press, 1969): 153.} Granting dao a temporal status would also pose a considerable explanatory problem to the processual characteristic of the whole system that consists of the dynamic origination and reaching completion of compositions in the you region. The whole of Chapter 51 of the Daodejing refers to the relation between dao and the “ten thousand things” (wanwu 萬物): concrete objects that constitute the you region. What particularly matters here is that, apart from being produced (sheng 生) in you, the objects are not disconnected from the activity of dao (“It leads them but does not master them.” \textit{Zhang er bu zai} 長而不宰).\footnote{Ibid. 163–164.}

Second, even if one assumed the temporal cessation of dao, the you region, which in this particular case should be recognized as tantamount to the whole metaphysical universe, would be describable by different “laws” than those of dao. Consequently, “you-laws” would supplant the previous and metaphysical ones that necessarily underpin them.\footnote{It can be conceived that in Daoist metaphysics we can distinguish between two types of laws: metaphysical, which can be identified with the processes taking place on the dao level, and nomic, which hold for the you region. For a more detailed conceptualization, see Rafal Banka, “Dao as a Unified Composition or Plurality: A Nihilism Perspective,” manuscript under review.}

Both cases appear highly inconsistent with, if not contradicting, the foundations of Daoist metaphysics. This lack of compliance with the identity of indiscernibles invites two solutions. The first would possibly require bending some characteristics of Daoist metaphysics to preserve the classical mereology axiomatics plus Leibniz’s Law. In such a case, the costs of appropriation should be meticulously weighed up. The other solution would involve resorting to alterations beyond the premises of classical mereology that would require a weakening and/or supplementation of classical mereology axiomatics.

\section{Proper Parthood Modeling}

Let us examine if, and if so to what degree, Daoist metaphysics would have to be adjusted to fit the classical mereology description. To recapitulate, we shall operate with parts only in the strict sense of proper parthood and in compliance with anti-symmetry, which does not allow for two entities sharing only the same parts.

At the outset, two remarks have to be made. First, the dao and you relationship goes beyond relations between parts in its complexity. Among others, it also consists of different composition rules. Although the compositional nature significantly matters in differentiating dao and you, the general distinction between them, as regions of unrestricted and restricted composition respectively, is sufficient for the present discussion focused on part sharing.

8 Ibid. 163–164.
Second, reconstructing the Daoist metaphysical system would be incomplete without explaining the nature of the dynamic interrelation between the two regions that enables the transformations between the two different composition types. I believe that this explanation is to be offered by a reconstruction of causality. Like the first remark, apart from requiring a separate one thorough discussion, this issue can also be isolated from discussing parthood sharing.

Dao and you, as two regions that exhaust the metaphysical universe in the Daodejing, are interdependently connected. In ontological terms, origination and sustaining. Regarding origination, dao is the exclusive beginning of anything that can originate in you. As Chapter 1 states, dao, referred to as nameless is the beginning of all things, constitutes you: “Wuming, wanwu zhi shi. 無名, 萬物之始.” What originates is described as “things” (wu 物) that denote a world of concrete and discrete objects. An analogous depiction of reality can also be inferred from Chapter 28, where the uncarved block of wood (pu 樸), on being fragmented, becomes “concrete things [qi 器] (as Tao is transformed into the myriad things).”

This ontological standing of you makes it possible for things to be named, in contrast to dao, which, due to its undifferentiated character, evades linguistic description, including naming. The aforementioned Chapter 28 showcases that, in contrast with the concreteness of you, dao is a shapeless lump of wood, which, by its indeterminacy, evades linguistic or conceptual encapsulation. However, as already mentioned, the nameability of things cannot be treated as a demarcation line between the two regions, due to you not being entirely linguistically mapped. It should also not be misconceived that dao is a different substance than you. Daoist metaphysics is consistently monistic. One can find confirmation for this in Chapter 21, where dao is referred to as a thing: “The thing [wu] that is called Tao is eluding and vague … Eluding and vague, in it are the things [wu].” The difference is attributed to being undetermined and therefore impossible to cognize, rather than being a different substance.

Another important characteristic of the you region is that concrete things are complex in the sense of being composed of distinguishable parts. The Daodejing does not address this mereological issue directly; however, such constitution of the world of things can be inferred from some fragments of the text. It is manifested conspicuously in Chapter 11, where the usefulness of dao is exemplified by the wheel, utensil, and room: they are functional only after being complemented by empty space. Regardless of arguing for this aspect of dao, the objects analyzed in terms of their utility are described in terms of their constitutive parts. Accordingly, things in you are not atomic but can be conceived of as compositions in the sense of being wholes composed of parts that are bound by some determinable composition rule (or rules).

It should be borne in mind that the above compositional characteristics are to be found in the you region and should not be extended to dao. One of the differences between dao and you consists of juxtaposing the indeterminacy of the former with the determinacy of the latter. This can be mereologically attributed to wu, which can be conceived of as a composition.

10 In the Daodejing, the ontological characteristic can often be paired with cosmological one.
11 The discreteness can be implied from that they are referred to as “ten thousand things” (wanwu). Ibid., 2. Although this numeral in Chinese is more equivalent to “everything” rather than a particular number, it concurrently implies countability.
13 See, for instance, Chapters 14, 25. Ibid., 34, 63.
14 In Chapter 40, dao is even referred to as nothingness (wu 無), from which the you region originated: “All things [wanwu] in the world come from being [you 有], And being comes from non-being [wu].” Chan, “Laotzu,” 163. The nothingness is not to be interpreted as an ontological one but rather as the state of being undetermined.
The *you* region is not ontologically independent. Although it might seem that the complexity of compositions in *wu* is exhaustively explainable in terms of their own “regional” laws, one should not overlook *you’s* inseparability from *dao* that necessarily underpins it. Apart from the already mentioned ontological antecedence, *you* is unable to persist over time without *dao* that sustains it. In Chapter 25, the omnipresence of *dao* is understood as its active involvement in the whole metaphysical universe (*zhouxing* 周行). The activity of *dao* is naturally most manifest in the realm of things, which undergo observable changes in time. It is further stated in Chapter 34 that “All things [*wanwu*] depend on it for life,” as well as that “It accomplishes its task, but does not take credit for it.”\(^{16}\) Thus, apart from bringing it into existence, *dao* constantly sustains *you*.

Confining this diverse interdependent relation to a parthood relationship, the dependence of *you* from *dao*, characterized by origination and subsistence, consists of sharing parts. It complies with the opening statement from Chapter 62, describing *dao* as “a storehouse of all things.”\(^{17}\) More precisely, *dao*, as unrestricted composition overlaps with *you*, constituted of restricted composition. *Dao* has, or in fact is, all the compositions that can come into being in *you*. The very actualization of compositions is an overlap of the two regions. Considering the processual character of sustenance, the persistence of *you* is tantamount to the duration of the overlap.

Not only is the temporal aspect a variable built on sharing parts; what plays a far more ontologically material role is the range of overlap. This complies with the intuition that the volume of the *you* region is proportional to how much it shares with *dao*. From a more general perspective, the concept of processual philosophy, as an interchange of aspects of ultimate reality, underpins a wide range of Chinese philosophy. Although conceptualized differently, this process consists of, and is partly manifested by, the change in proportion of aspects that can be transformed into one another.\(^{18}\) This proto-metaphysical concept has been concretized on the ground of Daoist metaphysics, in a way that inclines parthood relationship interpretation. The process in which things originate from and return to *dao* is underpinned by the changes in the range of overlap between the two regions. And this is where proper parthood and identity enter the scene.

The above interpretation does not pose a problem for *dao* as the storage of compositions that become actualized in *you*, or the storage of all parts that can be shared by *you*. It simply consists of the fact that *you* completely overlaps with a part of *dao*. This entails that *you* is a proper part of *dao*, and that there is no need to bring identity into question. This modelling, based on proper parthood, can also be accepted in the liminal case when no compositions are actualized. Such a case can be assumed in, for instance, Chapter 25, which describes *dao* as something “Which existed before heaven and earth [*xian tian di sheng* 先天地生].”\(^{19}\) From this, one can assume the temporal antecedence of *dao* prior to the origin of anything in *you*. Hence, *dao* alone exhausts the whole metaphysical universe. Accordingly, classical mereology axiomatics needs no alteration.

The opposite case seems unlikely to be accommodated in an analogous way. Let us consider that *you* has all possible compositions that it can have. This means that the whole of *dao* has been

\(^{16}\) Chan, "Laotzu," 157.

\(^{17}\) Chan, "Laotzu," 168.

\(^{18}\) For instance, the *Commentary on the Appended Phrases*, otherwise the *Great Commentary of the Classic of Changes* (*Yijing* 易經), presents the ultimate reality as an interchange of two aspects: *yang* and *yin*. Although these two aspects do not have to be interpreted as parts, it is clearly implied that their interchange is manifested by the altering quantitative proportion between them. See Richard John Lynn, trans., *Commentary on the Appended Phrases*, in *The Classic of Changes. A New Translation of the I Ching as Interpreted by Wang Bi (E-Book)* (New York: Columbia University Press, 1994). Chan, “Laotzu,” 152.
actualized. Whereas it is acceptable to assume a stage at which you does not exist, it is unlikely that this analogy can be transferred to dao. As already mentioned in the introduction, dao is eternal and such an interruption, with its temporal persistence, would be contradictory. No less essential is the fact that dao sustains you, and discontinuity in this respect would disrupt the processual foundation of you’s very existence and duration.

Mereologically speaking, this case is reflected by a complete overlap of dao and you. This is tantamount to the whole of you being part of dao and concurrently, the whole of dao being part of you, which has serious consequences. It violates the so-called weak supplementation principle, according to which a proper part in a composition must be supplemented by another proper part that does not overlap with it:

$$PP_{xy} \equiv \exists z (PP_{zy} \land \neg O_{zx}).$$

Consequently, the proper parthood status of you is obliterated. And, more importantly, on the antisymmetry axiom, dao and you, due to being a part of each other, are identical. This would not allow for differentiation between two extreme cases – the state prior to origination of you and full actualization of dao – owing to the collapse of the two regions into identity.

The above liminal case, leading to the annihilation of dao or its identity with you, poses a great challenge to mereological reconstruction. The above analysis leads to the idea that the unavoidable bending of the dao and you relation for the sake of keeping full classical mereology axiomatics would compromise the fundamentals of Daoist metaphysics, if not the intuitions of Chinese metaphysical and cosmological thinking. The costs of further reconstruction in this direction would be too high. This suggests resorting to other solutions that would ensure the reconstruction of the overlap relation without crushing the metaphysical cornerstones of Daoism. An alternative solution naturally leads beyond classical axiomatics, since the main incongruity has been located in proper parthood and antisymmetry.

4 Beyond Identity

The main problem encountered in the reconstruction within classical axiomatics consists of the identity relation, which cannot be seamlessly incorporated into the actual interrelation of dao and you. For this reason, it is essential to determine what identity implies for parthood relationships and how exactly it is built into mereological axiomatics.

It should be remarked that the identity problem is detached from discussing the principle of substitutivity, according to which designators of identical entities are universally substitutable. This principle presupposes reference identity, by which it focuses on truth preservation in substituting designators. The identity in our discussion does not refer to and should not be attributed to language use; it refers to the identity of indiscernibles in entities rather than how names are semantically referred to them.

Let us consider the identity of indiscernibles in antisymmetry. On the one hand, it appears to be intuitive that when two entities are parts of each other, they should be interpreted as a self-identical entity. Mereologically speaking, two compositions with exactly the same parts cannot be distinguished. However, does this necessarily imply that

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20 It seems legitimate to assume such a case due to the reciprocal character of the process consisting of the origin of things and their return to dao. Whereas one can distinguish a stage when you does not exist, or has completely ceased to exist, it is quite intuitive to assume the other extreme as symmetrical.

they are identical? An insightful remark regarding this matter is made by Aaron J. Cotnoir.

Cotnoir departs from the extensionality principle, according to which entities with the same proper parts are identical. This contrasts with anti-symmetry definition that supplants proper parts with improper ones. It is important to note that improper parthood is not identical for those who reject antisymmetry. Instead, identical, improper parthood is to be understood as equivalent in the sense of being mereologically indistinguishable. The lack of mereological distinctions does not entail non-mereological ones.23 Analogously, identity, defined as the identity of indiscernibles, is not restricted to parthood. Accordingly, two entities can have all the same improper parts and not be identical.

Abandoning classical mereology (more precisely, extensionality) by rejecting antisymmetry, and supplanting identity with equivalence, bears important metaphysical consequences. This provides high compliance with the problematic complete overlap of you and dao. Accordingly, dao and you are equivalent by sharing the same proper parts.

What makes the compliance high but not entire is having the same improper parts. This would consist of two parthood relationships: dao having you as its part and vice versa. It is plausible to map this relation in a consistent manner onto Daoist metaphysics. This refers to the case in which you exhausts its ontological boundaries. Considering sustenance, it cannot be detached from dao. In this way, dao has the “maximal you” as the improper part. This stage is paired with a symmetrical relation of you having the whole of dao. This relation leads to rather counterintuitive metaphysical conceptualizations, mainly in connection with the fact that dao is not only temporally (cosmologically) but also ontologically antecedent to you. However, it has to be borne in mind that our discussion is restricted to parthood relationships and can be complemented by other metaphysical relations, especially causation, which can accommodate this complication.

Supplanting mereological identity with equivalence not only helps to accommodate the liminal case of the dao and you overlap within non-classical mereology. Importantly, it opens the field to establishing the nature of equivalence, which would involve a compatible complementation that both observes and goes beyond its mereological foundation.

5 Conclusions

It has been shown that on a formal level, the mereological reconstruction of sharing parts between dao and you requires dropping proper parthood and antisymmetry. Once this is done, a consistent and comprehensive interpretation of Daoist metaphysics can be further conducted.

Opting for a non-classical conceptualization of fundamental parthood relations also opens the field to more diversely constructed investigations, where two plausible directions appear to be particularly interesting. First, supplanting identity with equivalence invites investigating the nature of what “makes a difference.” This can be approached by way of identifying places where the strictly mereological relation is weakened. Kit Fine distinguishes four principles considered as redundant when considering the mereological identity of entities that have the same parts: absorption, which is related to repetition of components, collapse – that equals a whole made of a sole component with that component, leveling – that is connected with embedding components, and permutation – that concerns order.24 All four of them point to the structuring of parts in compositions, which can serve as a measure as to what degree pure mereological reconstruction should require complementation. This direction


of further determination seems to be intuitive in light of the difference between the undifferentiated dao and the differentiated you.

Second, the interpretation of the complete overlap with the exclusion of extensionality invites considering the composition as identity thesis, according to which a whole is nothing over and above the parts that constitute it. This thesis can be gradated and viewed through, for instance, David K. Lewis’s likeness terms: ontological innocence (it is redundant to say that both parts and their composition exist), unrestricted composition, unique composition, ease of describing fusions (a description of parts is also a description of their composition), and sameness of spatio-temporal location.\(^25\) Another gradation can also be introduced with regard to numerical identity,\(^26\) which would have to be referred to the metaphysical oneness of dao. As has been shown, identity is at stake in Daoist metaphysics, and referring it to composition theory would contribute to a more comprehensive mereological conceptualization.

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