<div align="center">

8

Naturalness, Arbitrariness, and Serious Ontology

A.R.J. Fisher

</div>

1. Introduction

David Lewis is typically interpreted as a class nominalist. According to this ontology, there are individuals and classes. Properties are classes or sets of actual and possible individuals, where an individual is an entity that is and can be a member of a class but is not a class. Relations are classes of n-tuples of actual and possible individuals (Lewis 1983a: 344). Each two-place relation is a class of ordered pairs of individuals. So, for instance, the father-daughter relation is the class of $\langle dad_1, daughter_1 \rangle$, $\langle dad_2, daughter_2 \rangle$, … $\langle dad_n, daughter_n \rangle$. Relations are really properties of n-tuples. The word 'property' picks out any arbitrary class of individuals. The word 'relation' picks out any arbitrary class of n-tuples of individuals in a similar, indiscriminate manner. Hereafter I talk mostly of ordered pairs but I intend to cover all n-tuples (triples, quadruples, etc.).

In 'New Work for a Theory of Universals' (1983a), Lewis adopted an influential distinction between natural and non-natural properties, thus breaking from his tacit commitment to property-egalitarianism.[1] The natural/non-natural distinction can be understood in at least three ways:

a) take the distinction as primitive: the predicate '… is perfectly natural' primitively applies to some classes and not others.

b) analyse the distinction in terms of universals: a perfectly natural class is one whose members instantiate the same universal.

c) analyse the distinction in terms of tropes: a perfectly natural class has duplicate tropes as members.

---

[1] Naturalness can be said to come in degrees. Lewis thinks this supposition is 'preferable' (Lewis 1983a: 347). I set it aside for convenience, focusing on perfectly natural properties and the division between perfectly natural and non-natural properties.

According to (a), it is a brute fact that these classes are natural and not those classes. The fact is not explained in terms of features about the members of classes or facts about the nature of the members themselves. Natural classes are natural properties and natural relations. If we adopt either (b) or (c), the *extra* ontology guarantees a correspondence between perfectly natural properties and universals or tropes. For each perfectly natural property *N* there is some corresponding universal *U* or trope *T*. If (b) is right, a natural class is a class whose members share a universal. If (c) is right, the members are some plurality of exactly resembling tropes.

For options (b) and (c) the extra ontology does not replace classes. The ontology on offer continues to contain classes and individuals, and on top of that we posit either universals or tropes. There are further choice-points for both (b) and (c). On (b), universals may well be considered one kind of individual, if we understand any individual to be something that is a member of a class and is not a class (as Lewis does). But, of course, this does not negate the fact that they are repeatables. The individuals, on (c), just are tropes; a concrete individual would be a bundle of tropes. I leave these details to one side.

Option (a) is the less bold and less ambitious choice. It stops the explanation of the nature of natural classes short. But from Lewis's perspective it is the theoretically conservative position, given the extant commitment to classes. Despite the predilection for (a), he was agnostic towards these options (Lewis 1986c: 84). But he breaks from his agnosticism in various places, either explicitly, when he expresses a dislike for (b) in 'Against Structural Universals' (Lewis 1986a), or implicitly, as I will show below.

One of the problems with Lewis's class nominalism, as with most versions of class nominalism, concerns the ontic status of relations. A two-place relation is a class of ordered pairs of individuals. D.M. Armstrong (1986) and Peter Forrest (1986) objected that Lewis must reductively identify ordered pairs with sets, but since there are multiple ways to achieve such a reductive identification, Lewis is committed to the view that the ontic status of relations is conventional and arbitrary. Call this *the argument from arbitrariness*.

Armstrong and Forrest go one step further by arguing that to do serious ontology you should avoid doing ontology by convention. Since some of Lewis's ontology is

conventional, he is not ontologically serious. As a friend of realism in the general sense, which is typically accompanied with the view that ontological questions are not conventional, Lewis should not accept this consequence. But, surprisingly, he embraces this conclusion. Who would have thought that Lewis, of all metaphysicians, was not ontologically serious?! Of course, Lewis's response is more nuanced than a blanket dismissal of serious ontology. He is ontologically serious about concrete individuals, including possible individuals and worlds, as well as classes. What is philosophically interesting is the sense in which he is entitled to be ontologically serious and to what extent indeterminacy and conventionality are integral parts of his metaphysics and his approach to philosophy, and whether this package deal is an attractive position to hold.

An examination of this topic has implications for understanding the history of analytic philosophy as well. Lewis is widely seen as a major figure in the revival of metaphysics, alongside philosophers like Armstrong. However, the fact that Lewis and Armstrong's approaches to metaphysics differ in significant ways is glossed over and their debate about serious ontology is a good place to highlight some of these key differences.[2] The dispute over serious ontology epitomizes the division between Armstrong and Lewis's conception of metaphysics. An exploration of this division allows us to situate Lewis in the history of analytic philosophy properly.

In what follows, I evaluate the debate Lewis had with Armstrong and Forrest about the argument from arbitrariness, with a focus on the question of serious ontology. I identify and classify differing kinds of ontological seriousness and show that Lewis holds what I call a moderate kind of ontological seriousness, which sits between Armstrong and Forrest's extreme realist version and Robert Stalnaker's pragmatist quietism (the latter, strictly speaking, occupies the opposite end of the serious ontology spectrum and so is a denial of ontological seriousness altogether). I argue, however, that Lewis's moderate ontological seriousness entails a break from agnosticism about naturalness in favour of some extra ontology with which to ground the naturalness of natural classes. Since Lewis is averse to universals for a variety of reasons, he is left with a trope-theoretic analysis of

---

[2] According to Amie Thomasson's account of the history of analytic metaphysics, Armstrong and Lewis both did serious metaphysics and rejected the primary importance of conceptual analysis (Thomasson 2012: 22).

naturalness. I show that this conclusion is supported by remarks he makes in his correspondence, thus revealing how his thinking about properties appears to have evolved from property-egalitarianism to a sparse theory of tropes. The larger aim of the chapter is to reveal what sort of metaphysician Lewis really is and how his conception of ontology differs from Armstrong's, as well as to determine how much of his response to the argument from arbitrariness depends on other doctrines in his system.

2. The Argument from Arbitrariness

Let us review the argument from arbitrariness as it played out in the literature. This will give us a better sense of the debate and the choice-points our interlocutors take. Recall that two-place relations are classes of ordered pairs. But what are ordered pairs? Forrest poses a dilemma. First horn: ordered pairs are primitive. Second horn: ordered pairs are reductively identified with sets. Lewis cannot take ordered pairs as primitive, for if he did he would commit himself to an unmereological mode of composition, which he denounced in his critique of structural universals (Lewis 1986a; for a survey of structural universals, see Fisher 2018b; for discussion, see Bennett 2013; Hawley 2010). So he must take the second horn. Alas, there are multiple ways to reductively identify ordered pairs with sets. Forrest continues:

> … it is a convention, not a discovery, that ⟨a, b⟩ is to be identified with {a, {a, b}} rather than, say, {{a, Ø}, {a, b}}, and serious ontology is not done by convention. (Forrest 1986: 91)

The objection so far has nothing to do with naturalness. The reduction of ordered pairs to sets is an account of what an ordered pair is. This account is one ingredient in Lewis's account of what a relation is. So the context of the dilemma is about the nature of the category of *relation*, or equivalently, the nature of relations. Forrest's second premise (i.e. the second conjunct of the quotation above) should be interpreted as implying that in serious ontology the answer to a question about the nature of an entity should not have anything conventional lurking at the bottom. An ontological question such as 'what is the

nature of X?' should not depend on convention. This is why the arbitrary convention of identifying ordered pairs is problematic. Lewis is effectively saying that the nature of relations has no determinate answer. As Forrest says:

> Lewis avoids this difficulty by denying that which sets deserve the name of 'ordered pairs' is a piece of serious ontology. As a consequence it cannot be a matter for serious ontology precisely what a relation is. I find this implausible.[3] (Forrest 1986: 91, n. 7)

The thought, then, is that Lewis is committed to *categorial indeterminacy*. In particular, he is committed to it as regards relations or, better, the category of *relation*. That is, it is indeterminate whether or not this kind of entity constitutes the category of *relation*. In contrast, Forrest thinks it *is* a piece of serious ontology what deserves the name 'ordered pair' and 'relation'. The objection gains traction when we consider relations in competing ontologies. Take, for instance, a universals theory. If there are universals, it would be odd for the friend of universals to say which universals deserve to be called 'relations' is a matter of convention and not a matter of fact. Some universals are relations, some universals are not. The universals themselves ensure that there is a determinate answer which of them deserves the name 'relation'. Hence, serious ontology, in principle, can discover precisely what a relation is. Furthermore, Forrest's avowal of serious ontology expresses a general doctrine: *no* categorial characters are fixed by convention and so the categorial character *being a relation* is not fixed by convention. And, as I said, this formulation of the objection does not involve naturalness. The objection is directed at relations in general.

(Forrest's worry presupposes an epistemic presumptuousness concerning the intrinsic nature of the entities in our ontology. This derives from the fact that categorial characters (such as *being a property*, *being a relation*) are intrinsic. This epistemic presumptuousness is incompatible with 'categorial humility', which is the view that we do

---

[3] In reaction to this remark Lewis merely says: 'On ordered pairs, I'm content with the way you record my view in your footnote 7' (unpublished letter to Peter Forrest, 13 March 1985, p. 1; David Lewis Papers, C1520, Box B-000665, Folder 10, Princeton University Library).

not know the intrinsic nature of categorial characters (see Cowling 2010). I use the label 'categorial character' to leave open nominalistic readings of these items. Perhaps categorial characters are pieces of primitive ideology.)

Armstrong's version of the argument from arbitrariness is slightly different. The objection has *natural* class nominalism as its target and so it involves naturalness. Armstrong objects that natural class nominalism forces Lewis to take the notion of a natural ordered pair as primitive. To illustrate, take ⟨a, b⟩ and ⟨b, a⟩. Each has their own order. The notion of an ordered pair is a piece of primitive ideology or it is reductively identified with some ontology. The notion of an ordered pair cannot be explicated in terms of relations because we are attempting to reduce relations to ordered pairs; the ordering cannot be a primitive *relation*. So, either it is a piece of primitive ideology, which renders the theory less ideologically parsimonious, or it is reductively identified with some ontology. Armstrong writes:

> Can we use the Wiener-Kuratowski device, and substitute for the ordered pairs an unordered set of sets? For ⟨a, b⟩ we substitute, perhaps, {{a}, {a, b}}, and for ⟨b, a⟩ {{b}, {a, b}}. However, as a piece of serious metaphysics, this seems quite unacceptable. For a start, the correlation between ordered pairs and unordered sets of sets is quite arbitrary. The substitution just given could as well have been reversed. (Armstrong 1986: 87)

In other words, the connection between ⟨a, b⟩ and {{a}, {a, b}} is a correlation, just like, in the first instance, there is a correspondence between set-theoretic constructions of individuals and properties (and relations). This in itself should not rule out the proposal that these set-theoretic constructions play the role of properties and relations. We are free to reductively identify ⟨a, b⟩ with {{a}, {a, b}}. But, as Armstrong says, it is arbitrary. Some other set of sets could have been chosen as the reductive base for ⟨a, b⟩. So it is a convention that ⟨a, b⟩ is identified with {{a}, {a, b}}. There is something conventional about what an ordered pair is. Since serious metaphysics does not traffic in arbitrary reductive identifications, Lewis's set-theoretic theory of relations should be rejected.

Because Armstrong's version of the argument is concerned specifically with the notion of a natural class, the source of the distaste for convention is the idea that naturalness is objective. The fact that these classes are natural should not depend on us. In Forrest's formulation, the aversion to convention comes from an intuition about the objectivity of categorial characters.

Lewis admits he is not doing serious ontology. The issue for him is one of semantics: there is systematic ambiguity with the term 'relation'. This thesis falls under his general view that the use of most words in ordinary opinion and philosophical theory is unsettled—compare it with what he says about properties and about us having no one conception of the properties (Lewis 1986c: 55). The systematic ambiguity is harmless, so long as the ambiguous statement about relations comes out true on each resolution of vagueness (Lewis 1986c: 52, n. 39). Another way to support the claim that the ambiguity is harmless is to stipulate that whatever construction we use, we always get a natural class. In Letter 272 to Armstrong, 6 January 1985, Lewis writes: 'Suppose there are three constructions: the pairs$_1$, the pairs$_2$, and the pairs$_3$. Then I can say that the class of all pairs$_1$ of things a meter apart is a natural class; and so is the class of all pairs$_2$ of such things; and so is the class of all pairs$_3$' (Beebee and Fisher 2020: 528). Therefore, it does not matter which kind of pairs we choose. Any mode of construction will do.

What this means is that for any disambiguation and any construction there is a natural property. For pairs$_1$ there is P1-naturalness, for pairs$_2$ there is P2-naturalness, for pairs$_3$ there is P3-naturalness, and so on. A proliferation of perfectly natural properties follows, because if there are infinitely many ways to construct n-tuples and each way is equally natural, then there are infinitely many perfectly natural properties (cf. Sider 1996: 293).[4] However, it is not obvious that the proliferation is objectionable. So far Lewis has multiplied entities of one kind: *perfectly natural property*, which only violates quantitative parsimony.

The better objection is to go after the fact that the predicate '… is perfectly natural' is a piece of primitive *ideology*. Indeed, it is more faithful to Lewis's original proposal

---

[4] Forrest posed this objection to Lewis in a letter dated 22 February 1985, but Lewis did not address it directly in his follow up letter (David Lewis Papers, C1520, Box B-000665, Folder 10, Princeton University Library).

than the view that there is some property or properties of *being natural*. On this interpretation, the consequence of Lewis's solution is a multiplication of primitive naturalness *predicates*: '… is perfectly natural-P1', etc., where each predicate applies to a distinct plurality of classes. Thus the proliferation violates *ideological* parsimony, not ontological parsimony. Presumably, it is worse to violate ideological parsimony in this context because the intuitive reaction to the violation is tracking something more like qualitative parsimony than quantitative parsimony. Some of this depends on how we conceive of the meta-ontological notion of ideology, of course. If ideology indicates metaphysical structure, as Sider later suggests (2011: passim), then the proliferation is highly unpalatable, because the explosion of naturalness predicates reflects an explosion of metaphysical structure. If we are attracted to a Quinean deflationary conception of ideology, then the force of the objection can be weakened. I leave debates about the status of ideology to one side, but needless to say, Lewis would fall within the realist camp about ideology.

In one place Lewis revises his strategy of dealing with the charge of arbitrariness. This strategy might help with the proliferation worry. He says in Letter 272 to Armstrong on 6 January 1985:

> This is the usual remedy for arbitrariness: don't *make* the choice, generalize over the different ways of making it. Maybe not *all* different ways: among the constructions themselves, some might be disqualified as unnatural, leaving us with only a short list between which the honours are even. (Beebee and Fisher 2020: 528)

The idea is to place a restriction on which constructions are natural and which are not. This would be one way to avoid the uneconomical consequence (whether ideological or ontological) of too many naturalness properties or predicates. But it would be difficult to adjudicate which constructions are natural and which ones are not, especially from the standpoint of set theory. We could not appeal to some feature of the constituents of ordered pairs. Lewis would have to commit to further brute facts that state that this construction is natural and this other construction is not, since he has no analysis that

would afford an appropriate explanation as to why this one is natural and not that one. Moreover, it is not clear that this move would help in principle because the ambiguity is no longer harmless, if not all resolutions of the relevant vagueness come out true. Thus the restriction does not uphold the spirit or letter of the generalization remedy for arbitrariness.

So far the gist of Lewis's reply is to draw our attention to the presence of vagueness in language. It should be noted that the appeal to vagueness requires further justification and clarification. He has in effect claimed that there is indeterminacy in language such that we have not decided what 'relation' or 'natural relation' refers to. Let us call this *semantic indeterminacy* because the source of the indeterminacy is some fact about language. However, semantic indeterminacy is only half the issue because the source of the indeterminacy is, in part, ontic in the sense that the indeterminacy is due to ontology. Let us call this *ontic determinacy*. Specifically, for Lewis, our working ontology contains equally good candidates for the relation-role or the natural-relation-role. The fault is with the kind of entity in our ontology; that is, classes. We will see below that ontic indeterminacy is the more pressing kind of indeterminacy in the context of naturalness.

3. Making the Argument from Arbitrariness Stick

Theodore Sider defends the argument from arbitrariness in 'Naturalness and Arbitrariness' (1996). It is helpful to consider Sider's contribution because Lewis gave comments on a draft of the paper in Letter 352 to Sider, 4 January 1995 (Beebee and Fisher 2020: 693–5). Lewis's reactions contain insights into his evolving thoughts on the objection and his position on naturalness.

Sider's target is the view that naturalness is ontically basic in the sense that it is unable to be analysed; metaphysically, there is no reductive analysis of naturalness. (Naturalness here covers both the view that naturalness is a primitive predicate and the view that naturalness is a primitive property.) Because naturalness is ontically basic, it follows that naturalness is not conventional or arbitrary. If we ask the question 'is relation R natural?', there must be an objectively true answer that does not vary across distinct constructions of ordered pairs. The problem is that class nominalism implies this

unpalatable variation (Sider 1996: 288). For each construction there exists a distinct meaning for 'relation'. According to one construction, 'relation' refers to sets that contain Ø; according to others, 'relation' refers to sets that do not contain Ø. If these sets are different kinds of entities, the variation in meaning and truth-value is repugnant.

Sider's target view involves two claims: naturalness is ontically basic and non-conventional. If you think that naturalness is ontically basic, you are forced to take it as primitive (and of course you might be happy with this choice). Lewis took naturalness as primitive for different reasons. His main reason was that he was unsure what the best analysis is. Underneath this cautionary stance, and perhaps in support of it, is the view that there are no absolute primitives. In his letters Lewis rejects any notion of ontic or conceptual priority. Consider this remark in Letter 287 to Keith Campbell, 31 March 1987:

> As you'll expect, I don't believe that 'genuine parts are in some real metaphysical or logical sense prior to the wholes they compose'. It's not that I think the wholes are instead prior to the parts. I don't see what sort of priority there is either way. (Beebee and Fisher 2020: 575)

If there were an intelligible notion of ontic or conceptual priority, the ontic or conceptual priors would come first in the analysis. But for Lewis there is no such coherent notion. Here is another example of this tendency in his thought. After rejecting any notion of logical (conceptual) priority, he remarks in Letter 37 to Pavel Tichy, 12 September 1977:

> Similarly, I don't understand the thesis that causation is a primitive … relation. To me, 'primitive' is relational: X is primitive in definitional system Y. It's like 'starting point'; Dunedin is a starting point for some journeys and not for others, and I wouldn't understand you if you said, simply, that it was a starting point.[5] (Beebee and Fisher 2020: 71)

---

[5] Nelson Goodman made similar remarks in *The Structure of Appearance* (1951: 64), which Lewis studied as a graduate student at Harvard University. Lewis took two classes with Goodman while Goodman was still at Brandeis University: one on Goodman's *Languages of Art* (fall semester 1964), the other on *The*

Likewise, the thesis that naturalness is a primitive is a relational statement, a starting point from which to theorize about properties (and systematize our talk about abundant and sparse properties). Subsequently, Sider conceded that the primitivist class nominalism he attacks is *not* Lewis's view (Sider 1996: 284).

However, this is something of a red herring. The real issue concerns the objectivity of naturalness facts, not the reasons why one takes naturalness as primitive. The following distinction can make the objection stick. There is the act we perform in taking something as primitive and there are facts in our theory that follow after taking something as primitive. We might believe for pragmatic or epistemic reasons that naturalness is a primitive and from such a starting point develop a theory of natural properties and relations. But there is also a sense in which, after saying naturalness is primitive, facts about it are non-conventional or questions about whether some entity is natural are not arbitrary. Having accepted the natural/non-natural distinction and taken it as primitive, Lewis's realist tendencies should lead him to maintain that it is an objective fact about the world whether this property or that relation is perfectly natural. We do not need to take naturalness as ontically basic to arrive at the non-conventionality of naturalness, even though the former entails the latter.

(This interpretation is supported by the fact that Lewis thinks that naturalness is absolute; the fact that a property is natural is not relative to a world, he says (Lewis 1986c: 60–1, n. 44). Facts about the naturalness of classes are noncontingent and whether a property is perfectly natural is noncontingent. What is contingent is whether some perfectly natural property is had by things in a certain world. It is also contingent whether property F that fills role R is perfectly natural because it is contingent whether property F fills role R (since, for Lewis, property-names are non-rigid).)

Even if the argument from arbitrariness sticks, some metaphysicians such as Alex Oliver remain unconvinced by the very argument (Oliver 1996: 24–25). Oliver says that the argument presupposes that there is an objective fact of the matter that grounds what a

---

Structure of Appearance (spring semester 1965). The influence of Goodman on Lewis's thought must be noted. In addition to this remark against absolute primitives, some of the influence of Carnap on Lewis was really Lewis following Goodman's reading of Carnap.

relation is. (Oliver's criticism applies to the argument with or without naturalness. The context suggests that he thinks the argument, like Forrest, concerns the category of *relation* and is not tied to natural relations.) Oliver questions this presupposition. The only kind of fact that we can appeal to is one that describes the role that certain entities fill. What a relation is is, presumably, exhausted by what it does. Such a functional description does not ground the nature of the filler of the specified role. He is thereby led to think the choice is 'between saying that properties are sui generis entities that hold a certain office and identifying properties with certain sets, sets that are fit to hold that office, while acknowledging that such an identification is somewhat arbitrary' (Oliver 1996: 25). But this is a misrepresentation of the situation. Oliver has merely latched on to variation *across* theories of the role-fillers of certain roles. This is an inter-theory issue about the best ontology for theorizing about properties and relations. The argument from arbitrariness speaks to the sense of indeterminacy or arbitrariness that applies to a *single* theory, which is an intra-theory issue. Within Armstrong's theory what a relation is is not indeterminate; there are specific role-fillers (universals) that fill the relation-role or the natural-relation-role. For Lewis, *within his theory* it is indeterminate what a relation is; there are several equally good candidates and it is arbitrary whether it is this kind of construction and not that kind that fills the relation-role. If we focus on natural relations, the problem straightforwardly arises: what a natural relation is is indeterminate. What is more, Oliver assumes that role-descriptions are the only kind of fact we can appeal to in determining what a (natural) relation is, but this claim is surely contentious and requires further argument. So Oliver's defence cannot save Lewis.

To sum up, the problem of arbitrariness and conventionality has to live with the objectivity that comes with the concept of naturalness; after all, Lewis's conversion to natural properties presupposed that the distinction is (at least, partly) non-psychological – even God cannot make grue perfectly natural. The objectivity of naturalness is independent of our reasons to take naturalness as primitive. In addition, once we have clarified what we mean by 'relation' or shown that what we mean disambiguates into two or more senses of the word, an element of convention is present in Lewis's theory. (After all, there is a superficial sense in which for any ontology the word 'relation' is semantically indeterminate. In trope theory, there are many kinds of relations. Which

relation-tropes does 'relation' refer to? Obviously, it depends on what we mean by 'relation'. But the relevant issue concerns our *account* of relations, and in particular Lewis's account of relations; that is, his theory about what relations are.) When we consider natural relations this element of convention is tied to facts about naturalness. Even if you think that serious metaphysics can tolerate a bit of convention it is problematic to say that it occurs here. Natural relations in philosophical theory demand a privileged mode of construction such that 'natural relation' refers to these relations (and not to other less natural relations). I conclude that the argument from arbitrariness is a genuine problem for Lewis (for sympathetic discussion of the argument from arbitrariness, see McDaniel 2006: 307–8).

4. Pragmatism and Structuralism

The argument from arbitrariness *is* a problem for Lewis. It is instructive to continue our examination of Lewis's reaction to the objection, despite the fact that he ultimately accepts the conclusion. The exercise will reveal aspects of his approach to metaphysics.

Let us go back to Lewis's exchange with Armstrong. Lewis interprets his dispute with Armstrong as one concerning truth, not existence. In Letter 272 to Armstrong, 6 January 1985, he writes:

> What makes the arbitrariness of a set-theoretic construction of the structure aRb unacceptable? – Not the seriousness of the enterprise, I think, but rather the goal of it. It's perfectly OK that something should be true relative to one arbitrary stipulation and false relative to another – truth is always relative to interpretation, interpretation is always arbitrary – but it's nonsense that something should *exist* relative to one arbitrary stipulation and fail to exist relative to another. (Beebee and Fisher 2020: 527)

The issue of arbitrariness boils down to how some language is to be interpreted. A sentence on one interpretation is satisfied; on another interpretation it is not. Elsewhere, he adds, crucially: 'that is all there is to it' (Beebee and Fisher 2020: 334). Interpretation is

always relative, always arbitrary. In addition, Lewis thinks of truth and existence as separate. In discussing a Goodman-style theory of universals according to which there are universals, particulars, and sets of universals and particulars (but no states of affairs or structures), Lewis thinks that the set {F, a} does not depend for its existence on whether or not a instantiates F. But the *truth* of this set in some Lagadonian language *L* does, if this set is interpreted as meaning a instantiates F. In contrast, for Armstrong, truth depends on existence, as per his truthmaker approach to ontology (Armstrong 2004). The existence of the entity in question depends on whether a instantiates F. According to Lewis, truth is tied to interpretation. We could have stipulated that the set {F, a} means b instantiates F, in which case it is false in *L*. The difference between Armstrong and Lewis, then, is a commitment to the principle of truthmaking, and specifically, to the use of truthmaking in fundamental ontology (Lewis 1986b). Although Lewis later adopts some sort of truthmaking principle, it does not play the role that Armstrong assigns it (cf. MacBride 2005: 134–5). For Armstrong, the relational structure aRb ontically depends on the universal R holding between a and b. That fact of instantiation cannot be arbitrary. The truth of a statement about a relation is grounded in ontology, which weeds out any arbitrariness.

This difference brings to the fore another difference concerning Lewis and Armstrong's conceptions of analysis. Lewis's over-arching goal in philosophy is to systematize opinion—both ordinary and philosophical opinion (Lewis 1983b: x; for discussion, see Beebee 2018). His project of systematizing opinion involves conceptual analysis. The goal of conceptual analysis is to classify and systematize our dispositional judgements about some subject matter (through the use of concepts). Conceptual analysis is fallible and conceptual analyses are accepted by inference to the best explanation. Armstrong's approach to metaphysics involves a different conception of analysis. He thinks of analysis as asking after truthmakers for truths as opposed to proposing definitions, as Lewis points out (Lewis 1992: 215). Lewis thinks Armstrong's conception of analysis is unfamiliar (Lewis 1992: 211), whereas Armstrong thinks Lewis never got past his preoccupation with conceptual analysis from his days at Oxford (Armstrong 2022: 24).

What is more, Lewis's reaction to the argument from arbitrariness has a pragmatist angle to it. So it is important to understand the extent of his pragmatism and how it squares with his realist tendencies. To see this, let us trace the evolution of his views about the locative nature of classes—not least because it is another aspect of his class nominalism that must be defended. Initially, Lewis said that there is a sense in which classes (or numbers, say) exist in a world but without being part of that world (Lewis 1973: 39–40). There are two senses of 'existing in': (1) being part of a world and (2) existing from the standpoint of a world. To illustrate the latter concept, suppose I quantify (restrictedly) over numbers from the standpoint of my world. My quantification comes with a conversational context that fixes a domain of entities. Hence the notion of 'existing from the standpoint of a world' is pragmatic.[6] He later suggests that classes might be located (or present) where their members are (Lewis 1983a: 345; 1986c: 94–5). Then in *Parts of Classes* (Lewis 1991), he is agnostic about the locative nature of classes. Perhaps classes are spatiotemporal, perhaps they are not. His agnosticism applied to *whether* classes are spatiotemporal/have location and to *how* classes have location, if in fact they do. This multi-faceted agnosticism (with ignorance and indeterminacy mixed in) reinforced the earlier pragmatic or contextualist idea of classes existing from the standpoint of a world. The continuity in his attitude is bolstered by the structuralist position he arrives at in the appendix to *Parts of Classes* and in 'Mathematics is Megethology' (Lewis 1993). To illustrate, suppose classes have location and suppose I know this fact; further suppose that I know where unit sets are located. I would still fail to know where *my* unit set is located, since Lewis thinks it is indeterminate what exactly is the true singleton function or operator.[7]

Applying this structuralist consequence to relations, we might know various facts about relations. But these facts are general facts, presumably cashed out in terms of Ramsey sentences. For instance, any implicit definition of a theoretical term when made explicit involves a functional description of the role-filler associated with that term: for

---

[6] In fact, numbers exist from the standpoint of all worlds (given that numbers are necessary, noncontingent beings). The point is not spoilt, of course. The notion of 'existing from the standpoint of a world' remains pragmatic.
[7] This is summarized in Letter 338 to Gideon Rosen, 24 November 1992 (Beebee and Fisher 2020: 669–72). Sider makes a similar point (Sider 1996: 295–6). For criticism of Lewis's theory of classes, see (Rosen 2015). See also MacBride and Janssen-Lauret, chapter 5 of this volume.

any x, x fills role R1 iff …. Our understanding of the given item of ontology is limited to the roles specified in our theory but the roles at a general level (Lewis 2009). That is, at a general level of functional specification. We do not go deeper to an account of the nature of the role-filler independent of the characterization of it as the role-filler. In the case of relations, two-place relations are classes of ordered pairs. It follows that we do not know that *this* ordered pair (construction) is involved in the filling of the relation-role. It is indeterminate which ordered pair (construction) is involved in grounding the true relation. (Recall that there are many kinds of ordered pairs out there because of the equally good ways to construct them. Again, this point is neutral between relations in general and natural relations only.) The ontic indeterminacy in his theory forces him, therefore, to be a quietist about the *nature* of relations. Put differently, if metaphysics demands that Lewis must say that 'relation' refers to this class of ordered pairs, he would refuse to submit to the demand. The *source* of the indeterminacy, then, is his refined nominalistic metaphysics; that is, his ontology of classes coupled with his structuralism. In short, his ontology of classes is enough to give rise to the charge of arbitrariness. His structuralism exacerbates it because structuralism is an even more overt avowal that the material out of which to build ordered pairs and to build relations is amorphous. If we single out natural relations, the same points apply to them.

5. Varieties of Ontological Seriousness

Lewis is happy to accept the conclusion of the argument from arbitrariness because it falls out of his tendency to see indeterminacy and vagueness in language where others see a deep metaphysical issue. Admittedly, this is only half right because, as we have just seen, his nominalistic metaphysics is also to blame. That is, one source of the indeterminacy is ontic. Does this mean Lewis is not ontologically serious? It depends. He reflects on the debate in Letter 204 to Rosen, 16 June 1992:

> I've tried saying 'Well OK, I'm not ontologically serious about X's, exactly; I'm serious about each of several different set-theoretic X-candidates, and I reckon the arbitrariness is just semantic indecision about which candidates deserve the name

of X's'. But [Armstrong] usually regards this as a very damaging retreat from seriousness about X's. (Beebee and Fisher 2020: 398)

This passage indicates that Lewis thinks that *there are*, objectively speaking, entities, which fill whatever roles we have specified in our theory, and that he is ontologically serious about them. To capture this, let us distinguish three ways one might be ontologically serious conceived as lying on a spectrum. At one end we have Armstrong and Forrest. They are really ontologically serious about the nature of entities that fall under categorial kinds. After clarifying what we mean by a word that expresses the idea of a categorial kind, the word has determinate reference and there is a fact of the matter that the word picks out that kind of entity. The categorial question of what a relation is has a determinate answer and the answer is supplied by ontology. The same is true for every other ontic category or entity that falls under a categorial kind (I do not mean to suggest that on this view all terms are non-vague). At the other end we have Stalnaker, who has pragmatist inclinations towards metaphysical questions in general (Stalnaker 1984: Preface). For Stalnaker, metaphysical theories involve only functional concepts of the entities in question. There are no further disputes to be had about the nature of the entities that fill specified roles. For instance, on his approach to modal metaphysics, possible worlds are abstract, relational structures that are understood only in terms of 'the concepts they are used to analyse' (Stalnaker 1988: 123–4). There is no further question about the notion of the role-filler independent of the roles it fills. Contrast this with Lewis's complaint that magical ersatzers offer no notion of ways things might be when they say that possible worlds are ways things might be (Lewis 1986c: 184). Lewis's background requirement is that magical ersatzers must provide a notion of the entities that play the role of possible worlds that is independent of the ways-things-might-be-role (for exposition of Lewis's critique of magical ersatzism, see Fisher 2018a).

Lewis is somewhere in between Armstrong/Forrest and Stalnaker. In reaction to Stalnaker's review of *On the Plurality of Worlds* (Stalnaker 1988), Lewis writes: 'we differ more radically than I had realized about ontological seriousness. I think all the issues you raise amount to parts of this one big issue' (Beebee and Fisher 2020: 360). Thus Lewis thought to distance himself from Stalnaker concerning serious ontology. The

realist-cum-objectivist aspect of Lewis's view is the idea that it is an objective fact that there are entities (whatever their nature) that fill specified roles. This is where Quinean aspects of his philosophy enter. Quinean scientism supplies the contents of our ontology with respect to total theory of what there is. It supplies entities that are our candidates for filling roles in our theory. The objectivist component concerns the existence of these entities (candidate role-fillers). Hence, Lewis is a realist about something out there in the world (namely, the large number of candidates that can play a whole host of specified roles), despite the vagueness and indeterminacy and despite the rejection of Armstrong's demand that the theory must deliver a determinate answer about what the nature of the entity really is. As Lewis says in Letter 209 to Stalnaker, 26 April 1995:

> But such a structuralist is a realist about *something*, though it may be something a lot less structured than the alleged uniquely correct candidate for the role would have been. He is committed to the existence of all the many candidates. Or he is committed to the inaccessibly infinite supply of modelling clay out of which each of the many candidates is to be built. (Beebee and Fisher 2020: 408)

In contrast, Stalnaker endorses an instrumentalist anti-realism that denies the ontic independence of candidate role-fillers. (In Letter 209, Lewis calls Stalnaker a 'quasi-realist'; Lewis writes: 'But there are also your rejections of questions and your disclaimers, and it is these that seem to me to render your realism quasi' (Beebee and Fisher 2020: 408). I shall use the label 'instrumental anti-realism'. The word 'quasi-realism' is typically associated with Simon Blackburn.) According to Stalnaker's philosophy of mathematics, 'the existence of numbers is just constituted by the fact that there is a legitimate practice involving discourse with a certain structure, and that certain of the products of this discourse meet the standards of correctness that it sets' (Stalnaker 1988: 119). The existence of the role-fillers is not independent of the roles they fill. For Lewis, the existence of numbers is not constituted by legitimate practice or discourse. So it makes sense to attribute a moderate version of ontological seriousness to Lewis. His later structuralism helps to evade the worry that he is not being ontologically serious at all,

because he quantifies over the many candidate role-fillers. But what ramifications does moderate serious ontology have for natural properties and natural relations?

6. Moderate Ontological Seriousness

I shall now argue that Lewis's moderate ontological seriousness results in a rift between his official agnosticism about naturalness and analyses of naturalness in terms of ontology (universals or tropes, say). His primitivism about naturalness comes with a commitment to the view that the reference of 'relation' is indeterminate, but this commitment is at odds with analyses of naturalness in terms of ontology because such items of our ontology can serve as entities that determine the reference of 'natural relation'. To see this, let us consider one of Lewis's comments in Letter 352 to Sider, 4 January 1995:

> The Realist may think that 'relation' has determinate reference, not subject either to semantic indecision or arbitrary choice. He thinks 'relation' refers determinately to certain *sui generis* things, namely relations. And from that Realist standpoint, an arbitrary convention to identify the relations with the K-relations, as it might be, would be funny business indeed! But this Realist standpoint is one that a Class Nominalist should reject outright. The accusation of claiming to settle serious questions of ontology by arbitrary *fiat* should not be addressed to a wholehearted Class Nominalist, but rather to a muddled hybrid: to someone who's halfheartedly a Class Nominalist but halfheartedly a Realist. (Beebee and Fisher 2020: 694–5)

But Lewis fails to acknowledge that a class nominalist who analyses naturalness in terms of some ontology is, to use Lewis's words, half-heartedly a realist. The extra ontology can settle the question of what a natural relation is. If you have the extra ontology, why not use it to deal with the argument from arbitrariness head on? If we accept one of these candidate analyses, then the charge of not being ontologically serious can be easily answered, because the item of ontology would ensure that these entities are the natural properties and relations and also fix the referent of 'natural property' and 'natural relation'. So Lewis should not remain neutral towards analyses of naturalness in terms of

ontology (universals or tropes). Such analyses come with a conception of ontological seriousness that is not part of Lewis's system. Such analyses come with a conception of ontological seriousness that says that 'natural relation' has determinate reference.

By the mid-1990s, Lewis favoured the trope-theoretic analysis of naturalness. Following the labelling in §1, where (a) is primitivism about naturalness, (b) is the analysis in terms of universals, and (c) is the analysis in terms of tropes, he says in Letter 350 to Hilary Putnam, 2 January 1995:

> My favourite hypothesis used to be (b), until I became worried about the mysterious unmereological way in which structural universals are supposed to be constructed from their 'constituents'. My favourite now is (c). (Beebee and Fisher 2020: 691)

In this letter Lewis does not explain his reasons for this change of view from his official agnosticism. But we can now appreciate why he might say this. After travelling all the way to structuralism, he felt that natural class nominalism was not as tenable as it once was. Since he rejected structural universals, the remaining option was the trope-theoretic analysis. However, what he failed to appreciate, I submit, is that the trope-theoretic analysis should motivate him to revise his response to the charge of not being ontologically serious. If you have the extra ontology, the correspondence between the extra ontology and perfectly natural properties and relations motivates the idea that 'natural relation' has determinate reference. The extra ontology provides the right kind of candidate referents to fix determinately the word 'natural relation'. Whether universals or tropes, these entities are intrinsically of specific kinds. Their nature, so to speak, determines the reference and it does so independent of convention. It is categorially determinate whether or not this entity is a natural relation. Hence we have arrived at a more attractive package deal.

This proposed revision, of course, does not speak to the worry about the ontic status of relations in general; that is, of entities that fall under the category of *relation*. So far all I have said implies that we should be ontologically serious about natural relations only. Non-natural relations may continue to lack determinate reference and not be part of

serious ontology. At this point I think our evaluation should be measured. The argument from arbitrariness can be dealt with head on when it is formulated in terms of natural relations. The formulation in terms of relations in general remains unaddressed.

I have two final thoughts on this. First, we could offer a disjointed response to the objection, as I have just done, but play down the objectivist intuition in the case of categorial characters. After all, the intuition has been satisfied for entities that fall under the category of *natural relation*. That might be enough. On the other hand, if Armstrong and Forrest remain unsatisfied, I suspect it highlights yet again a difference in approach to metaphysics. Armstrong has in the background Donald C. Williams's traditional project of 'analytic ontology' (Williams 2018: 24), which aims to discover the categories of being. The path we have travelled through Lewis's reactions to Armstrong's conception of serious ontology shows the extent to which Lewis is not in full agreement with Armstrong on what the project of ontology is. Second, we could invoke degrees of naturalness and say that less than perfectly natural relations have determinate reference in virtue of being built up from perfectly natural properties and relations. If a theory of degrees of naturalness could be fleshed out appropriately, then we might just cover relations of all types and therefore deal with the argument from arbitrariness in its more general formulation. Since I have bracketed degrees of naturalness, this line of thought must be explored on another occasion.

7. Conclusion

From Lewis's point of view, for Quinean reasons concerning total theory of what there is, there are set-theoretic constructions (of individuals). These set-theoretic constructions either correspond to properties and relations or they are identical with them. Being a nominalist, he has no reason to believe that there are sui generis properties in addition to set-theoretic constructions. There are just set-theoretic constructions and these are called 'properties' and 'relations' only if they play the property-role and relation-role. In addition, he believes that there is indeterminacy (of the non-radical kind) in a whole host of philosophical terminology and ordinary language. Use is unsettled. Ordinary language

and philosophical theory are rife with 'open texture', as ordinary language philosophers would put it.

Lewis can maintain a moderate version of serious ontology and his realism can evade the threat of morphing into pragmatist quasi-realism (in the sense used by Lewis in Letter 209 to Stalnaker) or instrumentalist anti-realism; however, the claim that the issue can be dissolved in terms of vagueness and indeterminacy in language is no silver bullet for the argument from arbitrariness. It is not enough to say that terms in ordinary language and philosophical theory are vague. Armstrong can agree that words have unsettled usage and that we need to specify the meaning of some word but insist that, according to Lewis's theory of relations, there is an unpalatable conventional element. The issue concerns our *account* of relations, not the linguistic status of the word 'relation' or 'natural relation'. Moreover, the indeterminacy, as we have uncovered, is not just semantic. There exists also *ontic* indeterminacy because of the equally suitable candidate role-fillers that entail that there is no perfectly natural construction of ordered pairs—or a true singleton operator, for that matter. Lewis's structuralism, it turns out, invites more problems than it solves.

The more stable position is a trope-theoretic analysis of natural properties. The natural relations are those classes of exactly resembling sparse tropes. It appears to be the account of naturalness that Lewis ended up favouring towards the end of his career, but, as I have argued, it is in tension with Lewis's moderate conception of serious ontology. A more attractive package is a trope-theoretic analysis of natural properties plus a less moderate version of serious ontology; that is, a variant of serious ontology that is closer to Armstrong and Forrest's. It deals with the charge of not being ontologically serious head on.

Although I have argued that Lewis should revise his official position on naturalness and his view about serious ontology, the differences between Armstrong and Lewis on this metaphysical issue reveal to what extent Lewis rejected serious ontology (as advocated by Armstrong) and embraced pragmatic or contextualist constraints on ontology that are often set by convention. Given that Lewis held on to a more traditional or Oxonian conception of conceptual analysis, we can begin to appreciate where he should be placed in the revival of metaphysics in the analytic tradition. One factor in the revival of

metaphysics was a rejection of conceptual analysis in favour of the construction of theories about the world itself. Funnily enough, this ontological turn became known as serious metaphysics or serious ontology. Its slogan is that we do not discover ultimate facts about the world by exploring the meaning of words and sentences. Armstrong and others in Australia such as C.B. Martin were its chief proponents. While Lewis was in their good company, he was not part of this movement, strictly speaking. Lewis, of course, played a central role in pushing metaphysics forward and had a huge impact on shaping metaphysical disputes and framing metaphysical questions. But it was carried out in a different manner to Armstrong's approach. Therefore, accounts of the history of analytic metaphysics should be more sensitive to these subtleties and not lump Lewis together with the rise of Armstrongian serious ontology.[8]

References

Armstrong, D.M. 1986. In Defence of Structural Universals. *Australasian Journal of Philosophy* 64(1): 85–88.

Armstrong, D.M. 2004. *Truth and Truthmakers*. Cambridge: Cambridge University Press.

Armstrong, D.M. 2022. Lewis and the Identity Theory. In *Armstrong's Materialist Theory of Mind*, eds. Peter R. Anstey and David Braddon-Mitchell. Oxford: Oxford University Press: 24–28.

Beebee, Helen. 2018. Philosophical Scepticism and the Aims of Philosophy. *Proceedings of the Aristotelian Society* 118(1): 1–24.

Beebee, Helen, and A.R.J. Fisher, eds. 2020. *Philosophical Letters of David K. Lewis: Volume 1: Causation, Modality, Ontology*. Oxford: Oxford University Press.

Bennett, Karen. 2013. Having a Part Twice Over. *Australasian Journal of Philosophy* 91(1): 83–103.

Cowling, Sam. 2010. Kantian Humility and Ontological Categories. *Analysis* 70(4): 659–65.

Fisher, A.R.J. 2018a. On Lewis against Magic: A Study of Method in Metaphysics. *Synthese* 195(5): 2335–53.

Fisher, A.R.J. 2018b. Structural Universals. *Philosophy Compass* 13(10): e12518.

Forrest, Peter. 1986. Neither Magic nor Mereology: A Reply to Lewis. *Australasian Journal of Philosophy* 64(1): 89–91.

Goodman, Nelson. 1951. *The Structure of Appearance*. Cambridge, MA: Harvard University Press.

Hawley, Katherine. 2010. Mereology, Modality and Magic. *Australasian Journal of Philosophy* 88(1): 117–33.

Lewis, David. 1973. *Counterfactuals*. Cambridge, MA: Harvard University Press.

Lewis, David. 1983a. New Work for a Theory of Universals. *Australasian Journal of Philosophy* 61(4): 343–77.

Lewis, David. 1983b. *Philosophical Papers*. Vol. 1. Oxford: Oxford University Press.

Lewis, David. 1986a. Against Structural Universals. *Australasian Journal of Philosophy* 64(1): 25–46.

Lewis, David. 1986b. Comment on Armstrong and Forrest. *Australasian Journal of Philosophy* 64(1): 92–3.

Lewis, David. 1986c. *On the Plurality of Worlds*. Oxford: Basil Blackwell.

Lewis, David. 1991. *Parts of Classes*. Cambridge, MA: B. Blackwell.

Lewis, David. 1992. Critical Notice of *A Combinatorial Theory of Possibility*. *Australasian Journal of Philosophy* 70(2): 211–24.

Lewis, David. 1993. Mathematics Is Megethology. *Philosophia Mathematica* 1(Series III): 3–23.

Lewis, David. 2009. Ramseyan Humility. In *Conceptual Analysis and Philosophical Naturalism*, eds. David Braddon-Mitchell and Robert Nola. Cambridge, MA: MIT Press: 203–22.

MacBride, Fraser. 2005. Lewis's Animadversions on the Truthmaker Principle. In *Truthmakers: A Contemporary Debate*, eds. Helen Beebee and Julian Dodd. Oxford: Oxford University Press: 117–40.

McDaniel, Kris. 2006. Modal Realisms. *Philosophical Perspectives* 20(1): 303–31.

Oliver, Alex. 1996. The Metaphysics of Properties. *Mind* 105(417): 1–80.

Rosen, Gideon. 2015. On the Nature of Certain Philosophical Entities: Set Theoretic Constructionalism in the Metaphysics of David Lewis. In *The Blackwell Companion to David Lewis*, eds. Barry Loewer and Jonathan Schaffer. Malden, MA: Wiley-Blackwell: 382–98.

Sider, Theodore. 1996. Naturalness and Arbitrariness. *Philosophical Studies* 81: 283–301.

Sider, Theodore. 2011. *Writing the Book of the World*. Oxford: Clarendon Press.

Stalnaker, Robert C. 1984. *Inquiry*. Cambridge, MA: MIT Press.

Stalnaker, Robert C. 1988. Critical Notice of *On the Plurality of Worlds*. *Mind* 97(385): 117–28.

Thomasson, Amie L. 2012. Research Problems and Methods in Metaphysics. In *The Continuum Companion to Metaphysics*, eds. Neil A. Manson and Robert W. Barnard. New York: Bloomsbury: 14–45.

Williams, Donald C. 2018. The Elements of Being. In *The Elements and Patterns of Being: Essays in Metaphysics*, ed. A.R.J. Fisher. Oxford: Oxford University Press: 24–50.