

# Truthmaking, Grounding and Metaphysical Explanation

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## A fine starting point

Fine (2001: 3) distinguishes two notions of metaphysical reality:

**what is factual** : "...metaphysical reality is to be identified with what is "objective" or "factual". The antirealist, on this conception, denies that there are any facts "out there" in virtue of which the propositions of a given domain might be true. The propositions of the domain are not in the "business" of stating such facts; they serve merely to indicate our engagement with the world without stating, in objective fashion, how the world is. As familiar examples of such a position, we have expressivism in ethics, according to which ethical judgements are mere expressions of attitude; formalism in mathematics, according to which mathematical statements are mere moves within a system of formal rules; and instrumentalism in science, according to which scientific theories are mere devices for the prediction and control of our environment."

**what is fundamental** : "...metaphysical reality is to be identified with what is "irreducible" or "fundamental". On this view, reality is constituted by certain irreducible or fundamental facts; and in denying reality to a given domain, the antirealist is claiming that its facts are all reducible to facts of some other sort. Thus the ethical naturalist will claim that every ethical fact is reducible to naturalistic facts, the logicist that every mathematical fact is reducible to facts of logic, and the phenomenalist that every fact about the external world is reducible to facts about our sense-data."

I think this is exactly right: there is an important distinction between the two notions and they are two-way independent. In ethics, for example, you may be an expressivist without being a naturalist or you may be a naturalist without being an expressivist.

For our purposes, the two notions may be distinguished by the relations expressivists and physicalists claim to hold between the domains of moral and psychological, and psychological and physical facts respectively:

**physicalism** : the mental is nothing over and above the physical, the world is fundamentally physical, attributions of mental predicates have physical truthmakers;

**expressivism** : moral language is not descriptive, not in the business of stating facts; to attribute wrongness to an action is to express disapproval of it.

In my view, the two claims have to be sharply distinguished, to understand one of them on the model of the other is to misunderstand them. It is a mistake to think that physicalism is committed to some claims about moral vocabulary or about what attributions of mental properties are 'about', and it is also a mistake to think that the perspectival character of moral thinking that motivates the expressivist has implications about the nature of values. The two positions sketched rather correspond to various brands of reductionism and relativism:

**reductionism / eliminativism** : psychological language is definable in terms of the physical; saying that Sam is in pain is attributing to him a certain brain-state; mental generalisations are not law-like, they do not carve nature at its joints;

**subject relativism / buck-passing** : what makes a certain act wrong is that we (or: idealised subjects) do (or: should) disapprove of it; moral properties supervene on psychological properties.

At least *prima facie*, the two distinctions thus cross-cut:

	factual	non-factual
unreal	psychology	morality
real	physics	

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## A step further: degrees of objectivity

Contrary to Fine, I think that there are two relations corresponding to the two notions of metaphysical reality:

**constitution** : If something is constituted by something else, it is a *manifestation* of the latter, an *aspect* of it, perhaps an *abstraction* of it. It is natural to take manifestations of other things to be “less objective” than them, “less substantial”, and it is a natural thought that these entities of a “lesser sort” do not *really* exist, that our ontological commitment is only to what they are constituted by, especially if “metaphysical reality is to be identified with what is “objective” or “factual”” (Fine 2001: 3). Constituted entities ‘borrow’ their objectivity, to the extent that they are objective, from what they are constituted by. This does not, however, make any one of them any less or more fundamental than the other: because the layers of reality are an objective matter, any thing is as fundamental as its manifestations.

**grounding** : If something is grounded in something else, it is *nothing over and above* its ground, in the sense that acknowledging the existence of the ground pays the “ontological prize” for the grounded entities too; accepting them in an ontological inventory that includes the grounds does not make it less parsimonious. Even if we restrict our notion of metaphysical reality to “what is “irreducible” or “fundamental”” (Fine 2001: 3), saying that some entities are determined by others *presupposes*, rather than does away with, the claim that they exist.

To the two metaphysical structuring relations, correspond two versions of Moore’s open-question argument:

**why**  $A \rightsquigarrow B$ ? : why should feature  $A$  give rise to feature  $B$ ? in virtue of what is it that something that is  $A$  also is  $B$ ? (compare Lewis’ question to Armstrong: in virtue of what does  $N(F, G)$  give rise to  $\forall x(Fx \rightarrow Gx)$ ?) To say that  $B$  is constituted by  $A$  is part of an answer to this question.

**why**  $\forall x(x \rightsquigarrow A \rightarrow x \rightsquigarrow B)$ ? : why should what makes something  $A$  *ipso facto* make it  $B$ ? (compare Euthyphro’s question: why should what makes the Gods love him also make him pious?) In virtue of what is  $B$  ‘nothing over and above’  $A$ ? To say that  $B$  is grounded in  $A$  is part of an answer to this question.

The main difference between constitution and grounding may be characterised metaphorically by their ‘direction’. Grounding is a vertical relation, as it were, structuring reality and non-reality in different layers, that are more or less fundamental. The physicalist says that psychological facts are grounded in physical facts, but may still believe that they are real: it is just that he does not believe they are fundamental, something else is sufficient for their existence. Constitution, however, is a horizontal relation, and connects to essence: what is constituted is not self-standing, in need of something else. It is not for this reason any less existent than what it is a manifestation of. Something else is necessary for its objectivity, but this does not entail that there is something else that is sufficient for its existence.

This distinction not only allows for forms of reductionism which are not eliminativist, but also for the category of the ‘unreal’ (i.e. non-objective, non-factual) and irreducible, which allows for disagreement about ‘subjective’ qualities and objects which is not *really* about their objective and factual bases.

## Vertical ‘grounding’: truthmaking as explanation by things

We use the words we have to make statements. In some cases at least, we want these statements to make assertions about the world. But we do not just want to speak *about* the world – we also want our statements to be true and to be true *because* the world is as it is. The truthmaking intuition that I shall explore in this paper may be taken to consist roughly of the following two tenets:

1. Truth is relational: being true is being *made* true by something.
2. Truth is grounded: true truthbearers are true *because* the world is how it is; truth is never brute.

These two tenets are interrelated: the relationality of truth means that the grounds must enter into true ascriptions of truth; the groundedness means that the other relatum of such ascriptions must be of an ontological, rather than say of an epistemological or representational nature.

We should accept the demand for truthmakers, I will argue, because understanding truth as a derelativisation of a metaphysically prior relation of truthmaking allows us to explain *why* “[n]o sentence is true but reality makes it so” (Quine 1970: 10). This *sui generis* type of explanation has been overlooked (Daly 2005; Liggins 2005), when enemies and false friends of truthmaking argued that weaker truthmaking principles than maximalism (every truth made true) may satisfy our demands for explanation and that the truthmaker principle should be weakened to some general supervenience claim, providing ‘truthmaking without truthmakers’. True supervenience theses are in need of explanation and only a cross-categorical relation of robust truthmaking can explain *why* there is

a strong modal correlation between what is true and what there is.

The principal motivation of truthmaker theorists, I submit, is the following: truth has to be grounded in reality – which means that it has to be explained by *things*. Therefore, truthmaking – explanation by things – has to be distinguished from explanations why some sentences (including sentences ascribing the truth-predicate) are true.

Such a theory of truthmaking as explanation by things is explanatory in two ways: it is an explanatory theory of *truth*, and it explains how truths are grounded in reality. Truthmaker theory (TT) is a version of the correspondence theory of truth and deserves to constitute the core of any realist metaphysics.

It is a mistake to think that TTT needs to be motivated by recourse to the thesis that for every true sentence there must be some explanation of why it is true. Opponents of TTT are right in saying that explanations not citing truthmakers may do this job. Consider the explanatory ties between the following four sentences:<sup>1</sup>

- (1) Sam is a dog.
- (2) “Sam is a dog” is true.
- (3) “Sam is a dog” is made true by Sam.
- (4) “Sam is a dog” has a truthmaker.

I agree, with Aristotle and both outright opponents and (even somewhat sympathetic) critics of TTT that (2) because (1). I also agree with some critics of TTT that (1) is, so to say, ‘ok as it stands’.

Whether or not (1) is itself in need of an explanation or of a sufficient reason – of a causal or some other kind – is not a question of concern to TTT, while it may of course be an interesting question for other types of metaphysical theories.<sup>2</sup> Because I think that TTT is an explanatory theory of truth, I also agree with its critics that (3) because (2) and hence that (3) because (1). Because (4) is obviously true because of (3),<sup>3</sup> (1) is explanatorily and thus metaphysically prior to all of (2), (3) and (4). So far so good: at least within TTT, “there is no explaining the truth of propositions” (MacBride 2005: 134) like (1).

Opponents of truthmaker theory forget, however, about two other ways in which TTT is explanatory. It is, first, an explanatory theory of *truth*, an account of what truth is, and, second, it’s central explanandum, the truthmaking relation, is *itself* a species of the explanation relation, i.e. explanation by things.

TTT is an explanatory theory of truth in virtue of the claim that truth is a derelativisation of a metaphysically prior cross-categorical relation of truthmaking: being true is nothing but being made true by something.

TTT explains the nature of truth in virtue of being a *formal* theory of the truthmaking relation, not by its material part that specifies what the truthmakers are. Opponents of TTT have to tell us what truth is.

Truthmaking without truthmakers will not achieve this task: while to say that some truthbearer *x* is true iff *p*, for some sentence “*p*”, may be an statement of a criterion of material adequacy for definitions of the truth-predicate for some language (Tarski 1935) or the schema for the axioms of a theory about what we are competent of if we grasp the concept of truth (Horwich 1990), it is not a theory of the *property* of truth.

Understanding truthmaking as a species of explanation by things thus explains why TTT purports to be an explanatory theory of truth and also allows for an argument in favour of truthmaker maximalism. The explanatory potential of TTT goes even further than this: not only is it an explanatory theory of truth, but it also explains truths, though not in the way its critics take it to do.

It is a mistake to think that the explanations of truths offered by truthmaker theory are claims to the effect that they have such-and-such truthmakers. Consider:

- (5) Sam is a dog because “Sam is a dog” is made true by Sam.
- (6) “Sam is a dog” is true because it is made true by Sam.
- (7) “Sam is a dog” is true because of Sam.

As opponents of truthmaker theory have pointed out and I have conceded above, both (5) and (6) are false. (7), however, is true and provides an explanation of why “Sam is a dog” is true.

<sup>1</sup>On some theories of truthmaking, the truth of (3) depends on whether Sam is essentially a dog. I am concerned in the following with the question *whether* there are truthmakers, leaving aside the conceptually posterior question *what* entities these truthmakers are plausibly taken to be. Even arch-enemies of the weakest, supervenience-only forms of truthmaking, such as Julian Dodd (2002: 72) and Joseph Melia (2005: 69), admit that singular existentials and essential predications have truthmakers (cf. also Lewis 1992: 216).

<sup>2</sup>Fetridge’s truthmaker principle (“For every sentence which is true there must be some explanation of why it is true”, 1990: 42) is to be rejected, or, at least, does not help motivate truthmaking theory. While I agree with critics of TTT – with Daly (2005: 100) that “invoking truthmakers for truths does not thereby explain those truths”, with Liggins (2008: 179, 186) that “for every truth, there is something in virtue of which it is true” does not motivate TTT because the relevant explanations do not have to be in terms of something’s existing, but could be in terms of something’s being such-and-such (cf. also Liggins 2005) –, I think they are mistaken in taking their sound points to count against TTT.

<sup>3</sup>I suppose this is readily conceded by all sides (already Descartes remarked that existential generalisations are true because of their instances). TTT explains why this is so; opponents of TTT owe us an explanation.

Horwich (2008: 267) and Schnieder think that TTT is committed to (5). Liggins (2008: 190) thinks that truthmaker theorists who think that the truthmaking relation is explanatory are committed to (5) or (6)<sup>4</sup> But in fact they are committed only to (7).

As has been argued above, (7) has to be understood as requiring the present (actual) existence of Sam for the present (actual) truth of the sentence ascribing doghood to it. We will now argue why it is because the sentence is *now* true (i.e.: is *now* made true) that there must be something *now* responsible for its truth. This is not because of any special principle that exhibits an anti-presentist (and anti-possibilist) bias, but because being true *is* (nothing but) being made true.

That truthmaking is a species of explanations by things has been seen more clearly by its enemies than by its defenders:

Nothing, no thing, makes sentences and theories true: not experience, not surface irritations, not the world, can make a sentence true. That experience takes a certain course, that our skin is warmed or punctured, that the universe is finite, these facts, if we like to talk that way, make sentences and theories true. But this point is put better without mention of facts. (Davidson 1974: 194)

This is a denial of the truthmaker requirement precisely because no *things* are provided as truthmakers – what is inserted into the right-hand argument place of “...is made true by ...” is the nominalisation of a sentence, not a singular term. Truthmaking is taken to be a species of the sentential “because” connective, not the prenective “because of”, standing between a sentence (made true) and a singular term (for the truthmaker).<sup>5</sup>

There are a number of criticisms against an identification of *being made true* with *being true because of*. One may doubt, first, that there is such a thing as explanation by things. A long-standing tradition, from Kant to Brandom and McDowell holds that explanations necessarily stay within the realm of reason. TTT is opposed to that tradition, and derives from this very opposition the right to claim to be a version of the correspondence theory of truth.

## Horizontal ‘grounding’: ontological dependence and the problem of extrinsic essences

Possibly, the conflation of grounding and constitution (and the related conflation of determination and of dependence) is motivated by the failure to distinguish between intrinsicity and relationality, i.e. between the questions whether a given property of something is intrinsic or extrinsic to this thing and whether it is a relational or a non-relational property of it. Distinguishing the two question will, I hope, make room for **intrinsic relational** properties of grounded, and thus determined things that are nevertheless fully real, i.e.

Aristotelian substances;

**extrinsic non-relational** properties of constituted, and thus dependent things that nevertheless have their own being, as it were, and are not reducible to anything else.

### Intrinsicity

The ‘scare quotes’ approach: Intrinsic properties of *a*

1. are / account for / ground ‘how *a* is by itself’, are exemplified by *a* ‘in virtue of the way it is in itself’;
2. make for genuine similarity, are ‘non-disjunctive’, have ‘non-gerrymandered’ extensions;
3. are shared by *a* and its duplicates / replicas / perfect copies.

Theoretical roles: Intrinsic properties

1. are qualitative natures of combinatorial units;
2. make for real, as opposed to Cambridge change;
3. do not entail, nor are entailed by the existence of any other things wholly distinct from their bearers.

**Definition 1** (Lewis<sub>1</sub>-intrinsicness). *F is intrinsic iff for all x and y, if x and y have the same natural properties, then Fx iff Fy* (Lewis 1983: 26).<sup>6</sup>

<sup>4</sup>(6) is an instance of McFetridge’s principle mentioned above. Rodríguez Pereyra (2005) argues from (6) to the truthmaking principle.

<sup>5</sup>This is particularly clear in theories that analyse truthmaking as a type of grounding, rendering “*x* makes it true that *p*” as “*p*, because *x* exists” or, or alternatively, as “the truth of *p* is grounded in the existence of *x*” (cf. e.g. Correia 2005: §3.2 and Schnieder 2006).

<sup>6</sup>Lewis (1986: 60) tentatively suggested that the natural properties could be characterised as a minimal supervenience base for any properties whatsoever.

**Definition 2** (Lewis<sub>2</sub>-intrinsicness). *A property  $F$  is intrinsic iff for all  $x$  and  $y$ , if  $x$  and  $y$  have the same pure, non-disjunctive and non-co-disjunctive properties independent of loneliness and of accompaniment, then  $Fx$  iff  $Fy$  (Lewis & Langton 1998).<sup>7</sup>*

There are at least four main problems with the Lewis/Langton account:

1. haecceitistic properties (the exemplification of which implies the existence of particular individuals) are not independent of accompaniment (Dunn (1990: 186), Sider (1996: 4), Humberstone (1996: 240) and Yablo (1999: 487)): they are had in only one world if particulars are world-bound.
2. properties involving relations across possible world (*having a duplicate in the world in which one exists and being a duplicate of Kofi Annan's*) are independent of accompaniment and non-disjunctive and are falsely classified as intrinsic.
3. disjunctive properties: *being such that there is a cube* is independent of accompaniment and falsely classified as intrinsic (Marshall & Parsons 2001: 3) if it is non-disjunctive, i.e. not much less natural than either *being a cube* or *being accompanied by a cube*. But Lewis & Langton (2001: 354) bite the bullet.
4. maximal properties (Sider 2001): A property  $F$  is *maximal* iff, roughly, large parts of an  $F$  are not themselves  $F$ . If *being a rock* is maximal, it has intrinsic duplicates which fail to be rocks because they are parts of rocks. So *being a rock* is extrinsic. As it is independent of accompaniment, however, Lewis has to claim that it is disjunctive, which does not seem very plausible. He is, however, prepared to bite the bullet (Lewis 2001: 382).

Lewis (2001: 387) proposes a less permissive criterion for ‘bad disjunctions’ (properties expressed by disjunctive predicates which are not intrinsic): a property is (badly) disjunctive iff it is equivalent to a disjunction such that each disjunct is more natural (not: much more natural) than the whole disjunction. He also makes a new attempt to characterise bad disjunctions directly, thereby cutting down his reliance on contentious judgements of comparative naturalness. The new definition runs as follows:

**Definition 3** (Lewis<sub>3</sub>-intrinsicness). *A property  $P$  is intrinsic iff (i)  $P$  is independent of accompaniment, (ii)  $P$  is at least as natural as ( $P \wedge$  being accompanied), (iii)  $P$  is at least as natural as ( $P \wedge$  being lonely), (iv)  $\neg P$  is at least as natural as ( $\neg P \wedge$  being accompanied), (v)  $\neg P$  is at least as natural as ( $P \wedge$  being lonely).*

More general problems:

1. *having an  $F$ -part* (for things with proper parts that exemplify  $F$  intrinsically) are intrinsic only if duplication of wholes requires duplication of their parts, which is debatable;<sup>8</sup>
2. *being a proper part of an  $F$*  (for things which are proper parts of things that exemplify  $F$  intrinsically) come out extrinsic, if we accept the supplementation principle;<sup>9</sup>
3. *having  $a$  as a part*:  $a'$  is a super-duplicate of  $a$  iff  $a$  and  $a'$  are duplicates and any part of  $a$  has a (similarly located and qualitatively indiscernible) part of  $a'$  as its counterpart (Humberstone 1996: 242). But this does not allow for counterpart relations heeding extrinsic similarities. Alternative (Bricker 1993: 274): in order for a part  $b'$  of  $b$  to be a  $(a, b)$ -duplicate of a part  $a'$  of  $a$ ,  $b'$  does not only have to be a duplicate of  $a'$ , but also be related to other parts of  $b$  in a way similar to how  $a'$  is related to the other parts of  $a$ .
4. No extrinsic essential properties.

In all Lewis-definitions, “how a thing is by itself” is translated into “how a thing would be if it were lonely”. This transition, however, is far from being mandatory: Another possible way to spell out the “by itself” clause, as Sider’s examples show, is to count those features of a thing as intrinsic that are determined by what goes on inside its borders, i.e. on how its parts are and in what relations they stand. This point is well made by Humberstone:

“...the idea of an intrinsic property is the idea of a property a thing has in and of itself: but *considering* a thing *in itself* is not the same as *supposing* the thing to be *by itself*.” (Humberstone 1996: 229)

<sup>7</sup>A property is pure iff its exemplification does not imply the existence of anything else than the thing exemplifying it. Something is accompanied iff it does not coexist with a contingent wholly distinct thing and it is lonely iff it coexists only with its proper parts (if it has any). A property is independent of loneliness (accompaniment) iff it is both possible that it is had and that it is lacked by a lonely (accompanied) thing. A property is *disjunctive* iff it can be expressed by a disjunctive predicate but is not natural and much less natural than either of its disjuncts. The pure, non-disjunctive and non-co-disjunctive properties independent of loneliness and accompaniment are called “basic intrinsic” by Lewis and Langton. Def. 2 says that a property is intrinsic iff it supervenes on basic intrinsic properties, or, equivalently, iff it never differs between duplicates (where two things are duplicates iff they have the same basic intrinsic properties).

<sup>8</sup>Consider a parallel case with essential properties. Suppose I have a heart and it is organic. It may be essential to me that I have a heart and essential to my heart that it is organic, but not essential that I have an *organic* heart – I could have an artificial heart (though, this would not be a counterpart of my actual heart). In this case, I will have counterparts that have hearts that are not counterparts of my heart.

<sup>9</sup>I.e. that, if  $a$  is a proper part of  $b$ , then they have a mereological difference (the common part of all things overlapping  $b$  but not overlapping  $a$ ).

Two concepts of loneliness:

**loneliness as independence** :  $x$  is lonely in this sense iff it exists all by itself, i.e. if nothing other exists than its (proper and improper) parts;

**loneliness as interiority** :  $x$  is lonely in this sense iff all things outside it are abstracted away and the thing is considered ‘in isolation’.

Achille Varzi (1997: 42) distinguishes (topologically) “open” and “closed” entities, i.e. entities which include their boundaries and those that do not. Houses and rocks, if *being a house* and *being a rock* are maximal, are closed – the open counterparts of a house which are embedded in a larger house are not houses, for they lack (counterparts of) parts the original house had, namely its boundary. The boundary of the house, however, is not a part of the house, but it is part of the house considered in isolation.

Turning the tables: A substance is something which has intrinsic properties – intrinsic properties are properties had by substances.<sup>10</sup>  $a$ ’s *intrinsic nature* is the fusion of all those properties it has intrinsically. It is a (non-spatiotemporal) part of it; the intrinsic nature of a part is then ‘included’ in the intrinsic nature of the whole. We could even use inclusion of intrinsic natures to *define* what it means to say that  $y$  is part of  $x$ .

**Definition 4.** *A particular  $a$  is a substance iff it is a counterpart of a world.*

Any substance has intrinsic properties and thus an intrinsic nature:

**Definition 5.**  *$F$  is the intrinsic nature of a substance  $a$  iff it is the fusion of all universals that are part both of  $a$  and of all counterparts of  $a$  which are worlds.*

A substance is a maximal spatio-temporally interrelated whole; an intrinsic nature is a maximal nonspatiotemporal part of a substance.

## Relationality

The ‘scare quotes’ approach: Non-relational properties of  $a$

1. do not ‘essentially mention’ other things than  $a$ ;
2. do not ‘stem from’ metaphysically / conceptually / explanatorily prior relations  $a$  has;
3. are ‘genuinely monadic’;

Theoretical roles: Non-relational properties

1. are wholly qualitative: their nature is exhausted by how the things that have them are;
2. are non-haecceitistic: may be shared by distinct indiscernibles;
3. are pure, i.e. do not ‘essentially’ involve individuals.

**Definition 6** (Implicational relationality).  *$P$  is impure iff  $\exists R \exists y \forall x (Px \leftrightarrow Rxy)$ .*

Problem (cf. Khamara (1988: 146) and Humberstone (1998: 218)): If we introduce the predicate “tinthree” by the following definition:

$$\forall x, y (x \text{ tinthrees } y \leftrightarrow (x \text{ is made of tin} \wedge y \text{ is the number } 3))$$

the property of being made of tin comes out as impure because, necessarily, something is made of tin iff it tinthrees 3. Let us, following Humberstone (1996)’s rephrasing of Dunn (1987) and Dunn (1990), call a property “Dunn-pure” iff it is, whenever it is truly predicated of  $a$ , a relevant property of that individual, i.e. a property such that the hypothesis that an arbitrary  $x$  is  $a$  relevantly implies that  $x$  has the property.

**Definition 7** (Dunn purity). *A property  $P$  of  $a$  is Dunn-pure iff for all  $x$ , if  $x$  is  $a$ , then  $x$  is  $P$ .*

The class of Dunn-pure properties is closed under negation, conjunction, disjunction, (relevant) implication and even under relevant implication of arbitrary formulae (e.g. if  $a$  is relevantly  $F$ , then it is relevantly  $F$  and such that  $\phi$ , because any formula  $\psi$  relevantly implies  $\psi \vee \chi$  in **R**) (Dunn 1987: 362–363).

Dunn (1990: 185) objected to Lewis’ account of intrinsic properties as those invariant under duplication that the property *being a duplicate of  $a$*  will come out intrinsic:

“...Lewis in conversation has responded to my complaint that *being a perfect duplicate of  $b$*  turns out to be an intrinsic property on his account. As best as I can recall his reply, he thinks that this is

<sup>10</sup>Cf. Langton (1998) but also Rosefeldt (2001).

perfectly fine. Although the property is *identified* with reference to *b*, *in itself* it amounts to only an infinite conjunction of intrinsic properties of *a*, and hence is itself intrinsic.” (Dunn 1990: 203, n. 7)

Relational properties are properties that are individuated with reference to relations (Hochberg 1988: 196): to say that, generally and as a matter of logical truth, if  $a = b$ , then  $\lambda x(aRx) = \lambda x(bRx)$ , we need to quantify over relations.<sup>11</sup>

## Cross-cutting

Examples of the relational intrinsic:

1. *having a as a part*
2. the value of Diana’s dress
3. *being of a crime* of some punishment

Examples of the non-relational extrinsic:

1. *not being accompanied by a unicorn*
2. *being all there is*
3. *being surprising* of an event

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<sup>11</sup>The reason why loving-Superman and loving-Clark-Kent is one and the same property (and Lois Lane, as a matter of logic, exemplifies one iff she exemplifies the other), is that Superman is Clark Kent; therefore, the properties are not atomic, but derelativisations of the prior relation of loving.

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