

ONTOLOGICAL DEPENDENCE, A COMPARISON BETWEEN KIT FINE AND E.J. LOWE

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Abstract. In this paper I go over the similarities and differences between two accounts of ontological dependence: Kit Fine's constitutive account and E.J. Lowe's identity-dependence. I argue that their bases are very similar, in that they rely on a coherent notion of an object's real definition, analogue with the nominal definition of a term. For both Fine and Lowe, the notion of ontological dependence is primitive and asymmetrical. The few differences between the two accounts, I argue, are implications of the difference of opinion on the matter of metaphysical neutrality: Fine is wholly for it, as opposed to Lowe that doesn't believe in it.

Keywords: ontological dependence, existence, Kit Fine, E.J. Lowe.

The fact that an object's existence depends on other objects existing as well stands as the common base for all the different types of ontological dependence. Some of the more common cases of existential dependence are:

- A non-empty set exists if its members exist,
- A universal exist only if instances of it exist,
- A trope is dependent on its bearers,
- Any number is dependent on the number 0 and the 'successor' function,
- An event depends on its participants (and maybe the time and place at which it happens)

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The examples above are neither of causation, nor of natural law, nor are arguably accidents or coincidences. The different relations are metaphysical². This is my first working assumption.

A metaphysical understanding of dependence between objects can be used to define important metaphysical notions, such as substance and fundamentality. A *substance* can be defined as the entity that exists independently of other entities³. The dependent entity can be considered less *fundamental* than the dependee; the two entities are on different levels on the ontological hierarchy.

My second assumption is that one notion of existential dependence, however general, can accommodate most of the intuitions we have about the relation. I think it is preferable to find one general notion applicable in all the cases as opposed to working with multiple notions that may, or may not, be related. Because ontological dependence is so closely related to a number of metaphysical concepts⁴, having multiple notions of dependence would result in fractures in those concepts as well. For example, a split in the concept of fundamentality is unwelcomed as long as the resulting differences are not motivated by other external reasons or intuitions. I believe they are not, the concept being as primitive as it is. Also, common language doesn't really mirror the possible differences in the notion of dependence. Most of the times no other clarification is needed to express the dependences of an existing object⁵.

My third assumption has to do with the members of the relation. The examples discussed are only of dependences between individual objects. I will not go into other forms of dependence,

² I don't see a reason why a multi-layered dependence between the same two objects would be impossible. But, I will not touch upon this aspect further.

³ These should not include its proper parts, if a composite object can be a substance.

⁴ Besides the two presented, the notion of identity and the notion of constitution are also definable in terms of ontological dependence.

⁵ It can be argued that expressing ontological dependence is not very common in every-day language, but this objection is against the notion itself, not only against its division.

for example the generic kind when a certain kind of objects determines an object existing.

Having these three assumptions in the background, I'll discuss critically Fine's constitutive account of dependence and Lowe's identity-dependence account, how they're related to one another and some of the differences that I consider most relevant. In the next chapter, I will start with a short presentation of Fine's account. In the next chapter after that, I will do the same for Lowe's account of identity-dependence. In the last two chapters, I will focus on the comparison between the two, their similarities and differences.

I. Fine's constitutive account

The central point of Fine's view can be stated in the following way: an object x is dependent on another object y if and only if y is part of the real definition of x (Fine 1995, p. 274).

The real definition of x expresses its essence (or identity, nature, all are interchangeable), which is primitive and un-analyzable further. The real definition of an object is also propositional in nature and can be further divided into its constituent objects (Fine 1995, p. 276). These constituent objects are dependent upon.

Fine uses a sentential operator, "in virtue of the nature of x ", that applied to a proposition renders the resulting true proposition part of the essence of the object x (Fine 1995, p. 275). The proposition "The singleton $\{S\}$ is the set that only contains S " is true "in virtue of the nature of the singleton $\{S\}$ ". But, the same proposition isn't true "in virtue of the nature of S ", not being in any way relevant to S that the singleton $\{S\}$ exists. S stands, in Fine's example, for Socrates. Socrates could still be human or born from the parents he was worn even if the mathematical object, the singleton $\{S\}$, didn't exist.

The sentential operator is necessary for a proposition to be part of the essence of an object, but it is not sufficient for said

proposition to be part of the real definition of the object. For example, the proposition "Socrates is human or Plato is identical with Plato" is true in virtue of Socrates because the left-hand side of the disjunction is true. Logical consequences enter only in the essence of an object (making up what Fine calls the "consequential" part of it) (Fine 1995, p. 275). For a proposition to be part of the real definition of an object, it needs to be constitutive (not generalizable). To continue with the example presented above, "Plato is identical with Plato" expresses self-identity, a property that any object has. Thus, it can be generalized away.

"For when an object enters through logical closure, it can be 'generalized away'. Thus, although it is part of the consequentialist essence of Socrates that $2 = 2$, it is also part of his consequentialist essence that every object whatever is self-identical. This therefore suggests that the dependee objects are those that cannot be generalized out of the consequentialist essence." (Fine 1995, p. 277)

All of the simple examples of ontological dependence presented in the beginning are handled easily in this account. A non-empty set is defined by its members, and not the other way around. The number 1 is defined as the successor of the number 0. Opposite metaphysical theories, such as the Aristotelian and Platonist theories of universals, are also handled by the current account. Essence "bends" to the different intuitions an Aristotelian or Platonist endorses.

II. Lowe's identity-dependence

Lowe gives an account of ontological dependence in which x is ontologically dependent on y ⁶ if and only if necessarily there is a function F such that it is part of the essence of x that x is $F(y)$ (Lowe 1998, pp. 147-150).

There is an F such that $\Box x (x = F(y))$, where $\Box x$ is the notation for "it is part of the essence of x ".

⁶ For convenience, an object is dependent upon only one other object.

For this account to not fall prey to the different types of counter-examples⁷ specific to the modal account, essence is taken as primitive. Similar with Fine's constitutive account, Lowe's account has essence expressed by the real definition of the object⁸. Therefore, identity-dependence is asymmetrical (or anti-symmetrical⁹).

The function *F* varies from one dependence relation to another. For example, in the case of the natural numbers greater than 0, *F* would be the successor function¹⁰. In the case of the singleton {*S*}, which has only one member (*S*), the unit set function, "the singleton of *S*", is part of the essence of {*S*}. Lowe makes it clear that only some functions can work; those that follow from the identity of the dependent object (Lowe 1998, p. 148). To illustrate the difference, for *x* equals the number 8, on the one hand, *F* is the "the number of planets" and *y* is the Solar System; and on the other, *F* is the successor function, and *y* is the number 7. The "number of planets in the Solar System" isn't an identity criterion for the number 8 (we can imagine Pluto as a planet of the Solar System), as opposed to the definition of 8 as "successor to the number 7".

Lowe's identity-dependence is very close to Fine's constitutive notion in regards to the notion of real definition employed. Although dependence is un-analyzable further, other objects (constituents) enter into it. Lowe's account makes explicit the way in which this happens; through function *F*. Lowe's background ontology must include at least functions whereas Fine's ontology can remain vague.

An important difference to note, one that I will revisit in the last chapter, is that for Lowe, ontological dependence is internal to a well-defined metaphysical system with ontological assumptions. Fine's notion of dependence is that of a meta-ontological relation

⁷ See Fine's counter-examples against a modal understanding of essence in (Fine 1994).

⁸ For (Lowe 2013, p. 195) the essence of an object is not an entity, and therefore cannot contain other entities.

⁹ Lowe argues that every object is self-identical; therefore dependence breaks symmetry only when considering different objects (Lowe 1998, p. 158).

¹⁰ When considering a Peano-Dedekind axiomatic system.

that could be particularized to any metaphysical system¹¹. Lowe relies on the coherence of the entire metaphysical construction to explain the odd examples. Fine employs only logical means (the "generalizing out" method) to define constitutive dependence (the real definition of an object).

Lowe defends the close relation between identity and existence¹² and therefore relies on essence to constrain the features that explain the existence of the dependent object. Lowe welcomes the priority of essence over existence¹³.

As a side note, (Lowe 2005) defines identity-dependence, as well as other forms of existential dependence, in terms of more primitive relations¹⁴, instead of functions and real definitions. The change of vision is partly motivated by his metaphysical assumptions that form his 4-category ontology¹⁵. I will not go into this late form of ontological dependence.

III. Similarities between the two accounts

Even from these short characterizations of the accounts, some similarities can be formulated. The most important is that essence is primitive in both accounts, and such that it guarantees the asymmetry of the dependence relation. Because essential properties imply necessary properties, but not the other way around, all the basic examples of dependence are handled easily by both accounts.

¹¹ Lowe doesn't consider the explanation of existential dependence "to be a mere exercise in conceptual analysis but a substantive contribution to fundamental metaphysics" (Lowe 2013, p. 203).

¹² Both in (Lowe 1998, p. 149) and (Lowe 2013, pp. 202-203).

¹³ "in general, essence precedes existence. And by this I mean that the former precedes the latter both ontologically and epistemically." (Lowe 2008, p. 40)

¹⁴ The primitive relations that constitute dependence are: identity, instantiation, characterization, exemplification, constitution, composition (Lowe 2005, ch. 3).

¹⁵ Presented in chapter 1 of (Lowe 2005) the 4 categories in which entities fall are: kinds, properties (and relations), objects and monadic (and relational) modes.

Fine's distinction between constitutive and consequentialist ontological dependence, can be made in Lowe's account as well¹⁶. An object can be dependent based constitutively on a function F in virtue of its nature (e.g. a sculpture depends on the artist who created it), and an object can be dependent based consequentially on a function F^* in virtue of his nature (e.g. a sculpture is dependent of the artist who created it and $2 = 2$). The reason for this similarity between the two accounts can be traced back to the notion of essence used and in particular to the "in virtue of the nature of" operator being extensionally the same in the two accounts.

Both notions address a relation between objects considered as more than mere existences. Fine treats the real definition of an object analogue to the nominal definition of a term (Fine 1995, p. 275). Lowe's definition of identity-dependence doesn't mention existence, but instead identity. The two are ultimately linked (according to Lowe, essence precedes existence¹⁷) but, crucially, ontological dependence applies to the latter and not the former.

The similarities are not only of the good kind. Substance and fundamentality are hard to define in both accounts. I believe that both accounts need important metaphysical imports to accommodate some of the intuitions regarding the two notions. Take, for example, substance in Fine's constitutive account. Only certain objects, those without a definition, are substances. The empty set and the number 0 are good examples. Actually, any stipulated element is a substance, so there can be an infinite number of them¹⁸. But, Socrates or the kitchen table, or, in general, any concrete object, are not substances. For any concrete object, it

¹⁶ Fine's distinction between mediate and immediate dependence also fits naturally in Lowe's identity-dependence account (Fine 1995, p. 281).

¹⁷ An essential assumption on the part of Lowe, taken also in his epistemology, for example in (Lowe 2008).

¹⁸ (Koslicki 2013, pp. 58-59) has the acute observation that the number 0 and the empty set are the only substances from all the objects that fall under their kinds ("number" and respectively "set").

can be argued, that at least its space-time extension is essential¹⁹. The kitchen table can occupy different space-time regions during its existence, but it will cease to exist when it occupies none.

A way to salvage the notion of substance is to have additional criteria applied to the constituents of the real definition. Constituents that are proper-parts can be ignored. Thus, sets are now substances. If we ignore their space-time extension, concrete objects can be substances. Ignoring the origin of an object makes Socrates a substance. Many other, non-neutral criteria can be used.

It is important to note that the notion of fundamentality has the same characteristics as the notion of substance. Without metaphysically infused criteria, only certain objects, i.e. the number 0 and the empty set, can be considered fundamental simpliciter. Any other object is less fundamental than another, if and only if the former is definable in terms of the latter.

We can follow Fine's analogy of real definition to nominal definition further than maybe intended. The constituents of a proposition that defines nominally a term are nouns, verbs, adjectives, adverbs, pronouns etc. Each part of the proposition plays a different role and is interconnected with other parts e.g. the adverb is a mode to the verb, an adjective describes a noun. Fine's constitutive account can be extended to allow the same kind of roles for the constituents of the real definition of an object. Furthermore, similar with how the different propositional parts are more (or less) important in the sentence, the objects involved in the dependence relation could be more (or less) important as well. Some would be even replaceable. Fine's notion of alternative definitions, of a "family of definitions" (Fine 1995, p. 285) follows from this. I think the blurring of the line between metaphysics and grammar/language is not welcomed. There is no fact of the matter to say if distinctions like "object x is more dependent on object y than on object z" are real or simply grammatical. Ways of speaking about objects can be mistaken for how objects are in reality, and

¹⁹ (Kripke 1980) argues that the constituent matter is necessary (and essential) for an object.

because the dependence relation and essence are primitive, the ambiguity will remain unresolved. Lowe's notion of identity-dependence doesn't exclude this extension, because it relies on real definition being primitive and constitutive.

IV. Differences between the two accounts

Fine handles some of the more exotic examples of ontological dependence quite differently from Lowe. The exotic examples concern odd forms of existence, mainly necessary existence (e.g. the Identity of Socrates, and other haecceities) and impossible existence (e.g. round square). I think the main reason for the different approaches is Fine's goal of a neutral notion of dependence, separated from any particular metaphysical system²⁰. It is a goal not shared by Lowe, who doesn't have a problem with assuming other metaphysical notions and thus making the dependence relation coherent only inside his system²¹.

In Fine's neutral understanding, the round square (or any impossible object), doesn't have a real definition in terms of other existing objects²². The way he achieves this is by enforcing logical non-generalization as a criterion when accepting dependences. The non-existence of the round square implies the existence of any object whatsoever, which can be generalized away, and thus not appear in the real definition.

Lowe doesn't address impossible objects in particular. But, he discusses the objects generalized away from the real definition of term (e.g. self identical $2 = 2$) in terms of the "tendentiously

²⁰ Fine argues against tying the notion of dependence to any particular metaphysical position; in (Fine 1995, p. 274) he is against banning impossible objects from entering into dependence relations.

²¹ Lowe states it outright in multiple occasions, like in (Lowe 2013, p. 203).

²² Fine considers the implication that an impossible existence depends on all other existing objects as a problem for his essential existential account. Part of his solution is to abandon existence and define ontological dependence in terms of "being" (Fine 1995, pp. 274-275).

named 'existential' quantifier" (Lowe 2013, ch. 1.8) and inference rules of first-order logic. Lowe believes that if existence were a "first-level" predicate with a meaning primitive and undefinable (Lowe 2013, p. 198), the objects that enter in any real definition (and thus form the entire definition of impossible objects) would be excluded. He doesn't say exactly how it can be done, but it seems likely that the process would specialize the notion of dependence to Lowe's metaphysical system.

The problem of necessary existents, say Socrates' Identity (I_s) is another exotic case that differentiates Lowe's identity-dependence account from Fine's neutral understanding of ontological dependence. More specifically, in Lowe's case, an object such as I_s cannot be a necessary existent²³. And if it is considered that, then it must be a haecceity, and not prior to the non-necessary object (i.e. Socrates). In the case of Socrates' Life, Lowe argues that it is identical with Socrates himself because qualitatively Socrates could have lived a different life, but numerically "it is hard to see how he could." (Lowe 1998, p. 143)

Fine's account has ontological dependence not tied up to any substantive metaphysical assumption²⁴. But, he pinpoints the implication that for an existing object x too dependent on another object y , where y is part of his real definition, then object y must exist as well.

"We therefore have a form of actualism. If the object exists then so must all of the objects involved in its essence; it must be possible to say what the object is without reference to what does not exist." (Fine 1995, p. 280)

²³ "However, in my view, properties are not, in general, necessary existents: being an 'immanent realist', I hold that they exist only in the worlds in which they are instantiated" (Lowe 2013, p. 201).

²⁴ This approach is explicitly refused by Fine: "But still the legitimacy of an account of dependence should not be made to rest upon the adoption of one modal view as opposed to any other no matter how reasonable it might be." (Fine 1995, p. 274)

Probably the most evident difference between Lowe and Fine has to do with cycles of dependence. Lowe employs the concept of a function to handle the asymmetry of dependence; he enforces a hard criterion for dependence to be non-cyclical (Lowe 1998, p. 145). His reason for this is that dependence is a form of understanding, which is typically asymmetrical. I think that his exclusion of jointly dependent objects is not called for. If one object can be self-explanatory (basically a substance) (Lowe 1998, p. 146), so can a number of objects, taken as a group. Fine, certainly, doesn't have a problem with cycles of dependent objects (Fine 1995, p. 283).

Fine also endorses a different kind of dependence, "priority" (Fine 1995, p. 283), in which cycles are to be replaced by simultaneous dependencies (analogue with simultaneous definitions of terms). Take Sherlock Holmes and Doctor Watson as an example. On the one hand, we can define them one in terms of the other: Sherlock Holmes is the detective from Doctor Watson's writings, and Doctor Watson is the biographer/blogger of Sherlock Holmes. The two definitions form a cycle; the characters are dependent on one another to exist. The simultaneous definition of the two works with the pair <Sherlock Holmes, Doctor Watson>, and is not reducible to its component's separate definitions. One such definition could be: Sherlock Holmes and Doctor Watson are the pair that have solved a number of crimes, among others those of the "The Hound of the Baskervilles", "A Scandal in Bohemia", "The Greek Interpreter".

Conclusions

The relation of ontological dependence between two or more objects is captured best in Kit Fine's constitutive account and E.J. Lowe's notion of identity-dependence.

I have gone over what makes them quite similar, such as their asymmetrical and primitive nature, how they rely on a coherent definitional approach to objects. In this sense, both also

exhibit some difficulties when used to explain the metaphysical concepts of substance and fundamentality.

I have gone over what makes them a bit different. All the differences identified stem from the commitment of neutrality that Fine tries to follow, and that Lowe has no problem disregarding. Fine's notion of ontological dependence is more meta-ontological, a general construal that could fit in multiple philosophical systems. Lowe's identity-dependence has a place only in his system, and adheres to Lowe's metaphysical assumptions. Some of the more exotic cases of ontological dependence show the differences best.

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