

## *Object as a determinable*\*

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### Abstract

This paper outlines a heterodox and largely unexplored conception of objecthood according to which the notion of an individual object is a determinable. §1 outlines the view. §2 argues that the view is incompatible with a natural analysis of kind-membership and, as a consequence, undermines the Quinean distinction between ontology and ideology. The view is then used to alleviate one source of Quinean hostility towards non-trivial restrictions on *de re* possibility in §3, and to elucidate Fine's neo-Aristotelian, non-modal conception of essence in §4. §5 concludes.

This paper examines an intriguing and under-explored conception of objecthood, inspired by David Wiggins' brief and scattered remarks on the topic.<sup>1</sup> Although I do believe that Wiggins endorses roughly the view described below, I will not defend that claim here. My goal is not scholarly reconstruction of Wiggins' position, but to articulate a heterodox conception of objecthood inspired by Wiggins' remarks, and to outline some theoretical work to which it might be put. One difficulty in relating this view to Wiggins' own is that his discussion comes intertwined with an interest in our ways of representing and conceptualising things, whereas my project lies at a squarely metaphysical, non-representational level.

I should sound a note of caution before I begin. It is not entirely clear to me whether coherent sense can be made of the view. The concepts involved are so foundational that the resources available with which to explicate it are limited. This is often the way within metaphysics, where the subject matter is so broad and the perspective so abstract that theorising strains against the limits of the vocabulary in which it is conducted. So I write this paper in an exploratory spirit, as an attempt to articulate a view at the outer limits of intelligibility. In so doing, I hope to illuminate the contours of our conceptual scheme and the

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<sup>1</sup> See, for example (Wiggins, 1997, §§5, 7), (Wiggins, 2001, pp6, 8 13–14, 57), (Wiggins, 2012, pp8–9).

hidden assumptions embodied by more familiar attitudes towards it. I therefore focus exclusively on explicating a conception of objecthood; positive arguments for it must await another occasion.

The thesis under examination is that the notion of an individual object is a determinable: there are many different and incompatible ways of being an object, by being one or another determinate kind of object. I spell this out further in §1. The interest of the position is twofold. Firstly, it is a heterodox conception of a foundational component of our conceptual scheme, which exposes the metaphysical and conceptual presuppositions of orthodoxy. I begin uncovering these presuppositions in §2, arguing that the view undermines the Quinean dichotomy of ontology and ideology by blurring the distinction between classification and the domain of things classified. This blurring is used in §3 to diagnose and respond to one source of Quinean hostility to non-trivial restrictions on *de re* possibility. The remainder of the paper concerns the second source of interest for the view: it allows systematisation and unification of some core components of a broadly Aristotelian metaphysic. The restrictions on *de re* possibility discussed in §3 are one such component. §4 discusses two others: a non-modal notion of essence that imposes restrictions on *de re* possibility, and the related notion of real definition. §5 concludes.

## 1 The Thesis

This section introduces the target conception of objecthood:

***Object is a determinable (OD):*** The notion of an individual object is a determinable.

Clarification is in order. I begin with the notion of an object, before turning to determinables.

My notion of an object is the most general and inclusive notion of thing, item, entity, being, or individual. This minimally restrictive notion of object is the notion relevant to ontology, the maximally inclusive inquiry into all reality, from whose purview nothing is excluded. In this sense, the objects are what unrestricted singular nominal quantifiers range over; objects are the values of the variables bound by such quantifiers.

Unrestricted quantification is controversial;<sup>2</sup> fortunately, my notion of *object* can be modified to avoid reliance on it. The impossibility of unrestricted quantification is consistent with the possibility of minimally restricted quantification. Maybe no such minimally restrictive interpretation of the quantifier is fully exhaustive. Nevertheless, we may identify the objects with what a singular nominal quantifier ranges over on some minimally restrictive interpretation or other.<sup>3</sup> On this view, the supply of objects outstrips any given interpretation of the linguistic device of singular nominal quantification, without going beyond its reach in principle. Setting this issue about unrestricted quantification to one side, properties, concepts, functions, abstractions, artworks, electrons, economies, ecosystems, universals, tropes, clouds, humans, and anything else whatsoever are all objects on this minimally restrictive notion of *object* (assuming that there are indeed such things).

<sup>2</sup> For discussion, see the papers in (Rayo and Uzquiano, 2006).

<sup>3</sup> I ignore delicacies concerning the logical form of quantification over interpretations. See (Williamson, 2003) for discussion.

This appeal to linguistic resources in my account of objecthood resembles Bob Hale's claim that "ontological categorization...is dependent upon and derivative from prior logical categorization of expressions."<sup>4</sup> Unlike Hale, however, I do not see this as a substantive issue. Ontology requires a maximally general and minimally committal notion of a thing. That is what unrestricted quantification provides. Linguistic tools play a purely reference-fixing role here, stipulatively fixing the meaning of 'object'. It is an open question whether interesting ontological distinctions subdivide the category of objects, and whether all such distinctions must have logico-semantic correlates, as Hale appears to suggest. According to the view articulated below, there are indeed such distinctions, though I see no reason to think of them as reflected in logico-semantic form (except in the special case of certain artificial languages designed expressly for that purpose and discussed in §§2, 3).

I now turn to determinables.<sup>5</sup> Rather than offering an exhaustive analysis here, I seek only to introduce a reasonably familiar notion, emphasising those features of import to the coming discussion.

The determinate/determinable contrast is most familiar from the theory of properties. Determinable properties are those that can be had in many different ways; their determinations are the different ways of having them. For example, *red* is a paradigm determinable. There are many different ways of being red: by being scarlet, or vermillion, or rouge, or... These different ways of being red—i.e. *scarlet*, *vermillion*, *rouge*,...—are the determinations of *red*.

The central notion here is the relational  $x$  *determines*  $y$ , not the monadic  $x$  *is determinate* and  $y$  *is determinable*; for many determinables are themselves determinations of other determinables. *Red*, for example, is a determination of *coloured*: one way of being coloured is by being red, another is by being green, or by being orange etc. And since one way of being coloured is by being red, and one way of being red is by being vermillion, it follows that one way of being coloured is by being vermillion: determination is transitive.

The determination relation has certain modal characteristics. It is not possible to have a determinable without having some determination thereof, e.g.: it's not possible to be red without being scarlet, or vermillion, or rouge, or...<sup>6</sup> But for any given determination of a determinable, it's possible to have the determinable without having that particular determination, by having some other determination instead, e.g.: it's possible to be red without being scarlet, by being vermillion instead. Finally, it's not possible to have a determination without having every property it determines, e.g.: it's not possible to be scarlet without being both red, and coloured.

Do these modal features exhaust the determination relation? It appears not.<sup>7</sup> Consider a list of all possible kinds of concrete thing. Suppose none of those kinds can possibly belong to non-concrete things. Then: (a) it's not possible to be spatially located without belonging to one of those kinds; (b) for any given one of those kinds, it's possible to be spatially located without belonging to it, by belonging to some other kind instead; (c) it's

<sup>4</sup> (Hale, 2013, p10)

<sup>5</sup> For discussion and references, see (Sanford, 2013).

<sup>6</sup> Counterexample: a red object that's different shades in different areas of its surface. Still, the claim in the text will do as an approximation. Something along roughly those lines seems to be correct, and nothing that follows requires a better approximation. Thanks to Tim Williamson here.

<sup>7</sup> For a similar argument, see (Dunaway, 2013, §4)

not possible to belong to any of those kinds without having every determinable of *spatially located*. But those kinds are not determinations of *spatially located*; for being an electron and being a cat aren't ways of being spatially located.

The determination relation entails but is not entailed by the modal relations just described. So how do these relations stand to one another? It is natural to see determination as a more demanding and intimate relation, in virtue of which the modal relations obtain. What exactly is this more intimate relation? My proposal is this:<sup>8</sup>

**Determination:** To have a determinable just is to have some determination thereof.

For any determinable  $F$ , for an object to have  $F$  just is for that object to have some determination of  $F$ .

For any determinable  $F$ , for an object  $x$  to be  $F$  just is for  $x$  to be such that, for some determination  $G$  of  $F$ ,  $x$  is  $G$ .

For any determinable  $F$ , for an object to be  $F$  just is for that object to be  $G_1$ , or  $G_2$ , or  $G_3$ , or... (where  $G_1, G_2, G_3, \dots$  are all the determinations of  $F$  at some level of specificity).

Except for the last, I take these to be little more than stylistic variants, differing only in perspicuity of logical form. The last employs (potentially infinitary) disjunction where the others employ existential quantification over determinations. Although that is an important difference, I intend to leave both options open.

**Determination** employs the locution 'to be  $F$  just is to be  $G$ '. There seem to be two different readings of this locution, a reductive reading and an identity reading. I'll say a little about each, though I needn't choose between them.

On the reductive reading, being  $G$  is more fundamental than being  $F$ , an explication in more metaphysically perspicuous terms of what being  $F$  involves. On this reading, 'to be  $F$  just is to be  $G$ ' is plausibly transitive, but asymmetric and irreflexive. This is akin to Kit Fine's notion of strict full ground.<sup>9</sup>

The identity reading expresses an (higher-order) identity between being  $F$  and being  $G$ .<sup>10</sup> These are two different presentations of a single underlying phenomenon. On this reading 'to be  $F$  just is to be  $G$ ' is transitive, reflexive, symmetric and, like ordinary identity, entails a (higher-order form of) indiscernibility:  $\forall\Phi(\Phi(F) \leftrightarrow \Phi(G))$ , where ' $\Phi$ ' is a second-level predicate variable. This is akin to Fine's notion of weak full ground.<sup>11</sup>

Whichever reading we adopt, **Determination** entails a substantive thesis about the relationship between determinables and their determinations: things have determinables in virtue of having determinations thereof, and facts involving determinables always hold

<sup>8</sup> (Yablo, 1992, §2) endorses a similar proposal, though he emphasises the modal aspects of determination more heavily than I.

<sup>9</sup> (Fine, 2012, §5)

<sup>10</sup> (Rayo, 2013, ch.2) employs this reading. In Rayo's hands, however, the identity reading combines with a coarse-grained conception of content to render 'to be  $F$  just is to be  $G$ ' equivalent to the metaphysically necessitated and universally generalised material biconditional ' $\Box\forall x(Fx \leftrightarrow Gx)$ '. This would undermine my distinction between determination and the modal relations discussed above.

<sup>11</sup> (Fine, 2012, §5)

in virtue of more fundamental facts involving their determinations. This thesis will bear a lot of argumentative weight later.

Why does that entailment hold? Plausibly, a true disjunction is true in virtue of its having a true disjunct. And a true existential generalisation is true in virtue of its having a witness.<sup>12</sup> Moreover, facts about disjunctions and existential generalisations all hold in virtue of facts about their disjuncts and (potential) witnesses. The level of particular disjuncts and witnesses is more fundamental than the level of disjunctions and existentials, so that facts about the latter are always grounded in facts about the former. According to **Determination**, possession of a determinable reduces to (or is identical with) an existential over (or disjunction of) its determinations. So the corresponding theses hold for determinables and their determinations: the level of particular determinations is more fundamental than the level of determinables, so that facts about determinables are always grounded in facts about their determinations.

This argument rests on **Determination**. That's a substantive thesis, which I haven't defended properly here. Still, it's a plausible and attractive thesis about determination. Even if it turns out that **Determination** fails for some intuitive paradigms of determination, we can focus instead on determination\* instead, for which **Determination** is stipulated to hold. It's determinate/determinable structure as characterised above that concerns me here.

The two key components of **OD** are now in place: *object* and determination. So let us return to making sense of **OD**.

Determinate/determinable structure was introduced in application to properties, or classifications of things. The relata of the determination relation were ways for objects to be. Can we make sense of exporting this structure from the classificatory realm to the notion of an object — a *thing* — itself; that is, from classifications to that which is classified? The idea behind **OD** is that we can.

Some terminology and a simplifying assumption will be helpful in explicating this idea. A *complete determination* is a determination that cannot be further determined; it is maximally specific. Note that the relevant notion of maximality depends on the determinable in question. A maximally specific shade of red needn't settle the state of the entire universe, even though any property that fails to do so is, in a sense, less specific than one that does. Relatedly, maximally specific colours incorporate different information about their bearers than do maximally specific masses. The lesson is that each determinable is associated with a range of dimensions of variation, different dimensions with different determinables.<sup>13</sup> A complete determination is maximally specific in the determinable's associated dimensions, not in every dimension of variation whatsoever. It is not trivial that every determinable can be completely determined. To simplify exposition, however, I will assume that they can. If it turns out otherwise, we need only select some level of determination to serve as complete relative to the present discussion.

According to **OD**, the notion of an individual object is determinable. A *kind* is a complete determination of the determinable *object*; I use 'kind' in this sense exclusively henceforth. Note that since kinds are maximally specific, different kinds are incompatible. We

<sup>12</sup> These claims are encoded in the rules  $\forall I$  and  $\exists I$  of Fine's impure logic of ground. (Fine, 2012, §7)

<sup>13</sup> (Funkhouser, 2006) develops an interesting account of determination centred around this idea.

are now in a position to restate **OD** in line with **Determination**:

- There are many different ways of being an object, by being one or another kind of object.

To be an object just is to be some kind of object or other.

To be an object just is to be a cat, or a dog, or a planet, or...

For exposition's sake, I assume throughout that *cat*, *dog*, *planet* and other familiar sorts of thing are kinds in the sense relevant to **OD**: complete determinations of *object*. Although certainly non-trivial, nothing that follows turns on the specifics of what kinds there are.

Recall that true disjunctions and existentials are true in virtue of having true disjuncts or witnesses, that the level of particular disjuncts and witnesses is more fundamental than the level of disjunctions and existentials, and that facts about the latter all hold in virtue of facts about the former. Those same ideas apply here. According to **OD**, for any object whatsoever, it is an object only by virtue of its being some particular kind of object, a cat, or a dog, or whatever it happens to be; its being that kind of object is what grounds its being an object at all. Moreover, the maximally specific level of kinds of object is more fundamental than the level of the determinable *object*: facts about the latter all hold in virtue of facts about the former. This consequence of **OD** will do much argumentative work later.

The central idea behind **OD** is now in place. Before we move on, a question remains. I said that each determination is associated with some dimensions of variation, and that complete determinations are maximally specific in each of a determinable's associated dimensions. What dimensions are associated with *object*? What forms of variation yield the different kinds of object? An ultimately defensible view must answer these questions. Since my primary concern is with structural features of **OD**, not the specifics of what kinds there are or how they're differentiated, I won't take a stand on the issue here. By way of illustration, however, I'll sketch one sort of answer that might be extracted from Wiggins' work.

On this view, different determinations of *object* are supplied by different sortals. Sortals delineate a thing's spatial and temporal boundaries, thereby separating it from its environment.<sup>14</sup> Different sortals result from variation in how this delineation is achieved. One highly general question is whether the delineation results from a principle of activity, or of function.<sup>15</sup> Each principle of activity corresponds to a distinctive variety of behaviour, underwritten by the laws of nature; these supply the sortals for natural kinds. Each principle of function corresponds to a function a thing can serve; these supply the

<sup>14</sup> A generalisation beyond the spatial of the notions of boundary and path will be needed to accommodate abstracta. One natural such generalisation identifies (or, perhaps better, represents) paths with equivalence classes, in the manner of neo-Fregean, or "abstractionist", approaches to the metaphysics of mathematics. On this kind of view, a path through the lines is an equivalence class of lines. Directions of lines are the occupants of paths that are equivalence classes of parallel lines. Other equivalence classes of lines are the paths of other sorts of abstraction from lines. See, e.g., (Wright, 1983) and (Hale and Wright, 2001).

<sup>15</sup> See principle D(v) in (Wiggins, 2001, p72), and the discussion in his ch2. Wiggins appears to allow for a third option: a principle of operation. I am not sure how principles of operation and function are supposed to differ.

sortals for artefacts. For example, the spatial path of a car that undergoes replacement of parts is determined not by some natural law about cars, but by the function cars serve: a car persists through whatever changes preserve its function of transporting people around.<sup>16</sup> Further determinations arise from further specification of these principles of activity and function. Many difficult questions now arise. What forms of characteristic behaviour are there? How should the functions of artefacts be classified? And, most fundamentally: is there really a single collection of parameters such that all possible principles of activity and function result from specification of values for each parameter? I won't consider these issues here. This Wiggins-inspired proposal was intended only for illustration. It is time to move on. The next section explicates OD further by looking more closely at exactly what kind-membership involves.

## 2 Kind-membership

This section examines the nature of kind-membership. What is it for an object to belong to a kind? I offer two arguments to show that OD precludes true, informative answers of a certain type. This underwrites the application of OD to *de re* possibility in the next section.

### First argument

Let *o* be an object of kind *K*. What is it for *o* to belong to *K*, or for *o* to be a *K*? One might expect an informative answer in the form of a claim about *o*: for *o* to be a *K* is for *o* to.... I now argue that OD rules out any such answer. I first reject one natural candidate, and then generalise from there.

The natural candidate account of kind-membership is this: for an object to be a *K* is for that object to instantiate the kind-property of *being a K*. The problem arises when we ask what notion of object is employed on the right hand side of this account. A dilemma arises.

First horn: the determinable notion *object*. The last section argued that all facts involving this determinable hold in virtue of facts involving its determinations. In particular, an object in the determinable sense instantiates *being a K* in virtue of that object in the non-determinable, *K*-involving sense instantiating *being a K*. But then the account presupposes what it was supposed to explicate. The goal was to explicate *o*'s membership of *K*. It now turns out that the candidate explication obtains in virtue of a fact that itself involves *o*'s membership of *K*. In sum, OD entails that facts involving the determinable notion of *object* all hold in virtue of facts involving particular kinds; this blocks an account of kind-membership from being given in terms that neither themselves involve, nor hold in virtue of, facts involving the very instances of kind-membership at issue.

Second horn: the non-determinable notion of a(n individual) *K*. But then the account employs the very notion of kind-membership it was supposed to explicate, by employing the *K*-involving determination of *object*. This renders the account at best uninformative:

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<sup>16</sup> This is only a first pass. It will need complicating to accommodate temporarily inoperative cars.

instantiating *being a K* adds no information not already encoded in the notion of object employed by the account.

On either horn, the account is at best uninformative, and at worst objectionably circular. Instantiating the property of *being a K* adds no new information beyond what's already encoded in the *K*-involving notion of object employed in the account, whether directly (as on the second horn), or indirectly via the facts in virtue of which the account obtains (as on the first horn).

The argument generalises beyond this particular account of kind-membership. Nothing in the argument turned on mentioning kind-properties in the account of kind-membership; any claim about the object in question would have done in its place. The lesson is this: what it is for an object *o* to belong to a kind *K* cannot be understood as involving, or holding in virtue of, any kind of predicational fact (or complex of facts) involving *o*; for any such facts are either *K*-involving themselves or hold in virtue of *K*-involving facts; both cases induce objectionable circularity. In a certain sense then, kind-membership facts are amongst the most fundamental facts about any given object: they don't hold in virtue of any other facts about the object. Kind-membership is thus unlike ordinary predication. It's not concerned with what the object is like, or the state of the object, or classifications of the object. It's concerned with the appropriate notion of object itself; that is, with the sense in which a thing counts as a thing at all.

Although I find this argument compelling, I sympathise with those who might think it smells fishy. It rests heavily on talk of *K*-involving facts, levels of facts holding in virtue of other levels of facts, and the interaction between determinations of *object* and reference to particular objects. This can all feel slippery, and is difficult to make completely tractable and precise. In order to dispel suspicion, I'll now run essentially the same argument again, but from a somewhat different theoretical perspective.

## Second argument

I've talked a lot about some facts holding in virtue of others, with the latter being more fundamental than the former. One way to make these notions tractable, and to impose some discipline on them, is by employing the following methodology.<sup>17</sup>

Suppose you claim that the *G*-facts hold in virtue of the more fundamental *F*-facts. The methodology dictates that you proceed as follows. You describe two types of representation, one for the *F*-facts and another for the *G*-facts. You make sure that the structures of these representations as closely mirror the structures of the relevant types of fact as you can. Then you specify a mapping from representations of the one type to representations of the other. This mapping represents the "in virtue of" relationship between the two types of fact, capturing the manner in which the more fundamental *F*-facts generate the less fundamental *G*-facts on your view. You have thereby shown, in a systematic and general way, exactly how you take the *G*-facts to emerge from the *F*-facts. Given any *F*-facts representable in your chosen way, the mapping specifies exactly which *G*-facts they give rise to.

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<sup>17</sup> A systematic and illuminating application of this methodology is (Turner, MS). My approach owes much to Turner's work.

To make this more concrete, consider linguistic representations, of the sort employed when formulating metaphysical theories about the nature of reality. The goal will be to describe two types of linguistic representation, two languages, whose structures as closely match those of the *F*-facts and *G*-facts as possible. Different categories of primitive expression will represent different varieties of structure exhibited by those facts. Different primitive expressions from a category will represent different instances of the variety of structure represented by that category. With these two languages in place, the goal will be to specify a mapping from collections of truths in the *F*-language to collections of truths in the *G*-language. The mapping encodes how different collections of *G*-facts describable by the *G*-language emerge from collections of *F*-facts describable by the *F*-language.

We can be more concrete still. According to OD, facts involving the determinable *object* all hold in virtue of facts involving its maximally specific determinations. So we need one language for the determinable, and another for the kinds.

Our determinable language  $L^-$  is an ordinary first-order predicate calculus with identity. Singular terms of  $L^-$  represent particular objects, different terms for different objects. The determinable notion of an object is represented in  $L^-$  by the uniform category of singular terms, comprising a single logico-semantic category.  $L^-$  also contains a special stock of monadic kind-predicates ' $K_1$ ', ' $K_2$ ' etc.. Kind-membership facts are represented by atomic predications featuring these predicates, e.g.: ' $K_1(a)$ '.

What should our determinate language  $L^+$  be like? One option is simply to supplement a first-order language with a privileged stock of kind-predicates. Kind-membership is then represented by predications employing these predicates. Yet this is inadequate in two related respects. Firstly, this language is just  $L^-$  again; so we haven't differentiated the determinable notion of object from its complete determinations. Secondly this language employs the fully general and undifferentiated determinable notion of an object, as represented by the uniform category of singular terms; so it doesn't capture what we want it to.

The second problem suggests that we need to modify the supply of singular terms, since those are what most directly represent particular objects. So we depart from a standard first-order language in two ways. First, we add a stock of privileged kind-predicates ' $K_1$ ', ' $K_2$ ' etc. Second, we use subscripts to syntactically sort the singular terms of the language ' $a_1$ ', ' $a_2$ ', ' $b_1$ ', ' $b_2$ ' etc. The resulting language  $L^{+*}$  is a form of many-sorted language. Different syntactic sortings on terms represent different kinds; different singular terms of a sort represent different objects of the kind represented by that sort. Unlike a standard many-sorted language, we needn't sort the argument positions of  $L^{+*}$ -predicates to restrict wellformedness; for we haven't seen any reason to regard object-determinations as restricting what kinds of facts or truths about an individual there can be.

This language  $L^{+*}$  isn't quite what we want to represent the level of complete determinations of *object*. There is representational redundancy in  $L^{+*}$ : two different kinds of linguistic structure do a single representational job. To see this, consider the predications used in  $L^{+*}$  to say that an object belongs to a given kind, e.g. ' $K_{cat}(a_{cat})$ '. The kind-predicate ' $K_{cat}$ ' is used here to say that a certain object is of the kind *cat*. But that information is already encoded in the syntactic marking on the term ' $a_{cat}$ ' used to refer to the object. (And if it weren't, so that the term was sorted for some other kind, ' $K_{cat}(a_{cat})$ ' would be false.) So

there are two different ways of representing kind-membership in  $L^{+*}$ : kind-predicates and sorting. So there's a mismatch between the structures of  $L^{+*}$  and of the level of complete object-determinations. Two different kinds of linguistic resource in  $L^{+*}$  represent a single aspect of reality's structure. To obtain a language whose structure more closely mirrors that of the facts in question, either the sorting or the kind-predicates must go. Eliminating the sorting leaves a uniform category of terms, out of line with **OD**'s plurality of kinds. So the kind-predicates must go. Call the resulting language  $L^+$ . We now have a language free from representational redundancy: the primitive expressions and categories of expression of  $L^+$  correspond to the various different types of structure reality exhibits at the level of complete object-determinations.

Should we sort the variables of  $L^+$ , as well as its terms? Given that syntactic sorts mark kinds, that would amount to restricting all quantification to a single kind. Although there is no problem of principle with such restricted quantification, we have seen no reason to think that the truths of unrestricted generality hold in virtue of those of kind-restricted generality, or that the members of different kinds exist in different senses (corresponding to the different kind-restricted quantifiers). For all that has been said, the most fundamental forms of generality may be completely unrestricted. It is only the notion of an object, a potential witness for an unrestricted existential quantifier, that advocates of **OD** need regard as determinable. So we don't sort variables in  $L^+$ .<sup>18</sup>

Our two linguistic representations are now in place, the determinable language  $L^-$  and the kind language  $L^+$ . We now have to specify a mapping from collections  $L^+$ -sentences to collections of  $L^-$ -sentences. This represents the way that (potential) states of reality describable from the more fundamental perspective of  $L^+$  ground the corresponding states describable from the less fundamental perspective of  $L^-$ . To do so, I'll say what counts as an interpretation of each language, and a mapping from each interpretation  $I^+$  of  $L^+$  to a corresponding interpretation  $I^-$  of  $L^-$ . The target mapping between collections of sentences is that from the  $L^+$ -sentences true on  $I^+$  to the  $L^-$ -sentences true on  $I^-$ .

An interpretation of  $L^-$  is a standard first-order model: a domain for the quantifiers plus matching assignment of denotations to terms and extensions to predicates. An interpretation of  $L^+$  is similar, with one key exception. Its domain comprises a variety of sub-domains, corresponding to the different kinds of objects. Each sort is associated with a sub-domain. A term's denotation is drawn from the sub-domain associated with its sort. Since different kinds are different complete determinations of *object*, we require that these sub-domains be exclusive. So for different sorts  $i, j$ ,  $L^+$ -sentences of the form  $\lceil t_i = t_j \rceil$  are false on every interpretation. Quantifiers range over the entire union of these sub-domains.

Before we can characterise a mapping from interpretations of  $L^+$  to those of  $L^-$ , we need to say more about the relations between their non-logical vocabularies. Our focus is only on the difference between the determinable and determinate notions of *object*. We

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<sup>18</sup>  $L^+$  is similar to one of the languages that Turner considers using to capture ontological pluralism, the thesis of a plurality of fundamental notions of existence (Turner, 2010, esp. 11–13). The key difference is the interpretations we place on these languages. Turner wants to capture a plurality of notions of existence. I want to capture a plurality of notions of object. Thus Turner uses sorting to restrict quantification, whereas I don't.

have seen no reason for object-determinations to restrict the supply of (potential) facts, or of what properties can meaningfully be attributed to objects. So we can legitimately assume a translation function  $f$  from  $L^-$ -expressions such that:  $f$  one-one correlates the non-kind  $L^-$ -predicates with the  $L^+$ -predicates;  $f$  one-one correlates the kind-predicates of  $L^-$  with sorts of  $L^+$ ;  $f$  one-one correlates the  $L^-$ -terms with  $L^+$ -terms. Note that although there will be many such functions, only one is correct; for our targets are interpreted languages suited to describe particular extra-linguistic facts, rather than just the abstract structure thereof.<sup>19</sup>

An interpretation  $I^-$  of  $L^-$  is obtained from an interpretation  $I^+$  of  $L^+$  by unifying the sub-domains, assigning each as the extension of some kind-predicate. For each kind-predicate  $K_i$  of  $L^-$ , its  $I^-$ -extension is the sub-domain  $I^+$  associates with sort  $f(K_i)$ . For each non-kind  $L^-$ -predicate  $P$ , its  $I^-$ -extension is the  $I^+$ -extension of  $f(P)$ . For each  $L^-$ -term  $t$ , its  $I^-$ -denotation is the  $I^+$ -denotation of  $f(t)$ . The  $L^-$ -sentences true under  $I^-$  represent the determinable-level truths that hold in virtue of the kind-level truths represented by the  $L^+$ -sentences true under  $I^+$ .

We now have two types of linguistic representation. One employs the determinable notion *object*, whereas the other employs the whole panoply of kinds. Given a description of (some portion of) reality in kind-level terms — corresponding to the  $L^+$  sentences true under some interpretation  $I^+$  — we also have an account of exactly which determinable-level truths hold in virtue of it, i.e.: those represented by the  $L^-$ -sentences true under the matching interpretation  $I^-$ . Claims about one level of facts holding in virtue of another should no longer be seen as mere hand-waving. We have precise accounts of just what the structures of those two levels amount to, and of how one depends upon the other. With this to hand, can we find an informative account of what it is for an object  $o$  to belong to a kind  $K$ ? No.

Suppose our account is formulated in  $L^-$ . In line with **OD**, the account is true in virtue of something expressible in  $L^+$ . In  $L^+$ , kind-membership is represented as sorting. So no  $L^+$ -sentence about  $o$  can provide an informative account of what it is for  $o$  to belong to  $K$ . Any such sentence must feature a term for  $o$ . That term will be sorted for  $K$ . So whatever the sentence says, the most it can do is express in other terms the information about kind already represented by the sort of the term for  $o$ . The account adds no new information beyond the sorting of terms. That holds irrespective of what other vocabulary  $L^+$  contains. So the underlying metaphysical basis — which is expressible in  $L^+$  — of the account in  $L^-$  of what it is for  $o$  to belong to  $K$  renders that account at best uninformative, and at worst objectionably circular by virtue of employing the very kind-membership fact (under the guise of sorting on the  $L^+$ -term for  $o$ ) it was supposed to provide an account of.

That was an objection to accounts of kind-membership in  $L^-$ . Giving the account in  $L^+$  clearly changes nothing. Any such account can only restate information already encoded by the sort of the term employed by the account to pick out the relevant object. And so we have our conclusion: kind-membership facts are amongst the most fundamental facts about an individual; they do not hold in virtue of any other facts about that indi-

<sup>19</sup> A more general and complicated approach would require only that each  $L^-$ -predicate is translated (= definable) by some complex predicate/open sentence of  $L^+$ , rather than by some primitive predicate. I adopt the more restrictive approach above to minimise complications unnecessary for the arguments below.

vidual. Maybe there are deeper levels of reality in virtue of which all facts about  $o$  obtain, including kind-membership facts. What we have seen is that the facts in such deeper levels are not facts about  $o$  itself. Suppose, for example, that Tibbles is a cat in virtue of her constituent particles having a certain configuration. According to the argument just given, the underlying metaphysical base here cannot be a fact about Tibbles. So what is it? It must be a fact about certain particles and their configuration, as opposed to a complex fact involving Tibbles, the constitution relation, the particles, and their configuration.

## Ontology, ideology, and kind

We've just seen that the most fundamental facts about an object include its being of a certain kind. Another interesting feature of kind-predication also emerges, differentiating it from other forms of predication.

There are two types of  $L^-$ -predicate: kind-predicates and the rest. There is a significant difference between the metaphysical bases of these different predicates. Those bases are most perspicuously represented in  $L^+$ . When characterising the mapping from  $L^+$ -interpretations  $I^+$  to corresponding  $L^-$ -interpretations  $I^-$ , the  $I^-$ -extension of a non-kind  $L^-$ -predicate was determined by its translation into  $L^+$ . The  $I^-$ -extensions of kind-predicates were not determined in that way. No predicate (whether simple or complex) of  $L^+$  need be coextensive with any kind-predicate of  $L^-$ . Rather, the  $I^-$ -extensions of kind-predicates were settled entirely by the sorting of  $L^+$ -terms.<sup>20</sup> From the more fundamental perspective of  $L^+$  therefore, the  $L^-$ -predicates play two different metaphysical roles. Non-kind  $L^-$ -predicates play the familiar classificatory role, corresponding as they do to  $L^+$ -predicates. The contrasting role of kind-predicates' role is to report on name-sorting/object-determination; their applicability is determined by the array of notions of object, and the corresponding array of sorts, not by further classifications of those objects expressible with predicates in  $L^+$ . Here's how Wiggins puts it:

There is a range of basic sortal attributions that we apply to various everyday things—'this is a horse', 'this is a tree', 'that is a man'. These belong to the level of ontology and, at least to this extent, ontology and ideology must contaminate one another immediately.<sup>21</sup>

On Wiggins' view, these basic sortal attributions mark object-determinations. Wiggins' observation is thus that kind-predicates fall on neither the ontological nor ideological side of the Quinean division between elements of the domain and what can be said of them.

The distinction between these two metaphysical roles is invisible from the perspective of a one-sorted language like  $L^-$ . From that perspective, all predicates play the same logico-semantic role: they pick out a subset of the domain as that to which they apply.

<sup>20</sup> More precisely: the  $I^-$ -extensions of kind-predicates were settled by the  $I^+$ -sub-domains associated with the sorts of  $L^+$ -terms. If we'd insisted that everything in the  $I^+$ -domains be named in  $L^+$ , we could have appealed only to sorts, without going via sub-domains. Since we are doing metaphysics here, using linguistic structures to represent reality's structure, we may legitimately require that everything in the  $I^+$ -domains be named.

<sup>21</sup> (Wiggins, 2001, p147)

Their differential ontological import is thereby obscured. The uniform category of singular terms creates a misleading impression of uniformity where there is great metaphysical variety, disguising the connection between kind-predicates and the plurality of notions of object. It is only from the more fundamental perspective of the many-sorted language  $L^+$  that the relevant distinctions emerge. If one's metaphysical theorising is conducted through the lens of one-sorted predicate calculus, therefore, the distinctions drawn by **OD** will be invisible or, worse, unintelligible. This is an instance of a more general phenomenon: the background linguistic/conceptual framework in which theorising is conducted constrains the views open for consideration. To the extent that the contemporary notion of object has been shaped by the pervasiveness of one-sorted predicate calculus, it will be hard to make coherent sense of **OD**. And to the extent we employ a one-sorted metalanguage for  $L^+$ , that many-sorted language's metaphysical import will be similarly hard to understand. The defender of **OD** will thus maintain that conceptual and theoretical reconfiguration is required here.

The many-sorted language alone does not capture the import of **OD**. Its sorts can always be combined to yield a one-sorted alternative, or interpreted in a one-sorted metalanguage. It is only when the many sorts of  $L^+$  are interpreted as representing the object-determinations of **OD** that their import becomes clear. And by so interpreting those sorts, the content of **OD** is itself brought into sharper focus.

This section put some flesh on **OD** by examining the nature of kind-membership. We saw that **OD** precludes informative analyses of a certain sort, and hence that an object's kind is amongst the most fundamental facts about it. This generated a distinction between the instantiation of ordinary, non-kind properties and kind-membership. That distinction does not admit of perspicuous representation within orthodox, one-sorted predicate calculus, where Quine's distinction between ontology and ideology is rigorously enforced. That distinction, and the consequent unintelligibility of **OD**, is a basic presupposition of theorising within standard, one-sorted predicate calculus. Ordinary predicate calculus does not provide a neutral setting in which to conduct metaphysical debate, and certainly not one amenable to **OD**. The dominance of this way of thinking — formalisation in predicate calculus is one of the first things our undergraduates are taught — and the influence it exerts on contemporary conceptions of objecthood is part of what makes **OD** so difficult to articulate. The tools available with which to do so have been shaped by the framework to which **OD** is opposed. The next section examines one way in which this has influenced recent thinking about *de re* possibility.

### 3 An invidious distinction?

This section uses **OD** to explain restrictions on *de re* possibility, and to diagnose one source of resistance to such restrictions.

W.V.O. Quine was notoriously hostile towards *de re* modality.<sup>22</sup> There were at least two aspects to this hostility. One was hostility towards the intelligibility of an object's necessarily satisfying a condition, independently of how the object is presented or described.

<sup>22</sup> (Quine, 1961), (Quine, 1976). See (Fine, 2005, pp1–7) for discussion.

I will not discuss that here. Another was hostility towards differential necessary satisfaction: why are some properties and not others necessary to an object, and why are different properties necessary to different objects? Quine accused advocates of differential necessary satisfaction of “an invidious attitude toward certain ways of uniquely specifying  $x$ ...as somehow better revealing of the “essence” of the object.”<sup>23</sup> That accusation will be my focus here.

David Lewis also raised this concern. Say that a property  $F$  is *modally essential* to  $x$  when it’s impossible for  $x$  to exist and lack  $F$ :  $\Box(Ex \rightarrow Fx)$ .<sup>24</sup> Lewis complained that the modal essentialist...:

“...says that there are qualitative constraints on haecceitistic difference; there is no world at all...where you are a poached egg. Why not? He owes us some sort of answer, and it may be no easy thing to find a good one. Once you start it’s hard to stop—those theories that provide haecceitistic differences at all do not provide any very good way to limit them....[C]onsider a set of sentences...which says of you, by name, that you are a poached egg. If this set is consistent, it is an ersatz world according to which you are a poached egg. The burden...is to say what makes this set inconsistent.”<sup>25</sup>

Lewis’ immediate target in the closing remarks is the linguistic ersatzist identification of possible worlds with maximal consistent sets of sentences. Yet his point is quite general. Modal essentialists face an explanatory challenge of the form: why is  $F$  but not  $G$  modally essential to  $x$ , whereas  $G$  but not  $F$  is modally essential to  $y$ ? Lewis does not see how this challenge might be met.

A satisfactory response to Quine and Lewis requires an explanation for why some but not all of an object’s properties are modally essential to it, and why different properties are modally essential to different objects.<sup>26</sup> OD can provide such an account. As in the previous section, I’ll run essentially the same argument from two different theoretical perspectives.

## First argument

*De re* possibility is concerned with what’s the case at worlds linked with actuality in a certain way. Whether it’s possible for an object  $o$  to be  $F$  depends on how actuality is linked to the worlds at which there are  $F$ s. It’s possible for  $o$  to be  $F$  iff, for some world  $w$ , one of the things that’s  $F$  at  $w$  is  $o$ ; that is, the things that actually exist are linked to the things that are  $F$  at  $w$  by the single object  $o$ ’s presence amongst each. The objects thus provide links between how reality is according to various worlds, and how reality actually is. Without those links, different worlds would represent counterfactual circumstances involving entirely different things.<sup>27</sup> According to OD, the notion of object that provides these links

<sup>23</sup> (Quine, 1961, p155)

<sup>24</sup> ‘ $E$ ’ is the existence predicate. To exist is to be identical to something, hence:  $\Box\forall x(E(x) \leftrightarrow \exists y(y = x))$ .

<sup>25</sup> (Lewis, 1986)

<sup>26</sup> (Paul, 2006, §1).

<sup>27</sup> I consider counterpart theory shortly.

is classificatorily rich. The fundamental notions of object linking these worlds with actuality are kind-involving ones. Since the notions of object supplying these links are kind-involving, so are the links themselves. Any world at which an object exists is thus a world at which it belongs to its actual kind. So each object's kind is modally essential to it.

I envisage two kinds of objection to this argument.

First objection: counterpart-theoretic semantics for *de re* modality.<sup>28</sup> Counterpart theory associates each object with a representative relative to each world at which it exists. These latter objects represent possibilities for the former, despite not being identical to it. The classificatory content built into a thing's object-determination thus needn't be shared by everything that represents a possibility for it, thereby blocking my argument.

Although this objection is correct, it doesn't eliminate my argument's interest. That argument shows that **OD** combines with standard, non-counterpart-theoretic modal semantics to induce non-trivial restrictions on *de re* possibility. It's only under a non-standard and controversial interpretation of *de re* modal discourse that the argument doesn't go through.

Second objection: the fundamental modal notions are necessity and possibility, not the language of world-relativisation on which my argument rests; and it's unclear how to adapt my argument to this alternative setting. I am sympathetic to the thought that the language of worlds is less fundamental than other, more familiar modal notions. Below, I present a version of this argument that applies to these other idioms too.

The argument from **OD** to non-trivial restrictions on *de re* possibility is now in place. As with the previous section's first argument, it rests on the interaction between vocabulary that might feel slippery or otherwise suspicious: worlds, links between worlds, and object-determinations. To eliminate these suspicions, I'll run essentially the same argument from the methodological perspective of the previous section's second argument.

## Second argument

In virtue of what are modal truths true? I now examine three candidate answers to this question. In line with the previous section's methodology, I focus on linguistic representations corresponding to these answers.

We first need to supplement one of our languages to express *de re* modality. Since true sentences of the determinate language are true in virtue of facts expressible in the determinate language, I'll focus on the latter. Let  $L^{+\diamond}$  be the result of enriching  $L^+$  with the ' $\diamond$ ' of metaphysical possibility. In virtue of what are  $L^{+\diamond}$ -sentences of the form  $\ulcorner \diamond A \urcorner$  true? I now consider three kinds of answer to this question.

First answer: possibility-facts don't obtain in virtue of any more fundamental possibility-free base; possibility belongs to reality's metaphysical bedrock. Call this view *fundamental modalism*. On this attractive view, the most fundamental account of what makes a modal sentence of  $L^{+\diamond}$  true will be what's expressed by that sentence itself.<sup>29</sup> So consider an

<sup>28</sup> See (Lewis, 1968), (Lewis, 1986), and (Stalnaker, 1986) for discussion.

<sup>29</sup> A complication: plausibly, it's possible for there to be a cat in virtue of it being possible for there to be cat-wise configured particles. The scope of the claim in the text needs restricting to  $L^{+\diamond}$ -sentences containing only absolutely fundamental vocabulary. Since our focus is modal truths about particular objects, we can treat all vocabulary of  $L^{+\diamond}$  as absolutely fundamental for the purposes of the present discussion.

example:  $\diamond F(a_{cat})$ . What does this sentence express? The answer follows from two observations:

- (1) Term-sorting represents object-determination: one says that an object belongs to a kind by using a term for the object that's sorted for that kind.
- (2) The material within the scope of ' $\diamond$ ' expresses what is the case from some counterfactual perspective. So if  $A$  express that  $P$ , then  $\ulcorner \diamond A \urcorner$  says that this could possibly have been the case:  $P$ .

(1) and (2) imply that ' $\diamond F(a_{cat})$ ' says that the following could possibly have been the case: a certain cat is  $F$ . More generally: any possibility for this object expressible using ' $a_{cat}$ ' (or any other name sorted for  $cat$ ) is a possibility at which it's a cat. Possibilities at which this object isn't a cat are expressible in  $L^{+\diamond}$  only by using terms sorted for other kinds. Since kinds are complete object-determinations, and hence mutually incompatible, no such term is co-referential with ' $a_{cat}$ ':  $\ulcorner t_i = t_j \urcorner$  is false whenever  $i \neq j$ .<sup>30</sup> Generalising: possibilities at which an object doesn't fall under its actual kind are in principle inexpressible in  $L^{+\diamond}$ . So either: (a) there are no such possibilities; or (b) there are but they're inexpressible in  $L^{+\diamond}$ . The same argument shows that such possibilities are inexpressible in all extensions of  $L^{+\diamond}$  that represent kinds by sorting terms. Since that's how we're representing kinds, we should reject (b). The linguistic structure of sorting in  $L^{+\diamond}$  is supposed to capture the underlying metaphysical structure of kind-membership. To admit possibilities about kind-membership that are in principle inexpressible in  $L^{+\diamond}$  — and in any other language that represents kind-membership in the same way — is to admit that it is unsuited for this task: that style of representation is inadequate because it's unable to capture the interaction between kinds and modality. Assuming that this style of representation accurately captures reality's structure according to OD, defenders of OD should conclude that nothing could possibly belong to a kind other than its actual one: each object's kind is modally essential to it.

The only response I can see is to reject (1) in favour of a different account of the representational role of sorts. Rather than taking sorting to represent kind *simpliciter*, we might instead endorse:

- (1\*) Term-sorting represents *actual* object-determination: one says that an object actually belongs to a kind by using a term for the object that's sorted for that kind.

(1\*) and (2) imply that ' $\diamond F(a_{cat})$ ' says that the following could possibly have been the case: a certain actual cat is  $F$ . By the same reasoning as before: every possibility for this object expressible in  $L^{+\diamond}$  is one at which it's actually a cat. Yet even if those exhaust the possibilities for the object, that's consistent with it possibly failing to be a cat.

As this alternative approach currently stands,  $L^{+\diamond}$  suffers an expressive deficit. It cannot express what kinds an object could possibly belong to. It can represent only a thing's actual kind. A fully adequate account of the interaction between modality and kind requires elimination of this deficit. How should this be achieved?

<sup>30</sup> As was argued in the previous section.

The only option I see is to supplement  $L^{+\diamond}$  with kind-predicates. One then says what kinds an object could possibly have belonged to by concatenating the appropriate kind-predicates with a term for the object within the scope of ‘ $\diamond$ ’. And one says that an object could have belonged to a kind other than its actual one with a sentence like ‘ $\diamond K_{dog}(a_{cat})$ ’.<sup>31</sup>

Defenders of OD should reject this approach. It uses different linguistic resources to represent actual and possible membership of a kind. Actual kind-membership is represented by sorting terms. Possible kind-membership is represented by certain (modalised) predications. On the approach pursued here, different types of linguistic resource represent different aspects of reality’s structure. So actual and possible kind-membership are represented as involving different aspects of reality’s structure. Suppose  $o$  isn’t actually a  $K$ , although it could possibly have been. Consider the counterfactual fact of  $o$ ’s being a  $K$ . On the present approach, this counterfactual fact is of a fundamentally different sort from the actual fact of  $o$ ’s being a  $K^*$ . Whereas actual kind-membership modifies the appropriate notion of object, merely possible kind-membership modifies merely the way an object (possibly) is, leaving the underlying notion of *object* intact. It is therefore unclear in what sense these could count as forms of the same phenomenon considered from different (actual and counterfactual) perspectives. So (1\*) should be rejected. My argument from OD to restrictions on *de re* possibility stands.

In sum, the point is this. Sorting of terms is a relatively spartan and inflexible linguistic structure, with limited scope for interaction with modal operators. By representing kinds in this way, we represent kinds as exhibiting a similarly spartan and inflexible structure, capable of interacting with modality in similarly limited ways. Restrictions on how sorts can interact with modal operators yield restrictions on how kinds interact with possibility. The resulting representation of kinds is as modally essential to their members.

That argument turned on fundamental modalism: modal facts needn’t obtain in virtue of any deeper, non-modal facts. A different approach grounds the truths of possibility and necessity in the truths about worlds. We can run essentially the same argument on the following version of this view.

Let  $L^{+w}$  be the result of extending  $L^+$  with: (i) a privileged stock of world-variables ‘ $w_i$ ’; (ii) an operator ‘ $\text{At } \dots : \dots$ ’ which takes world-variables in its first argument position and sentences in its second, to yield a sentence. Sentences of  $L^{+w}$  will represent that in virtue of which sentences of  $L^{+\diamond}$  are true (if true). In particular, true  $L^{+\diamond}$ -sentences of the form ‘ $\diamond A$ ’ are true in virtue of what the corresponding  $L^{+w}$ -sentence ‘ $\exists w(\text{At } w : A)$ ’ represents.<sup>32</sup>

Consider the  $L^{+\diamond}$ -sentence ‘ $\diamond F(a_{cat})$ ’. If this is true, it’s true in virtue of what this  $L^{+w}$ -sentence expresses: ‘ $\exists w(\text{At } w : F(a_{cat}))$ ’. What does that sentence express? The answer follows from:

- (1) Term-sorting represents object-determination: one says that an object belongs to a kind by using a term for the object that’s sorted for that kind.

<sup>31</sup> Assumption: *dog* and *cat* are different kinds.

<sup>32</sup> More carefully, we use the following clauses to recursively define a mapping  $*$  from  $L^{+\diamond}$ -formulae to  $L^{+w}$ -formulae: for atomic  $A$ ,  $A^* = A$ ;  $(A \wedge B)^* = (A^* \wedge B^*)$ ;  $(\neg A)^* = \neg(A^*)$ ;  $(\diamond A)^* = \exists w(\text{At } w : (A^*))$ .  $A^*$  expresses that in virtue of which  $A$  is true (if it is true). Note that the claim in the text holds only when  $A$  contains no modal operators.

(2w) The material within the scope of  $\ulcorner \text{At } w : A \urcorner$  expresses what is the case from the (typically counterfactual) perspective of world  $w$ . So if  $A$  express that  $P$ , then  $\ulcorner \text{At } w : A \urcorner$  says that this is the case from  $w$ 's perspective:  $P$ .

(1) and (2w) imply that  $\exists w(\text{At } w : F(a_{cat}))$  says that there is a world from whose perspective the following is the case: a certain cat is  $F$ .<sup>33</sup> If being  $F$  is incompatible with being a cat, there will be no such worlds. Generalising: at no world expressible in  $L^{+w}$  does any object's kind differ from its actual kind. So if an object could possibly have failed to belong to its actual kind, that in virtue of which this is so is inexpressible in  $L^{+w}$ .<sup>34</sup> So either: (a) it's not possible for things to fail to belong to their actual kind; or (b) although that's possible, that in virtue of which it's possible isn't expressible in  $L^{+w}$ . We should reject (b) for the same reasons as before. To admit modal truths whose metaphysical basis is inexpressible in  $L^{+w}$  is to admit that  $L^{+w}$  is unsuited to represent the interaction between worlds and kinds. Assuming that this style of representation accurately captures reality's structure according to **OD**, defenders of **OD** should conclude that nothing could possibly fail to belong to its actual kind: each object's kind is modally essential to it.

What these arguments suggest is that, if we are to allow modal variation in kind, our account of that in virtue of which modal claims about an object are true need not employ terms for that object's actual kind. But the only  $L^{+w}$ -terms for an object are sorted for its actual kind. So we will have to avoid using terms for the object at all. The most straightforward way to implement this is via a version of counterpart theory.<sup>35</sup> We associate each object with a representative relative to each world at which it exists. Truths of *de re* possibility for an individual hold in virtue of world-relative truths about its representatives. This licenses rejection of (2w), undermining the argument from **OD** to the modal essentiality of kind. I won't consider exactly how to reformulate (2w) here.

## Back to Quine and Lewis

We've now seen how **OD** combines with three views about the metaphysics of modality. In particular, we saw that it combines with both a non-reductive and a world-based modal metaphysics to yield non-trivial restrictions on *de re* possibility. We also saw how a counterpart-theoretic approach to *de re* possibility undermines those arguments. Defenders of **OD** who reject counterpart theory can use this to respond to Quine and Lewis. The structure of objecthood itself induces non-trivial restrictions on *de re* possibility.

Note the limitations of this argumentative strategy. It can show only that an object's kind, and any properties entailed by that kind, are modally essential to the object. The argument is neutral about the modal status of all other properties. Maybe there are no other sources of non-trivial restrictions on modal profile; in which case, only kinds and the properties they entail are modally essential to their bearers. That explains why some but not all of an object's properties are modally essential to it. And since different objects are of different kinds, different objects will have different modally essential features too. We have thereby addressed Quine's and Lewis' two explanatory challenges.

<sup>33</sup> I assume an appropriate interpretation of the existential quantifier.

<sup>34</sup> I ignore complications involving contingent existence for simplicity.

<sup>35</sup> See note 28 for details.

One might respond by attempting to relocate the explanatory challenges to the level of kinds. One might grant that kinds restrict *de re* possibility, and yet require further accounts of why (a) some of an object's properties are aspects of its kind whereas others are not, and (b) different objects belong to different kinds. Three responses are available. Firstly, kind-membership was not explicated in modal terms; it is a non-modal phenomenon that interacts with modality in interesting ways. Insofar as Quine's challenge was directed specifically at the *de re* modal, it is therefore addressed by appeal to kinds. Moreover, it is unlikely that other Quinean motivations for hostility towards the *de re* modal will extend to kind-membership. For example, the argument positions of kind-predicates are not non-transparent contexts of the sort to which Quine objected. Under OD, structural features of objecthood itself provide an extensional mechanism for constraining the intensional. Secondly, the appropriate analogue of the Quinean challenge is a demand to explain why an object belongs to the kind that it does, and why different objects belong to different kinds. But according to OD, a thing's kind provides the sense in which it even counts as an object, and there is no more fundamental level of facts about the thing. From OD's perspective, the kind-focussed analogue of Quine's challenge is therefore illegitimate: it arises only within a theoretical framework that defenders of OD have already rejected. Thirdly, if the new challenge is motivated by epistemic concerns, we can ignore it here. How can we know what kind a thing belongs to, or what kinds of thing there are? Those are important questions. But my concern is metaphysical, not epistemic. The goal is to show how structural features of objecthood can induce non-trivial restrictions on *de re* possibility; the goal is not to explain how we can know the details of that structure's actual realization. That must be settled in the same way as any other theoretical matter: by evaluating overall theoretical packages. I obviously cannot do so here. In sum, Quinean hostility towards non-trivial restrictions on *de re* modality is not readily redirected towards kind-membership.

OD explains why some but not all of an object's properties are modally essential to it, and why different properties are modally essential to different objects. This answers Quine's and Lewis' challenges. It also highlights how one's choice of theoretical framework can influence one's metaphysical outlook. We have already seen that standard predicate calculus does not perspicuously represent the distinctions between object-determinations at the heart of OD, assimilating them to predicative/classificatory differences (§2). This obscures the distinctive connection between kind-predicates and objecthood, by enforcing the absolute dichotomy of ontology and ideology that defenders of OD should reject. That rejection is, in effect, what underwrites the above arguments for the modal essentiality of kind. Individuals satisfy certain classificatory apparatus at every world where they exist because the plurality of fundamental notions of objecthood are, from the perspective of one-sorted predicate calculus, classificatorily rich. This basis for modal essentiality will be invisible to those who regard one-sorted predicate calculus as the canonical framework for the construction and evaluation of theories. Since that was exactly Quine's view, his hostility towards modal essentialism is unsurprising. But we need not follow Quine here. There is no reason to expect that all metaphysically significant distinctions should admit of perspicuous representation within that sort of system.

## 4 Non-modal essence

This section uses **OD** to explicate a non-modal conception of essence.

Modal essentialism is not the only form of essentialism. There are also non-modal forms of essentialism deriving from Aristotle. Michael J. Loux and others have argued that Aristotle's discussion of essence was not concerned with modal essence.<sup>36</sup> On this interpretation, Aristotle was concerned with a special form of essential instantiation or predication. Essential instantiation plausibly induces restrictions on *de re* possibility, though without being reducible to it. However, essential instantiation is, in principle at least, just one source of modal essentiality: there is no obvious reason why modally essential properties should all be instantiated in Aristotle's special way. In this non-modal sense, the essence of an object *o* is glossed as what *o* is, or alternatively, what it is to be *o*. The putative contrast here is with what *o* is like, or the way that *o* is. I will reserve "essence" for non-modal Aristotelian essence henceforth, distinguishing it from modal essence.

One might doubt whether modal essence really should be distinguished from essence proper. Maybe that distinction is surplus to requirements. Where Aristotle distinguished two kinds of instantiation, one might seek instead simply to distinguish an object's modally essential properties from its contingent ones. This view aims to combine one form of instantiation with *de re* modality to capture the distinction Aristotle drew with two forms of instantiation. An influential argument of Kit Fine's purports to show that this project is misguided.<sup>37</sup>

Fine argues that modal essence outstrips essence proper. The central example involves Socrates and his singleton, {Socrates}. Fine first assumes that being a member of {Socrates} is not essential to Socrates. He then observes that the analogous claim about modal essence is incompatible with standard views about the modal profiles of sets. Given those views about sets, it follows that modal essentiality does not imply essentiality.

To see why standard views about sets imply that it's modally essential to Socrates that he belong to {Socrates}, suppose otherwise. Then there's a world *w* at which Socrates exists without belonging to {Socrates}. There are two cases. First case: {Socrates} exists at *w*. So Socrates isn't a member of {Socrates} at *w*, even though both exist at *w*. That conflicts with the rigidity of membership: if *x* belongs to *a* at some world, then *x* belongs to *a* at every world at which *a* exists.<sup>38</sup> Second case: {Socrates} doesn't exist at *w*. That conflicts with the existence conditions for sets: if the members of *a* at some world at which *a* exists all exist at another, then so does *a*; no more than the existence of its sole actual member, Socrates, is required for the existence of {Socrates}. So orthodox views about the modal profiles of sets render membership of {Socrates} modally essential to Socrates. Given Fine's assumption that membership of {Socrates} is not essential to Socrates, it follows that modal essentiality does not imply essentiality. That blocks one simple reduction of essence to modality, by identifying it with modal essentiality. Fine goes on to argue that no more complex reduction avoids the problem, and hence that essence cannot be reduced to modality.

Before we can evaluate Fine's argument, we need to ask: what cannot be reduced

<sup>36</sup> See (Loux, 1991, ch4) and references therein.

<sup>37</sup> (Fine, 1994). An interesting recent discussion is (Wildman, 2013).

<sup>38</sup> Strictly, this weaker principle will do: if *x* belongs to *a* at some world, then *x* belongs to *a* at every world at which *x* and *a* both exist.

to modal essence? To see the difficulty, consider Fine's central assumption: belonging to {Socrates} is not essential to Socrates. Socrates' essence is supposed to capture what Socrates is. So a member of {Socrates} is not (even part of) what Socrates is. But Socrates certainly is a member of {Socrates}. So although he's a member of {Socrates}, that's not what he is. Why not? Why does belonging to {Socrates} concern only what Socrates is like, rather than what he is? What differentiates this modally essential feature of Socrates from his essence proper? Since essentiality implies modal essentiality, Fine is committed to a distinction within Socrates' modally essential properties. On one side lie his merely modally essential properties. On the other lie Socrates' essential properties proper. What does this distinction amount to? Why should we care about it? What justifies Fine's claim that belonging to {Socrates} falls on one side, rather than the other? Absent more information about the content of Fine's target notion of essence, it is not clear how to set about answering these questions.

These doubts about Fine's example illustrate the obscurity of Aristotelian essence more generally. It is unclear what differentiates a thing's essential properties from its other properties, including its other modally essential properties. Suppose we disagree over whether Socrates is essentially human. I say that a human is what Socrates is. You say that a human is what Socrates is like, not what he is. We agree about everything else, including that Socrates couldn't exist without being a human. We disagree only about whether he instantiates *human* in the special essential way. Absent further guidance about what this special form of instantiation amounts to, it is hard to see this dispute as substantive.

A natural place to look for such guidance is where Fine introduces his target notion of essence. As we will see, however, this leads round in circles.<sup>39</sup>

[O]ne of the central concerns of metaphysics is with the identity of things, with what they are....[W]hat appears to distinguish the intended properties is that they are essential to their bearers.<sup>40</sup>

[T]he notion of essence which is of central importance to the metaphysics of identity is not to be understood in modal terms.<sup>41</sup>

Both passages connect essence with identity. This is puzzling. Essence is a classificatory matter; it concerns the properties of things. Identity is not normally regarded as a classificatory matter. Questions about identity concern *which* individual a thing is, not *what* it is. Moreover, identity is a relation. Insofar as the monadic locution 'the identity of  $x$ ' makes any sense at all, it simply denotes  $x$ , or maybe the complex relational property  $\lambda y[y = x]$ . Fine thus appears to be using 'identity' in a non-standard way. E.J. Lowe follows him here, claiming that there are two notions of identity.<sup>42</sup> One concerns essence. The other concerns the identity relation. Maybe so. Since this non-standard notion of identity is simply another name for essence, however, the connection between essence and identity is unilluminating. A more satisfying approach would offer an informative connection between identity proper (the relation) and the properties that constitute a thing's essence.

<sup>39</sup> Not that Fine claims otherwise.

<sup>40</sup> (Fine, 1994, p1)

<sup>41</sup> (Fine, 1994, p3)

<sup>42</sup> (Lowe, 2008, §2)

Fine also connects essence with definition:

[T]he traditional assimilation of essence to definition is better suited [than modal essentiality] to the task of explaining what essence is. It may not provide us with an analysis of the concept, but it does provide a good model of how the concept works.<sup>43</sup>

[E]ssence as a form of definition. Under this alternative conception, each item would give rise to its own sphere of truths, the truths that had their source in the identity of the object in question. Thus the proper expression of the claim that  $x$  essentially  $\varphi$ 's would...[be] that it is true in virtue of the identity of  $x$  that it  $\varphi$ 's, or that it  $\varphi$ 's if  $x$  exists.<sup>44</sup>

Again, Fine connects essence with identity, now offering identity as the source of a rich body of essential truths. These truths comprise a definition of the object in question. Again, however, this is unilluminating. Definitions as standardly conceived concern words, not objects. Or, because words are objects, a better formulation would be: definitions explicate the semantic properties of objects. Since most objects, Socrates included, lack semantic content, they lack definitions in this sense. So a non-standard notion of definition is needed, to match Fine's non-standard notion of identity. Given a notion of essence, we could introduce a notion of definition whose purpose was to capture a thing's essence. And given an appropriate notion of definition, we could introduce a notion of essence as that which such definitions capture. Until we understand one or the other, however, no progress can be made.

Appeals to definition and identity are uninformative as to the content of Fine's target notion of essence. They do not help us to understand what it is that he thinks cannot be reduced to modality, or provide any insight into the motivation for his argument's key premiss, i.e. that membership of {Socrates} is not essential to Socrates. The possibility remains that essence cannot be further analysed; it is to be understood in its own terms, or not at all. Analysis has to finish somewhere. But I doubt that it should finish here. Non-modal essence is too rarefied a theoretical construct to provide a secure foundation on which to base our metaphysical theorising. Luckily, we can do better. We can use **OD** to explicate non-modal essence without requiring a prior grip on what essence is. I do not claim that this captures Fine's intention. I claim only that this is one way of articulating a notion with the features Fine requires, and which is intelligible to the uninitiated.

My suggestion is that essence goes with object-determination. To explicate a thing's essence is to locate it within the space of object-determinations, to say what kind of object it is and hence in what sense it even counts as an object. This explains why essence requires a special variety of instantiation. As we saw earlier, **OD** induces a distinction between the metaphysical bases of ordinary predication and kind-predication. To belong to a kind is not to instantiate a kind-property because the fundamental notions of object are themselves kind-involving. **OD** thereby generates a distinction between instantiating a property and belonging to a kind. Although both are represented by predications in  $L^-$ ,

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<sup>43</sup> (Fine, 1994, p3)

<sup>44</sup> (Fine, 1995, p273)

the more fundamental perspective of  $L^+$  uses quite different linguistic resources to represent their underlying metaphysical structures. The proposed connection between essence and object-determination thus explains why essence differs from ordinary instantiation, rather than being analysable as modal essence.

This proposal also explains the connection between essence and identity. If  $x$  and  $y$  are identical, then “they” are one and the same object. The defender of **OD** will ask: one and the same what? Since the fundamental notions of *object* are the kinds, each identity-fact presupposes a kind-membership fact. This is what the question is after. According to **OD**, the most fundamental specification of which object something is is a specification of which cat, or which dog, or which number,...the thing is. **OD** thus generates a connection between identity—which object  $x$  is—and classification into kinds. Identifying essence with object-determination thus connects essential classification—what  $x$  is—with identity, as Fine contends. Moreover, this also explains the appropriateness of Fine’s locution ‘truth in virtue of the identity of  $x$ ’; for truths concerning an object’s kind hold simply in virtue of which cat, or dog, or proposition, or...it is (identical to in the ordinary relational sense); they explicate the kind to which it belongs, and thereby the sense in which it’s an object.

Similarly, a definition of an object may be understood as an account of its kind. To define  $x$  is to say what kind of thing  $x$  is. This differentiates a definition of  $x$  from any other true description of  $x$ .

Here is an objection. According to Fine, sets have different essences whenever they have different members. Since no two sets have the same members, no two sets have the same essence. So how can essence go with kind in the manner I suggest? All sets belong to the kind *set*; so Finean essence is more fine-grained than kind.

Were my goal to use Wiggins’ own view about objecthood to explicate Fine’s, this would indeed be a problem. For Wiggins connects object-determinations with substance sortals, and all sets fall under the substance sortal *set*.<sup>45</sup> However, that is not my goal. Wiggins’ connection between substance sortals and object-determinations is non-trivial. Defenders of **OD** do not have to endorse it; they can admit more fine-grained distinctions between object-determinations than Wiggins would countenance. We may therefore see Fine as endorsing a very fine-grained view about object-determinations in the realm of sets: each falls under its own kind. Maybe the ordinary notion of kind is not appropriately applied to these non-shareable object-determinations. But that is irrelevant here; for I am using “kind” in a technical sense to mark maximally specific object-determinations. Note also that these non-shareable kinds all determine the shareable (and determinable) object-determination *set*. We may therefore see them as ways of being sets: by having only Socrates as a member, by having only Socrates and Plato as members, .... This is consistent with a more coarse-grained view of kind-individuation elsewhere. Defenders of **OD** are not committed to non-shareable kinds for, say, ordinary concreta.

On a more speculative note, the non-shareability of each set’s kind might be viewed as a consequence, or even explication, of the ontologically “lightweight” and “insubstantial” nature of sets. On the present proposal, the notion of *object* appropriate to sets is so thin

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<sup>45</sup> Sortal  $S$  is a substance sortal iff, necessarily, for any object  $x$ , if  $x$  ever falls under  $S$ , then  $x$  falls under  $S$  whenever  $x$  exists.

as to bend and flex in tandem with their members. A set is individuated by, or generated from, its members in so robust a manner that the very sense in which it's an object depends on its membership. The relation between a set and its members is thus unlike, and much more intimate than, that between ordinary composite objects and their microphysical constituents.

We have seen that **OD** allows us to explicate three central aspects of non-modal essence: (1) the distinction between essential and non-essential instantiation; (2) the connection between essence and identity; (3) real definition. Given the argument of §3, we can also explain why essence restricts *de re* possibility. We thereby reveal these as interrelated components of a unified metaphysical picture, rather than merely historically associated theses. We also thereby provide some guidance about the intrinsic content of Aristotelian essence and essential predication. This should be enough to commend **OD** to those sympathetic to a broadly Aristotelian metaphysic.

## 5 Concluding remarks

I have been articulating a heterodox conception of objecthood that arises from exporting determinate/determinable structure from the theory of properties to the notion of an object itself (§1). On this view, the fundamental notions of *object* are all kind-involving, and hence classificatorily rich (§2). This undermines the Quinean dichotomy of ontology and ideology, exposing the metaphysical presuppositions behind treating standard predicate calculus as background framework in which all theorising is conducted: even first-order logic is not metaphysically neutral. This allowed me to diagnose and respond to Quine's and Lewis' hostility towards non-trivial restrictions on *de re* possibility (§3). Finally, Aristotle's non-modal notion of essence and Fine's recent revival of it were both examined (§4). Although the import of those notions was initially obscure, **OD** was used to provide them with content. Irrespective of one's attitude towards **OD**, the overall lesson is clear. We cannot hope to settle matters of essence, identity and *de re* modality without examining the underlying notion of objecthood itself, and the conceptual presuppositions of the theoretical frameworks in which first-order metaphysics is couched along with it.

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