The Lump and the Ledger: Material Coincidence At Little-to-No Cost

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Abstract
This paper aims to make headway on two related issues- one methodological, the other substantive. The former concerns cost-benefit analyses when applied to metaphysical theory choice. The latter concerns material coincidence, i.e., multiple objects occupying the same space at the same time, such as the statue and the clay from which it's made. The issues are entwined as many reject coincidence on the grounds that it's costly. I argue this judgment is unjustified. More generally, I set out and defend a framework for the use of cost-benefit analyses in metaphysics. The framework employs a four-fold division of pretheoretical costs and benefits (inconsistency or consistency with common sense), and theoretical costs and benefits (loss or gain of theoretical virtues such as simplicity). Yet these do not hold equal weight. Instead I argue that the appeal to theoretical benefits is illegitimate if the theory in question cannot first account for the relevant evidence or data, including, crucially, certain bits of pretheoretical or common knowledge. This is crucial because I not only argue that material coincidence is consistent with common sense, against what is widely believed, but that coincidence may even be a feature or implication of the common sense view. Put together, the result is that accepting an anti-coincidence theory for its putative theoretical virtues at the expense of common sense is an improper usage of the cost-benefit methodology. I instead conclude that material coincidence should be accepted with equanimity- which, after all, is free.

1. Introduction

In economics, business, and finance, cost-benefit analyses are used to decide between various projects or investments, such as whether to lower interest rates, purchase a rival company, or upgrade a factory's machinery.[1] Though the details can be immensely complicated the basic idea is quite simple: because projects or investments involve spending money (costs) and, hopefully, making money (benefits), the question inevitably becomes just how much. So, much like the utilitarian calculus is used to discern which action yields the greatest balance of pleasure over pain, a cost-benefit analysis is used to discern which project or investment yields the greatest balance of benefits (money in) over costs (money out).

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[1] For canonical textbooks on cost-benefit analyses, see Mishan & Quah (2007) and Boardman et al (2010). For reflections and commentary see the articles collected in Adler & Posner (2001).

Since the influential opening pages of David Lewis' *On the Plurality of Worlds*—

wherein Lewis declares the benefits of a reductive account of modality to be worth the cost

of having infinitely many worlds in one's ontology (1986, p. 4)—cost-benefit analyses have

become popular in philosophy as well- in particular when choosing between theories.

Markosian (2008) even suggests that "choosing among alternative philosophical theories

always involves a cost-benefit analysis" (p. 359, my emphasis). The underlying idea appears to

be an analogy: choosing a theory, like choosing an investment, stands to yield both costs and

benefits. So when comparing theories, just as when comparing investments, one must weigh

the costs and benefits to make the optimal choice.[2]

Now, it is far from obvious that the analogy is a strong one: there are many

differences between economic and philosophical cost-benefit analyses (henceforth CBAs),

and as a methodology the philosophical CBA is, in my view, in need of considerably more

defense than it has received.[3] Even so I will put aside the general issue and instead bring out

one particular disanalogy between the monetary and philosophical cases in order to set up

the project of this paper.

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[2] The analogy is no doubt encouraged by Lewis' (1986) many rhetorical flourishes, including his claim that "the price is right" for modal realism (p. 135) provided that the benefits cannot "be had more cheaply elsewhere" (p. 5).

[3] For example, CBAs in economics and finance require costs and benefits to be expressed as quantities of a currency (dollars or Euros or yen, say), whereas costs and benefits in philosophy are not expressed via currency, or any quantities at all. Second, economic CBAs require all options to be expressed in a *common* (or convertible) currency in order for the options to be commensurable. But without a philosophical currency *a fortiori* there is no *common* currency that would allow for a direct (or quantitative) comparison regarding what exactly opting for one philosophical theory over another would cost (or gain). Third, an economic CBA is or approximates a decision procedure; there is a (nearly) step-by-step process for assigning monetary values to the various options and then reading off the optimal choice as that which maximizes monetary gains over losses (see sources cited in footnote 1). As far as I can tell, however, there is nothing resembling a decision-procedure for philosophical CBAs (partly, no doubt, because the lack of quantities or currencies makes it potentially unclear when one option is better than another). Granted, it is of course possible that these dis-analogies have no bearing on the effectiveness or legitimacy of a philosophical CBA, but that hardly can be taken for granted. Yet as indicated above, I am not aware of any serious or rigorous defense of the philosophical CBA in light of the many differences—and there are others besides those just listed—between monetary and philosophical CBAs.

Note that in economics and business it is unanimous and indisputable what counts as a cost and what counts as a benefit: money spent is a cost and money received is a benefit. But in metaphysics whether something counts as a cost or a benefit is itself subject to debate. For example, whereas many think it a cost to violate common sense, those inclined towards revisionary metaphysics might think common sense should be no constraint on theorizing. Similarly, Markosian (2008) considers it a cost to the theory of unrestricted mereological composition that it entails four-dimensionalism, and a benefit that it upholds traditional mereology. Yet many independently reject traditional mereology (not to mention the value of tradition more generally), and so may not see a benefit in keeping it. And insofar as many find four-dimensionalism independently worth arguing for a commitment to it need not rankle. Rather than take a stand on these disputes, though, what I wish to emphasize here is something more general: that the possibility of debate over whether something is a cost or benefit suggests the possibility of being *wrong* about whether something is a cost or a benefit. That is, costs and benefits being subject to debate creates the conceptual space for arguing that something presumed to be a cost may not be. And that's what I aim to do in this paper- argue that something often treated as a cost may not be.

That something is *material coincidence*, which occurs just in case numerically distinct material objects exactly occupy the same space at the same time. Perhaps the most prevalent example of (putative) coincidence is that of the statue and the lump of clay from which the statue is made: that the clay but not the statue can survive being flattened suggests the lump and statue are numerically distinct, despite existing in the same place at the same time. Though many accept arguments along these lines (to be discussed in more detail shortly), others are unhappy with the prospect of material coincidence, and either construct or adopt anti-coincidence theories by appealing to cost-benefit analyses that take material coincidence

to be *costly*, such that a theory benefits by rejecting it. Furthermore, this presumption has also

allowed philosophers to advertise or tout their theory's anti-coincidence features as selling

points.[4] When consulting their ledgers, the idea seems to be, shoppers in the market for a

metaphysical theory are expected to find the anti-coincidence option the economical choice.

    The central claim I defend in this paper is that this judgment is misguided. Instead I

argue that by the lights of the cost-benefit methodology, material coincidence does not incur

a cost that might otherwise need to be balanced out, such that its rejection does not confer a

benefit that might cancel out other costs. With the ledger appropriately altered, I conclude,

material coincidence may be accepted with equanimity- which, after all, is free.

    Making this case will require consideration of the cost-benefit methodology in

general as well as its application to the case of coincidence. Yet as just noted there is no clear

consensus on how cost-benefit analyses are supposed to work. So in §2 I set out and defend

a general framework for CBAs in metaphysics. The framework employs a four-fold division

of pretheoretical costs and benefits (inconsistency or consistency with common sense), and

theoretical costs and benefits (loss or gain of theoretical virtues). Then in §3 I show how the

problems typically associated with material coincidence map onto this division, thereby

explaining what coincidence is supposed to cost. This includes the appearance of a

pretheoretical cost, i.e., inconsistency with common sense. But in §4 I show this appearance

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[4] Sider (2009) provides a particularly good example; as a paper intended for undergraduates (as part of Blackwell's 'Contemporary Debates' series), the question of what motivates anti-coincidence theories is especially vivid. In particular, Sider uses the (supposed) absurdity of coincidence to motivate and justify adopting four-dimensionalism and the theory of temporal parts. (Cf. Lewis 1986; Heller 1990; Sider 2001; and McGrath 2007, who also motivate four-dimensionalism on the basis of coincidence-avoidance.) Adopting a revisionary conception of objects to avoid coincidence is not unique to four-dimensionalism, however. Others attribute to kinds (such as *statue*) hitherto unknown powers, including the ability to "dominate" other kinds (such as *clay*)- thereby suppressing the subordinate kinds' persistence conditions (Burke 1994; Rea 2000). Others take away familiar powers, such as an object's ability to survive the loss of its parts (Chisholm 1973). And some deny that (many) composite objects exist altogether (van Inwagen 1990; Merricks 2001).

is misleading: contrary to popular belief, coincidence is not inconsistent with common sense. In fact, I argue it may be a feature or implication of the common sense view. The result is that the only putative costs to coincidence are theoretical. But in §5 I argue that one cannot justifiably accept a theory solely for its theoretical virtues if that theory cannot first account for the relevant evidence or data, including, crucially, certain bits of pretheoretical or common knowledge. Conjoined with the results of §4, the implication is that accepting an anti-coincidence theory for its putative theoretical virtues at the expense of common sense is an improper use of the cost-benefit methodology. Properly understood, I argue, material coincidence can be accepted at no real cost.

2. A framework for costs and benefits

Despite there being no strong consensus on how exactly CBAs work in philosophy, some ways of understanding them will undoubtedly be less controversial than others. So what I'll do in this section is briefly set out and defend what I take to be a (relatively) uncontroversial way of understanding philosophical CBAs. In later sections I will elaborate on this framework, as well as apply it to the problems associated with material coincidence.

I'll start where there is probably the least amount of controversy. Consider what are often called 'theoretical virtues', such as simplicity, elegance, or explanatory strength. Simply calling them 'virtues', of course, signals that these traits are considered desirable, and it is these virtues that are often invoked in philosophical CBAs. Hence I will call a *theoretical benefit* a gain with respect to some theoretical virtue such as simplicity, elegance, or explanatory power, and *a theoretical cost* a loss or decrease of some theoretical virtue. Of course, that different virtues might be played off against each other—e.g. a theory might sacrifice

simplicity (a theoretical cost) but gain explanatory power (a theoretical benefit)—is compatible with this point.

I turn now to more controversial territory. I mentioned above that a theory's being inconsistent with common sense is often considered a cost. On the assumption that human beings are composites rather than simples, for example, mereological nihilism seems to imply that human beings do not exist- a seemingly costly implication. Similarly, although Lewis thinks modal realism is worth the cost of so many worlds in one's ontology, he concedes that its incompatibility with common sense is a cost nonetheless (and a "severe" cost at that; 1986, p. 135). I will accept this line of thought. Accordingly I will call a *pretheoretical cost* some theory or idea's being incompatible or inconsistent with common sense. Naturally, that makes upholding a pretheoretical tenet a *pretheoretical benefit.* As indicated earlier, though, those inclined towards revisionary metaphysics might think common sense should be no constraint on theorizing, such that there is no cost to violating pretheoretical verdicts.[5] If one does not take inconsistency with pretheory as a cost, though, then likely one has even fewer reasons to be dissatisfied with material coincidence; because I aim to show that material coincidence need not be costly I will take it for granted that inconsistency with common sense *is* a cost, on the grounds that this is a precept that those who are opposed to my thesis would likely accept.

Before moving on I should note a restriction: I will not consider it either a cost or a benefit for a theory to be consistent or inconsistent with what I will call 'intra-theoretic' beliefs or tenets. Consider for example Ptolemaic astronomy, according to which the earth is located at the center of the universe, with planets orbiting the earth in circular (or epicyclical) paths. Notice that to an adherent of Ptolemaic astronomy a tenet's being inconsistent with

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[5] For a recent example relevant to coincidence, Rose (2015) argues that folk intuitions regarding the persistence of objects over time are especially misguided.

circular orbits or geocentrism might seem costly to concede. But of course to someone

neutral or not antecedently committed to the theory, inconsistency with Ptolemy would not

appear costly. More generally I will not consider inconsistency with the tenets or

deliverances of a theory to incur costs when the appearance of this being a cost is dependent

on antecedently accepting the theory. The reason is that a cost-benefit methodology should

be neutral; even those who disagree about the substantive metaphysics should agree that

explanatory power is a theoretical virtue, for instance. So it is because common sense

consists of commonly (if not unanimously) shared beliefs or knowledge that it is a cost to be

inconsistent with them. Similarly, because virtues such as simplicity or explanatory power

can be recognized as benefits even by those who do not accept the theory that posses those

virtues, these too can be assessed via a CBA from a neutral point of view.[6]

So to briefly summarize, the framework I'll use going forward is this: there are

theoretical costs and benefits (lacking or possessing theoretical virtues), and there are

pretheoretical costs and benefits (being inconsistent or consistent with common sense), such

that a philosophical CBA involves weighing all four kinds in order to discern which

philosophical theory is the optimal choice.

3. Accounting for material coincidence

With this framework in hand I turn now to material coincidence, the main arguments

for which are likely familiar. One canonical line of argument begins by calling a lump of clay

'Clay', and the statue made from that lump of clay 'Statue'. From here there are several ways

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[6] Granted, if there are widely shared beliefs that result from some advanced theory but are neither pretheoretical nor purely a product of that theory, there might be room to talk of 'extra-theoretic' costs or benefits (with respect to those beliefs (rather than there only being theoretical costs and benefits with respect to theoretical virtues). But as far as I can tell this further distinction does not affect my main argument, and will be put aside.

to go. One variant relies on temporal differences. For instance, suppose Clay comes to be on Tuesday and Statue comes to be on Wednesday. Because they came to be at different times they are numerically distinct. A modalized version appeals to persistence conditions. Clay has the property of being able to survive a squashing whereas Statue does not. Different properties entail numeric distinction, so Statue and Clay are distinct. Still other versions appeal to other sorts of properties- that Statue is beautiful but Clay is not, or that Statue is a piece of art but Clay is not, and so on (Fine 2003; 2006). Many take these arguments to generalize to other artifacts (such as credit cards and plastic rectangles), natural objects (such as rivers and aggregates of water molecules), as well as persons and bodies (Baker 2002).

As indicated earlier, however, many see material coincidence as costly. But what exactly is objectionable or problematic about coincidence? In his survey of the literature, Wasserman (2015) suggests four reasons material coincidence has been found problematic. The first is the impenetrability objection. The idea, naturally enough, is that material objects are presumed to be impenetrable. There being two objects in the same place at the same time appears to violate this principle. The second is the extensionality objection. Extensionality demands any objects x and y that share all and only the same parts are identical, i.e., that there is a unique sum or composite for any set of parts. If Statue and Clay share all and only the same parts yet are numerically distinct, extensionality is violated. Third is the grounding objection. Given that Statue and Clay appear to share the same categorical properties (e.g. their non-dispositional and non-modal properties), it may appear that their differences are ungrounded, i.e., that there is nothing in virtue of which they differ. Such ungrounded or unexplained differences appear mysterious. Wasserman calls the fourth the "anthropic" objection, though this breaks down into two separable components. The first is what Sosa (1999) calls the "explosion of reality": although coincidence-friendly arguments

are generally only run for entities falling under familiar sortals (such as *statue* and *clay*, or *person* and *body*), the same arguments can be iterated to reveal the coincidence of astronomical numbers of unfamiliar objects. For example, let an *instatue* be a statue that cannot survive being taken outdoors, and let 'Instatue' be a name for one. Because Statue can survive being taken outdoors but Instatue cannot, they are numerically distinct. From here the "anthropic" worry (properly speaking) is that restricting coincidence to only familiar kinds—i.e., preventing the explosion—would be unacceptably anthropocentric. So moving forward I will distinguish 'the explosion problem'—that there are (so many) unfamiliar kinds in addition to familiar kinds—from 'the anthropic problem'- that rejecting unfamiliar kinds would display an illegitimate bias towards the familiar.

Given these five as the problems associated with accepting coincidence, the next question concerns their fit with the cost-benefit framework discussed above. As it happens the problems map onto this framework quite neatly.

Some mappings I take to be uncontroversial. Obviously the impenetrability problem threatens a pretheoretical cost; that matter appears impenetrable is a quotidian feature of the observable world, arguably something believed at a young age (rather than a conclusion drawn from philosophical theorizing, say).[7] So if coincidence is problematic on this score it is the pretheoretical conception of matter that explains why. Similarly, it would seem that the explosion would yield a pretheoretical cost; if it is problematic that there are so many unfamiliar or unusual objects surely it is because this conflicts with (or goes well beyond) our everyday view of the world.[8] Interestingly, however, avoiding the explosion's pretheoretical

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[7] Empirical studies—such as the famous experiments performed by Spelke (1988; 1990)—suggest that even extremely young children expect objects to be impenetrable. And if such expectations are innate or deeply ingrained, then it is no surprise material coincidence seems puzzling (even to adults).

[8] One might think the explosion incurs a theoretical cost insofar as having more objects is un-parsimonious. Parsimony is not typically understood in terms of token-cardinality, however (i.e. the

cost (by restricting coincidence to familiar kinds) would likely yield a theoretical cost. For if

only some sortals are instantiated (the familiar ones), the principle governing (or the pattern

underlying) what's familiar might seem clunky, arbitrary, or wildly disjunctive, or would

require taking some (additional) factor as a primitive in one's theory. Thus, taking on the

anthropic problem (by blocking the explosion) complicates one's theory and so invokes a

theoretical cost.[9]

As indicated, I take these classifications as uncontroversial. More controversial, and

what I will now argue, is that the extensionality and grounding problems only yield

theoretical costs. I present two arguments. The first is that relevantly similar extensionality

and grounding problems exist in other areas of philosophical interest and clearly risk

theoretical costs. The second shows these problems do not *also* risk pretheoretical costs;

rather than assume mutually exclusivity I argue each claim independently. In particular I

argue common sense recognizes multiple wholes with the same parts (extensionality

violations), and does not concern itself with (the consequent) grounding problems.

The first argument runs as follows. Recall that extensionality demands that any

objects x and y are identical iff they share the same parts. Objects are not unique in this

regard, however; the same generic notion of extensionality may apply to other kinds of

entities as well (*mutatis mutandis*). For instance, sets are extensional iff for any sets s and s',

s=s' iff they share all and only the same members. Properties are extensional iff for any

properties F and G, F=G iff F and G share all and only the same instances. For a third

example, propositions are extensional iff for any propositions P and Q, P=Q iff P and Q

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number of things). Instead parsimony is thought to be lost when adding different kinds of things, or
different kinds of explanatory principles, for example. Insofar as the exploding objects would just be
more of the same kind of thing—viz., composite material object—the explosion is not un-
parsimonious in the sense typically at issue.

[9] That the explosion and anthropic problems differ in their cost-benefit profiles is another reason to
distinguish the two aspects of what Wasserman treats as a single problem.

share the same truth-values at every world (or map the same worlds to the same truth-values,

or share the same members, etc., depending on the view of propositions one endorses).

Granted, one might doubt these cases invoke the same generic notion of extensionality, or

that the same sense of 'extensional' applies. But there is clearly thematic unity, and good

reason why the word 'extensional' is used throughout. Note that a function in the

mathematical sense necessarily yields a *unique* output for a collection or domain of inputs.

Whenever an entity is called 'extensional'—whether it be an object, property, set, or

proposition—that entity is taken to be a function or unique output of its inputs- whether it's

parts in the case of objects, instances in the case of properties, or members in the case of

sets. Extensionality in general is therefore a kind of "functionality". More on this shortly.

Regardless of whether these entities *are* extensional, however, the crucial point here is

that denying extensionality invariably threatens to incur a theoretical cost. If coextensive

properties (whether at a world or across worlds) can be distinct after all, for example, then

likely one must posit further entities or theoretical machinery (e.g. universals in addition to

sets of individuals, along with whatever ideology is needed to express the relevant

differences). Much the same goes for propositions. If for any propositions P and Q, P is

identical to Q iff they are true at the same worlds (or map the same worlds to the same

truth-values, etc.), it follows there is only one necessarily true proposition, and only one

necessarily false proposition (as P and Q would be true (or false) at the same worlds, viz., all

of them). Accounting for the intuition that there are many (distinct) yet necessarily

coextensive propositions might also require adjustments to ontology or ideology (e.g.

impossible worlds in addition to possible worlds, and/or new or different inference rules for

worlds governed by logical laws other than those obtaining in actual or possible worlds).[10] The conclusion is clear: in general, violating (or abandoning) extensionality yields a theoretical complication and so a theoretical cost. So it should be no surprise that when it comes to objects in particular (and the prospect of material coincidence), the violation of extensionality should also appear as a theoretical cost. Moreover, because extensionality is built into classical mereology, accounting for the fact of material coincidence (assuming, for the moment, it is a fact) would require complicated adjustments (e.g. new axioms, new inference rules, etc.)- which obviously yields a theoretical cost as well.

Closely related considerations show the grounding problem also threatens a theoretical cost. First note that there is a *prima facie* concordance between the extensionality and grounding problems. Although Wasserman describes the grounding problem in terms of properties, it can also be formulated in terms of parthood: just as it may appear mysterious that Statue and Clay share all and only the same categorical properties but differ in persistence condition, so too may it appear mysterious that Statue and Clay share all and only the same parts yet differ in their persistence conditions. On either formulation one might wonder what grounds the differences. The grounding problem is linked to the extensionality problem in another way as well: in fact, each example of possible extensionality-violations mentioned above can generate its own version of a grounding problem. If coextensive properties can be distinct one might wonder how this could be given that they share instances; what grounds the difference between properties if not their instances? One might

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[10] See Berto (2013) for an overview of nonclassical logics in relation to impossible worlds (as well as impossible worlds more generally). I do not mean to suggest, however, that this way of handling the phenomenon of "hyperintensionality" is mandatory, nor that impossible worlds must be understood as some radically different kind of thing (thanks to an anonymous referee for this journal for pressing me on this). That being said, what matters for my purposes is only that some sort of "heavy duty" theoretical machinery likely must be employed to handle the hyperintensional distinctions that, if absent, would make the world (and the theory that aims to model it) simpler.

also wonder what it is in virtue of that coextensive propositions can differ (and so on). Thus, a background picture (or assumption) of extensionality actually creates the (pre)conditions for a grounding problem. And this suggests the grounding problem threatens a theoretical cost for the same reasons as the extensionality problem.

An underlying principle explains the pattern. Above I pointed out that a function necessarily yields a unique output for a collection or domain of inputs, and that no matter what kind of entity is under consideration, an entity taken to be extensional is understood as a function or unique output of its inputs. So construed, extensional entities do not yield grounding problems precisely because the grounds (the inputs) determine the grounded (the output). Extensionality violations, conversely, violate what I called "functionality": if two objects can share all and only the same parts then the identity (and persistence conditions) of the object is not a function of its parts (or categorical properties) after all. And this clearly incurs a theoretical cost: not only is there the addition to ontology or ideology that extensionality-violations require, but the lack of functionality is bound to make the results seem mysterious (schematically, if x and y differ despite sharing all and only the same ϕs, what else could ground their differences?). Having to bring in some additional explanatory factor would complicate, whereas there being no such factor leaves the mystery unsolved.

So the extensionality and grounding problems yield theoretical costs. They do not also incur pretheoretical costs, however. For one, none of the grounding puzzles mentioned earlier are common sense puzzles; the folk do not wonder how necessarily true propositions might be distinct, say, or what individuates properties, or how modal properties might fail to supervene on categorical properties. This is not only due to inattention. There is also no reason to assume the folk share the background picture against which these cases would appear puzzling—e.g. that modal properties "should" be a function of categorical properties,

or that properties "should" be individuated by their instances—nor is there reason to assume

that the folk share the metaphysician's concern for maintaining functionality more generally.

So functionality-violations—exceptions to extensionality or grounding—need not yield

pretheoretical costs.[11]

Yet perhaps one might think that the folk might have grounding intuitions after all;

perhaps introductory metaphysics students find it intuitive that modal facts should be

grounded in non-modal facts, for example.[12] But such reports have to be treated with

caution. After all, and to amend an earlier-invoked example, a student of Ptolemean

astronomy might find it odd or counterintuitive that the orbits of heavenly bodies could be

anything but perfectly circular. Because I argued that (in)consistency with what I called

'intra-theoretic' tenets are excluded from consideration with respect to the CBA, however,

for the report of grounding intuitions to show a pretheoretical cost—rather than an intra-

theoretical cost—it would have to be ensured that these reports were genuinely

pretheoretical reports as opposed to the reports of initiands to a particular philosophical

theory. So how could one tell? My approach is simple: attend only to examples commonly

used outside "the philosophy room".[13] Yet upon doing so it is evident that common sense

positively recognizes, without mystery or reservation, distinct wholes with the same parts,

thereby accepting (*prima facie*) violations of extensionality. In fact, entire categories of familiar

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[11] Moreover, and as an anonymous referee for *Erkenntnis* points out, it is arguable that *not* violating extensionality (for propositions, at least) incurs a pretheoretical cost: insofar as common sense distinguishes necessary truths such as '2+2=4' and 'John is John', a simple or purely extensional system unable to account for their hyperintensional distinction might be pretheoretically costly. As defending this further claim is not necessary for my argument here, however, I'll put it aside.
[12] Thanks to another anonymous referee for *Erkenntnis* for raising this objection.
[13] This approach is partly motivated by research suggesting that experimental attempts to discern folk intuitions on matters of philosophical import may not be free from experimenter effects. For example, Korman and Carmichael (2017) criticize the "suggestive wording" of Rose and Shaffer's (2017) attempts to elicit folk intuitions on mereological composition, amongst other possible effects (such as those found by Cullen 2010).

entities seem to violate the idea that wholes x and y are identical iff they share all and only the same parts.

Social groups are a paradigmatic category here. Consider, for example, that the same eleven people can make up a company and its many distinct committees. Moreover, these same eleven people can make up the company's softball and soccer teams as well. Yet the folk will not claim that the softball and soccer teams are really the same team because they share the same players, or that they must be identical because nothing could ground their differences.[14] Put another way, if the folk having the extensionality-friendly grounding intuitions is a hypothesis, one should expect to see it claimed outside the philosophy room that the soccer and softball teams are the same team because they share the same players. Not seeing the prediction vindicated suggests the folk are not concerned by apparent extensionality violations. Similar examples exist in many other familiar categories or domains. Language is replete with such cases, for instance. Multiple sentences can be made up of the same words, and multiple words can be made up of the same letters (in at least two senses: distinct words can be made of the same letters in different order, such as 'vile', 'evil', and 'live', and distinct words can even be made up of the same letters in the same order, such as 'live' meaning 'not dead' and also 'broadcast in real-time'). Yet the folk will not claim that 'vile' and 'live' are really the same word because they share the same parts, or because nothing could ground their difference(s). Similarly, though perhaps taking 'language' metaphorically, two tunes can consist of the same notes.[15] Still another category is artifacts. A hardbound book can double as a doorstop. A desk can also be a table or chair. A sword

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[14] Varzi (2015) cites Simons (1987, p. 114) and Gilbert (1989, p. 273) as defending the view that distinct groups can have coextensive memberships. See also Ritchie (2015).

[15] Several of these examples are drawn from Varzi's (2015) survey on mereology; Varzi attributes to Hempel (1953, p. 110) and Rescher (1955, p. 10) that the same words can be composed of the same letters, and to Rosen and Dorr (2002, p. 154) that two tunes can consist of the same notes.

can be a walking-stick. Yet the folk will not say a book can't be a doorstop because it's a book, or because its parts already make up one thing they can't make up a second thing also.

Granted, a metaphysician might interpret these examples in other ways. For instance, a metaphysician might claim that a person and a team stand in a different kind of parthood relation than do an organ and an organism, and it is only the latter type of parthood relation that concerns the extensionality principle relevant to coincidence. Or, perhaps, a metaphysician might claim that distinguishing letter-types from letter-tokens (or word-types from word-tokens) might save extensionality in the linguistic domain. Or she might claim that the matter making up a book only constitutes one object, the book, which then has the accidental property of being used as a doorstop.[16] Even so, it must be emphasized that my claim is not that a philosopher cannot make such moves, but only that insofar as common sense is concerned the relation between parts and wholes is not extensional- from which it follows that allowing Statue and Clay to share parts—and so violate extensionality—does not incur a pretheoretical cost.

4. Material coincidence and common sense

In the previous section I showed how to understand the coincidence problems in terms of the cost-benefit framework: the impenetrability and explosion problems appear to incur pretheoretical costs, whereas the anthropic, extensionality and grounding problems incur theoretical costs. In this section I argue that regarding the former appearances are misleading, however. For I will argue that the impenetrability of matter is perfectly compatible with material coincidence. So despite appearances there is no pretheoretical cost

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[16] Again, see Varzi (2015) for a survey of such responses. For "compositional pluralism"—the view that there are different kinds of parthood relations—see McDaniel (2010).

regarding impenetrability. Similarly, although the explosion seems to threaten a pre-theoretical cost, I will argue the culprit is not coincidence itself but a supplementary or auxiliary claim. But that claim, I argue, is not a folk concern. So despite appearances I conclude there is no pretheoretical cost to allowing material coincidence.

4.1. Impenetrability and common sense

Suppose the builders of a castle declare it impenetrable. It proceeds to repel all attacks, corroborating the claim. Yet unbeknownst to the builders, enemies were hiding on the grounds on which the castle was built; the castle, it turns out, was built around them. The enemies launch a surprise attack and take the castle. Has the castle's impenetrability been impugned? Of course not; the enemies didn't penetrate the castle- they were already inside.

At the risk of stating the obvious, I'll note that something is impenetrable if it cannot be penetrated. Some x is penetrated, however, only if some y outside the boundary of x moves through the boundary of x. (That is, for y to penetrate x at time t there must be some previous time t-n when y was outside the boundary of x.) Some x is impenetrable, therefore, if nothing outside the boundary of x can move through the boundary of x. I belabor the point because its implication seems to have been missed: namely, that material coincidence is perfectly compatible with matter being impenetrable. For Statue does not start its career outside Clay's borders and then later moves in. More generally, coinciding objects are not border-penetrating objects. So coincidence does not impugn the impenetrability of matter.

One might concede the point yet think I'm being myopic by focusing on the (literal) meaning of 'impenetrable'. For the more general worry associated with impenetrability can be understood as based on something like the following principle (expressible without the word 'impenetrability'): that no two objects can exist in the same place at the same time. And

coincidence does seem to violate this pretheoretical principle (even if nothing moves from outside to inside, as above).

But this objection fails. First, if one asks *why* it is that no two objects can exist in the same place at the same time, I suspect the answer is because matter is supposed to be impenetrable. But put that aside. For even as a matter of common sense the 'no two objects' principle requires qualification. For instance, nobody believes a knee and leg can't be in the same place at the same time. Yet these are numerically distinct; after all, legs have thighs as parts but knees don't. So unless the 'no two objects' principle is refuted by mundane cases of partial overlap, the folk principle is better understood as something like 'no two wholly distinct, non-overlapping, or spatially separate objects can exist in the same place at the same time.' But if *that's* the folk principle then even if Statue and Clay *can* exist in the same place at the same time this is irrelevant to the folk principle—and so not a counterexample—because Statue and Clay are not wholly distinct, non-overlapping, or spatially separate objects.[17,18]

More broadly, the point is this: the impenetrability problem, and the related if not underlying 'no two objects' principle, have only a superficial appearance of a pretheoretical cost- an appearance based on misunderstanding what impenetrability or the 'no two objects' principle amounts to. Properly understood, material coincidence is perfectly compatible with the impenetrability of matter and the 'no two objects' principle.

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[17] One may think cases of partial overlap (such as a knee and a leg) do not involve material coincidence (unlike total overlap), in which case the knee/leg example has no force here (thanks to __ for this objection). But this misconstrues the point of the example, which concerns only folk principles (and not coincidence per se). In particular, the idea here is simply that familiar cases of partial overlap show that the folk do not hold some unqualified or unrestricted principle regarding numerically distinct objects in the same place (regardless of what counts as full-fledged coincidence).

[18] Here I differ slightly from Hirsch (2002, p. 116), who claims the 'no-two-things-in-a-place' principle is a hasty generalization, understandably made but false due to overlap cases. As I construe it, however, the folk principle is true but restricted, not false but unrestricted (cf. previous footnote).

4.2. Unfamiliar kinds and common sense

As argued previously, the explosion problem seems to incur a pretheoretical cost; allowing the coincidence of Statue and Clay seems to bring with it a commitment to the coincidence of huge numbers of unfamiliar or strange objects. As Bennett (2004) artfully puts it, if we are "two thingers" we must be "bazillion thingers" as well.

That said, the explosion is not generally taken to be a *logical* implication of accepting coincidence; instead, one might accept coincidence and argue, for other reasons, that coincidence only occurs in certain cases (e.g. Korman 2010). This is important here because it allows one to place the blame on something other than coincidence itself. To see this, compare the case of (mereological) composition. Obviously common sense takes there to be composite objects. Yet imagine one argued that by accepting *any* composition one is thereby committed to *unrestricted* composition, i.e., mereological universalism. Insofar as unrestricted composition yields an ontology far more expansive than common sense recognizes, however, one might be pushed towards accepting the view that composition runs afoul of common sense after all- with the result being, perhaps, that only mereological nihilism— according to which there are no composite objects—is, somehow, the common-sense view. But this is wrong. For it is not composition itself that generates the conflict with common sense, but rather the supplementary or auxiliary claim that common sense's (or any) commitment to composition entails its prevalence or extent beyond what is commonly recognized. But not only would denying this further principle not incur a pretheoretical cost, it would incur a pretheoretical benefit insofar as the restricting principle would uphold the common sense view. That taking on such a restriction principle might incur a *theoretical* cost (due to a loss of elegance or simplicity, say) does not change the relationship of composition to common sense. From here the suggestion is simply that the same argument applies to

coincidence as well, *mutatis mutandis*: even if the auxiliary or supplementary principle that

justifies restricting coincidence to common rather than uncommon objects incurs a

theoretical complication or cost, this would not show coincidence itself to incur a

pretheoretical cost. Thus, even by the lights of the explosion worry, coincidence does not

incur a pretheoretical cost.

So the situation is this: despite it appearing that the impenetrability and explosion

problems would incur pretheoretical costs, I have argued they do not. The result is that there

is no pretheoretical cost to allowing coincidence.

Still, one might be uneasy with this conclusion. For it might seem like a natural thing

to say, pretheoretically, that 'Statue' and 'Clay' are really just two names for the same thing,

and/or that it would be weird or counterintuitive to say Statue and Clay are distinct, or that,

more simply, it just seems that they are the same thing- from which it would seem to follow

that there must be some pretheoretical cost associated with coincidence after all.[19]

But this is not the case if the pretheoretical impression is based on a mis-

understanding. Consider an example. Suppose several laypeople say they think bachelors can

be married. Would this show that common sense not only rejects the analyticity of 'all

bachelors are unmarried' but also its truth? Not necessarily. For if the people in question are

under the erroneous impression that 'bachelor' means something like 'a man who likes to

have fun', there would be no reason to think that laypeople reject the truth or analyticity of

'all bachelors are unmarried' in the standard or proper sense. Similarly, suppose the reason a

layperson finds it weird to say Statue and Clay are distinct is that it seems like there isn't

enough room for both of them. But if so, this would suggest that it is the belief that

coincidence would violate the impenetrability of matter that makes coincidence seem weird.

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[19] Thanks to _____ for this objection.

But as I've just argued, this impression is a mistake, and so would not show coincidence to

be pretheoretically weird any more than someone using 'bachelor' to mean 'a man who likes

to have fun' shows that in the standard sense 'no bachelor is married' is not only not analytic

but false.[20] More generally, this suggests a (putative) folk report of coincidence sounding

weird can't be taken as relevant to pretheoretical costs without making sure the perception is

not based on a misunderstanding of what coincidence is or involves. And this in turn

underscores why it is important to explain exactly why coincidence is supposed to be

problematic, as Wasserman does, or what about it would be weird (rather than resting

content with the report that it is).[21] And from here there are two options: either the relevant

explanations have already been offered but have been found wanting, or there is some other

reason, not yet canvassed, which explains what is pretheoretically problematic about

coincidence. As I am not aware of any other explanation, I can only conclude the appearance

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[20] Despite using this analogy to illustrate the possibility of an erroneous appearance of a conflict, I do not mean to imply these two cases are entirely analogous: for instance, in the 'bachelor' case it is stipulated that the key words are being used in different senses, whereas in the coincidence case 'coincidence' is (presumably) used uniformly. Yet the differences between the cases shouldn't be overplayed either. For it is independently plausible that the folk count differently than metaphysicians do (cf. Lewis 1976). In particular, note that expressions of identity and difference—e.g. 'is (not) the same thing as', 'is distinct from', 'are two not one'—are applied quite differently inside and outside the so-called "ontology room". Whereas the metaphysician's use of these (and cognate) expressions tends to be governed by a strict nonidentity of discernibles principle (where *any* difference between x and y is sufficient for numeric distinction), the folk tend to count things as distinct only if they do not overlap. (This explains, among other things, why one can enter the '12 items or fewer' line at the supermarket with trillions of subatomic particles in one's basket.) It is therefore plausible that the folk's pretheoretical interpretation of utterances such as 'Statue and Clay are distinct' is something like 'Statue and Clay exist (or could exist) in separate or non-overlapping regions of space'. And yes this does sound weird! But of course this is not actually what those who uphold coincidence think, and this is not what they mean to say. So were this misunderstanding the reason for coincidence sounding weird, yet again the sense of weirdness need not be accounted for lest one incur a cost. Thanks to an anonymous referee for this journal for discussion on this point.

[21] Another reply might help here. According to Anscombe (1971, p. 151), someone once said to Wittgenstein that people think the sun goes around the earth because it looks that way. To which Wittgenstein replied, in effect, 'and how would it look if the earth went around the sun?'. Adapted here, the idea is that Statue and Clay being distinct wouldn't seem any different than their being identical. Thus, pointing out that they seem identical, pretheoretically, is not sufficient for establishing that denying their identity would incur a pretheoretical cost, as the same seeming could just as well support their being pretheoretically non-identical. Instead, as argued above, there would need to be a reason, beyond the mere seeming, for taking coincidence to incur a pretheoretical cost.

of a pretheoretical cost to coincidence is erroneous.

Still, one further objection might be pushed here. For one might think that even if I'm right that the appearance of a pretheoretical cost is misleading, one must theorize in order to come to this conclusion. And this would suggest that there's a pretheoretical cost to coincidence even if, ultimately, the cost is fully answered or explained away, all things considered.[22]

But this isn't the best way to think about the prima/ultima facie distinction here. Consider: even if it's worth spending five dollars up front to make ten dollars later, spending that five still counts as a cost- even if it's ultimately worth it. But this is quite different than misreading a price tag and so being wrong about (the appearance of) an initial five dollar cost. Applied here, my claim is that thinking there's a pretheoretical cost to coincidence is more like misreading a price tag than an initial expenditure that's later compensated by a greater return. More succinctly, rather than there being pretheoretical costs to coincidence that are ultimately overridden (in light of theoretical considerations), there are simply no (real as opposed to apparent) pretheoretical costs at all.[23]

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[22] Thanks to an anonymous referee for *Erkenntnis* for this suggestion.

[23] Nonetheless, a worry about the methodology underlying my claim here might remain. For one might think that in order to say there is no pretheoretical cost one is (or I am) relying on theoretical knowledge, which raises the further worry that when opponents of coincidence try to explain away conflicts with intuition, friends of coincidence cannot wave those off without considering their theoretical responses. But there is a difference between 'theorizing' in the sense of reflecting or (abstractly) characterizing, on the one hand, and employing theoretical knowledge in order to revise a datum on the other. Consider: to show that coincidence is not really incompatible with the impenetrability of matter I did not rely on special theoretical terms or vocabulary (of the sort that might need definition via a Ramsey sentence), nor did I rely on the (putative) truth of some theoretical doctrine or tenet, such as relying on geocentrism in order to overturn an apparently heliocentric-supporting observation. Rather, I simply attempted to suss out what the common sense view is- for example, by pointing out that common sense does not deny that overlapping objects, such as a knee and leg, can exist in the same place at the same time. That said, how to achieve theory-neutral rather than theory-laden descriptions of the coincidence-relevant pretheoretical evidence is an important matter that I don't wish to underplay. Accordingly, I will discuss this matter in greater depth in the next section. Thanks to an anonymous referee for this journal for pressing the objection.

5. Theoretical costs, neutrality, and common knowledge

I have argued that material coincidence is not inconsistent with common sense, as is often supposed. This thesis, if accepted, would shift the calculus regarding the adoption of anti-coincidence theories: to the extent that anti-coincidence is motivated by the threat of pretheoretical costs, my arguments clearly imply that by the lights of a cost-benefit analysis, the anti-coincidence position loses support. Of course, that is not to say that the anti-coincidence position loses *all* its support, nor that there are no further reasons for adopting the anti-coincidence view. In this last section, however, I will suggest that by the lights of a CBA, further motivational problems loom for the anti-coincidence position.

First, recall that a CBA is supposed to be a neutral methodological tool that would allow one to assess whether to adopt a theory. Also recall I argued that maintaining 'intra-theoretic' tenets cannot motivate adopting a theory: for example, because maintaining consistency with Ptolemaic astronomy will be desirable only for an antecedent adherent, the ability to explain away apparent threats to the Ptolemaic system cannot motivate adopting the theory. So along similar lines, denying coincidence on the grounds that doing so would maintain an extensional mereology, for example, would also be excluded by the lights of the CBA- for seeing an extensional mereology as desirable requires an antecedent attachment to a theory such as classical mereology.

So if maintaining pretheoretical as well intra-theoretical tenets are not proper motivations for adopting an anti-coincidence view, then with respect to the CBA the last remaining option would appear to be adopting the theory for the sake of theoretical benefits.

But there's a problem here. For in at least some cases the pursuit of theoretical benefits cannot legitimately motivate the adoption of a theory if that theory does not first meet a certain explanatory standard. If so, and if coincidence were such a case, then a CBA

would not warrant the denial of coincidence solely for the sake of theoretical benefits.

Conjoined with my previous arguments, then, this argument, if sound, would imply that by

the lights of a CBA one does not benefit by rejecting coincidence.

Both parts of the argument—that in some cases seeking theoretical benefits for their

own sake is unwarranted, as well as the particular claim that coincidence is such a case—

may be controversial, and space precludes a full defense here. Nonetheless, and even if the

considerations provided here are not ultimately decisive or apodictic, they do suggest that a

genuine problem looms for the adoption of the anti-coincidence view.

I'll start with the general methodological claim; why should one think that in some

cases one cannot adopt a theory solely for the sake of theoretical benefits? Korman (2009)

provides a supporting case. According to Korman,

> one must distinguish the question of what best explains our evidence from the
> question of what our evidence is. Ockham's razor speaks only to the former. For
> instance, Ockham's razor instructs us to prefer a theory on which a single intruder
> left both sets of footprints (other things equal); but if no single-intruder theory can
> explain both sets of footprints, one cannot conclude on the basis of Ockham's razor
> *that there is no second set of footprints…* The question of whether the second set of
> footprints… should be counted as part of our evidence needs to be decided *prior to*,
> and *independently of*, appeals to Ockham's razor. In short, Ockham's razor instructs us
> to prefer more parsimonious accounts of our evidence; it does not instruct us to
> prefer accounts of what evidence we have that lend themselves to more
> parsimonious explanations (p. 251–2, my emphases).[24]

I take Korman to be suggesting the following: because the question of what the evidence is

is prior to the question of what theory best explains that evidence, it would be a

methodologically illegitimate use of simplicity (Ockham's razor) to invert this order—i.e., to

first pick the simplest theory, and then, on that basis, say the evidence must be other than

what it appears—such as one would if one said that the relative simplicity of the one-

intruder theory warrants the assertion that there are not really two sets of footprints. If so,

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[24] I have also removed Korman's original emphasis of the phrase 'on the basis of Ockham's razor'.

two important implications follow. One is that theories that are too simple to account for

the evidence are not supported by considerations of simplicity; rather, Ockham's razor is

used legitimately only when one prefers the simpler theory of those that can explain the

(antecedently determined) evidence.[25] The second is a correlative constraint on the use of a

CBA: namely, that the comparative simplicity of the one-intruder theory does not yield a

theoretical benefit over the two-intruder theory, and, as a result, cannot motivate adopting

the theory irrespective of what it can account for or explain.

     Again, space precludes a full defense of these principles, so I will simply flag my

assumption that I think Korman is right, at least for cases relevantly similar to the footprint

case just described. Still, it is worth addressing a likely objection: that requiring the data or

evidence be determined prior to the question of what theory best explains it would render

the data infallible or un-revisable. For one might instead think the data could be wrong, or at

least subject to revision in light of a theory. Practicing scientists might even do this, one

might think; if the facts don't fit the theory, it has sometimes been said, perhaps one might

change the facts.[26] And if so, then perhaps one could legitimately motivate the one-intruder

theory on the grounds that its simplicity would yield a theoretical benefit.

     I do agree data is often subject to revision, and, despite the stipulation of Korman's

hypothetical case, one can certainly amend the case or imagine one in which it turns out

there really aren't two sets of footprints after all. Perhaps, in the amended case, the glasses

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[25] Though perhaps easy to overlook, this point shouldn't be surprising. Discussion of the role of
theoretical virtues in theory choice emerged in the philosophy of science due to the possibility (if not
actuality) of empirical underdetermination (see e.g. Tulodziecki 2013, Lycan 1998, and Kukla 1994).
The idea, roughly speaking, is that if multiple theories each account for evidence, then the evidence
underdetermines which theory should be adopted. So how should one choose? This is where the
appeal to theoretical virtues is made: amongst those empirically equivalent theories that account for
the evidence, the simplest or most elegant theory, say, is said to be preferable. This line of thought
does not warrant choosing a theory for its virtues irrespective of what it can account for, however.
[26] This claim is sometimes attributed to Einstein, though the attribution appears apocryphal. I thank
an anonymous referee for *Erkenntnis* for pressing this objection.

through which one saw the footprints are smudged, or perhaps the evidence is an elaborate fake concocted by conspirators, or perhaps a mark on the ground only coincidentally resembles a footprint, or some other such possibility. What this suggests, however, is that if the data really is wrong, new data or evidence should emerge to prove it- such as the posited smudge on the glasses, or the conspirators' phone records. But if that were the case then any subsequent theory which failed to account for *that* evidence could only help itself to theoretical benefits prematurely. Put another way, even if the simpler theory is treated as a working hypothesis that might correct the data, this is to be confirmed by finding more data. But if no such data is found, to still say the data must be wrong because it doesn't fit the simpler theory would indeed invert the proper methodological order.

So if the general thesis is granted—that in at least some cases, one cannot appeal to theoretical virtues such as simplicity in lieu of accounting for the data—the crucial question becomes whether coincidence is relevantly similar to the footprints case. So why should one think it is? The argument starts with two assumptions. (Of course, those who reject the assumptions will likely reject the argument, but one has to start somewhere, and I take these as reasonable starting points.)

The first is that I assume the footprints in the intruder case are knowable through ordinary, everyday, means- means I take to be reliable. That is, I assume normal observers under normal conditions are not generally deceived about the footprints they see, such that under the usual application conditions or meaning of the word 'know', a normal observer can be said to know there are footprints present when observing them.[27] Second, I assume that the observation of footprints is (relatively) theory-neutral in a way that the observation

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[27] Of course, if one thinks one cannot know anything because one might be a brain in a vat then one likely rejects this argument. Bracketing radical skepticism, however, I assume one can speak of 'knowing' in everyday contexts, in the usual sense of the term, without worry of such defeaters.

of subatomic particles, say, is not. That is, whereas evidence for there being two sets of footprints is equally accessible to normal observers under normal conditions, evidence of subatomic particles may require considerable theoretical understanding and specialized equipment just to interpret the observable data. Of course, one might object on the grounds that all observations are theory-laden, and this is not a discussion I can take up here. Nonetheless, I trust many would accept there is some distinction to be made here between the ordinary and unaided way of knowing about footprints, as opposed to the specialized and (relatively) theory-laden way one comes to know about quarks.

Before advancing the argument further, note that these two assumptions help undergird the previous methodological claim. It is partly because one can be said to know, via ordinary reliable means, that there are two sets of footprints that the footprints are justifiably treated as data to be accounted for by a theory (such as the two-intruder theory). By contrast, in cases where observations are tied up with the theory, as is arguably the case with microscopic phenomena, the evidence/theory line may be less clear. This is one reason for the qualification or restriction of the principle to certain cases, such as those in which the data is accessible prior to explicit theorizing.

With that said, the next step extends the reasoning beyond the case of footprints to whatever is known through ordinary, reliable, means. For example, the claims that America is in the western hemisphere, or that red traffic lights mean 'stop', or that statues are works of art also seem to be known through ordinary means. Consequently, I assume that if a geological theory were unable to account for the datum that America is in the western hemisphere, or an aesthetic theory were unable to account for the datum that statues are works of art, I would take these as reasons to reject the theory, rather than adopt the theory and revise the apparent datum on the grounds that the theory must be right.

With that said, the next and final step in the argument is likely the most controversial. Previously I argued that coincidence is not inconsistent with common sense. Yet a stronger thesis may also be warranted: namely that coincidence is an *implication* of common sensical claims that are, arguably, knowable through ordinary means. Recall the standard arguments for coincidence, canvassed earlier- for example, that statues are unable to survive being smashed while lumps of clay can. This seems to be an ordinary conceptual truth, not fundamentally different than 'statues are works of art', to use the above example. Similarly, the argument that Clay comes to be on Monday but Statue only comes to be on Tuesday, or that Statue is a work of art but Clay isn't, seem to invoke no heavy-duty metaphysics, but only truisms about persistence conditions that any competent wielder of the concepts *statue* and *lump of clay* would know, as well as the anodyne meta-linguistic assumption that one can stipulate a name to denote an object- such as when one stipulates that one can call the statue 'Statue' (see Thomasson 2015; 2010 for defenses of this kind of view.) But if this is right, there would appear to be ordinary or pretheoretical *evidence* for coincidence- just as, in Korman's case, there is ordinary pretheoretical evidence for there being two sets of footprints. And if so, then the anti-coincidence theory that cannot account for that evidence or data would not yield theoretical benefits, even if simpler, just as the one-intruder theory cannot yield theoretical benefits if it cannot first account for the evidence of there being two sets of footprints.[28]

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[28] Note that this is not tantamount to a wholesale endorsement of "common sense", nor does this imply that a theory must account for *any* pretheoretical belief simply because it is pretheoretical. For the appeal to ordinary means of acquiring knowledge allows one to distinguish amongst claims said to be common-sensical. In particular, whereas some common sense beliefs may well be folklore or superstitions, say, other ordinary claims can be said to be matters of common *knowledge* (in the ordinary sense of 'know'). For example, while it may belong to common sense that what goes around comes around, say, this claim is obviously not on the same epistemic footing as the aforementioned claims that America is in the western hemisphere, or that statues are works of art. Consequently, I am not arguing that a theory must account for any and all common sense *beliefs* on pain of failing to

So to briefly summarize, the argument here is this. First, in Korman's intruder case, a CBA does not warrant adopting a theory for the sake of simplicity if that theory is not antecedently established as capable of explaining the data. Second, relevantly similar cases are those that involve knowledge acquired through ordinary (and so relatively theory-neutral) means. And third, the principles that imply the existence of coincidence are arguably knowable through ordinary means. From here the conclusion is that as far as a CBA is concerned, the anti-coincidence view cannot be motivated solely by putative theoretical benefits such as simplicity.

As indicated I do not intend to treat this argument as decisive, as it relies on several moving parts, many of which may be independently controversial and so in need of their own in-depth defense. Nonetheless, to ensure the argument's basic plausibility I will address a likely objection to my claim about the epistemic status of folk claims about coincidence.

The objection has two variants. In one, rather than the principles underlying the pro-coincidence view being straightforwardly knowable as footprints are, the principles can be construed as debatable metaphysical theses, subject to revision in light of metaphysical theorizing. The second denies that the pro-coincidence principles really are folk principles at all, but instead interprets the common sense view of coincidence as differing from how I've presented—or, perhaps, interpreted—the pretheoretical behavior.[29]

A prominent instance of this approach comes from David Lewis. I argued above that coincidence seems to follow from what appears as clear and straightforwardly knowable ordinary truths, such as 'Clay but not Statue could survive a squashing'. So to resist the claim

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account for the data, but, rather, it is only for those bits of common sense that are fairly described as *knowable* through ordinary means that a theory's failure to account for them is plausibly similar to a theory's failure to account for the footprints in Korman's case. I thank an anonymous referee for *Erkenntnis* for encouraging me to make this point more clearly.

[29] I thank an anonymous referee for *Erkenntnis* for pushing versions of these objections.

that 'Clay and Statue are distinct' follows, the anti-coincidence theorist must tell a (complicated) story about the workings of modal metaphysics and language. Lewis in particular attempts this by construing the speakers' context as referentially opaque, and the statements about Statue and Clay as surreptitiously employing non-univocal "Abelardian" predicates, thereby invoking context-dependent counterpart relations to relevantly similar beings in other (real and concretely existing) possible worlds.[30]

Though it might be obvious in light of how I presented the objection, it is nonetheless important to emphasize that if Lewis were right about modal language then it would turn out that the anti-coincidence view is not opposed to common sense after all, insofar as it would turn out that the folk have been speaking in a coincidence-unfriendly way all along. But if so, then there wouldn't be any *pre*theoretical costs for the anti-coincidence position to overcome; rather than the theoretical benefits of the anti-coincidence view cancelling out or being motivated by pretheoretical losses, as I suggested might be the case earlier, the anti-coincidence view, on this account, would actually accrue pretheoretical *benefits* for having explained the nature of the folk's anti-coincidence talk (according to this theory). So perhaps ironically this would seem to confirm, in a backhanded way, what I argued above: that theoretical benefits cannot be had in *opposition* to pretheoretical costs, at least in cases such as this. So either this suggests a problem with the cost-benefit methodology that aims to balance pretheoretical and theoretical costs and benefits—a claim which is beyond the scope of this paper to assess—or else, perhaps, Lewis' approach here runs afoul of the methodology outlined thus far.

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[30] The expression 'Abelardian' in this context is due to Noonan (1991), though Lewis himself uses the word 'inconstant'. Regardless, the idea is that predicates such as 'can survive being squashed' are said to have different meanings—or express different properties—when attached to 'Statue' or 'Clay'. See Bennett (2009, p. 61) on this particular point, and Barker and Jago (2014) for a recent critical discussion of this strategy more generally.

On this latter front, it is worth noting that Lewis does not actually claim to derive the identity (anti-coincidence) theory from the observation or datum that modal language is inconstant or Abelardian, nor does he posit the identity theory to explain the observation or datum that modal language is inconstant or Abelardian. Instead, Lewis first claims that Statue and Clay being non-identical is "absurd on its face" (1986, p. 252), and then, having taken anti-coincidence as thereby established, he goes on to posit the theory of inconstant modal predication in order to make sense of the identity claim, i.e., how it could be that Statue and Clay can be identical despite being the subject of apparently inconsistent predications (1986, pp. 252–253).[31] But then rather than treat the anti-coincidence theory as motivated by the goal of (virtuously) explaining the antecedently determined linguistic or epistemic data, it seems that Lewis, by first judging coincidence to be absurd, is motivated to construe the linguistic data in an anti-coincidence manner to fit his anti-coincidence stance. But as argued earlier, this seems to invert the methodological order, just as it would to adopt the one-intruder theory first and then deny there is a second set of footprints present.

Two replies are likely here. One is that one might think Lewis's method here is legitimate, perhaps on analogy with the one-intruder theory acting as a working hypothesis that might reveal that there wasn't really two sets of footprints at the crime scene after all. But two points speak against the analogy. For one, it is hard to see why one would insist that the very idea of there being two sets of footprints is absurd as Lewis takes the very idea of coincidence to be absurd. Second, and that aside, in the case of using the simpler theory to motivate revising the evidence, the data-revision relies on a temporal index; the evidence at one time is to be revised by evidence discovered at a future time. And even if forensics or science work this way, it's not clear that metaphysics does; there may not be more

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[31] Sider (2009) also motivates anti-coincidence by calling coincidence absurd; cf. footnote 4.

discoverable data or independent testing that would reveal that modal language really works

as Lewis says it does, akin to later discovering that conspirators planted or erased footprint-

related evidence in the amended version of Korman's case. And if not, then it remains

plausible to suspect the anti-coincidence position is construing the evidence to fit the theory,

rather than adjusting the evidence in light of new evidence, and then theorizing accordingly.

That said, the second reply is something of a *tu quoque*, or, perhaps, a claim of parity:

even if Lewis is coloring the linguistic or epistemic folk evidence in an anti-coincidence way,

perhaps one might think I am simply coloring it in a pro-coincidence way.

Now, if it was simply an inevitability that any way the folk evidence is presented is

partisan or theory-laden (rather than theory-neutral), this likely would obviate any attempt to

use a CBA. For if the general goal of a CBA is to provide a way to consider the overall costs

and benefits of a theory from a neutral point of view, i.e.., from the standpoint of someone

who has not yet but is looking to adopt a theory, then the lack of there being a neutral way

to describe what evidence needs to be accounted for would be deeply problematic. For if

amongst the benefits a theory might accrue is its virtuously explaining or accounting for the

evidence or data, then to compare how virtuously each theory does its job there has to be

some way of separating the evidence to be explained from the theory that is explaining it.

Otherwise, if two rival theories each claim to be able to explain the evidence, but it is also up

to each theory to interpret and decide what that evidence is, it is hard to see how one could

neutrally adjudicate which theory explains the evidence better- in which case one could not

know what one stands to lose or gain by adopting one theory over the other.

So how to break the circle? It seems to me the best bet is to aim to describe, as much

as possible, folk language and knowledge by dint of quotidian examples rather than what is

(or isn't) said about philosophically contentious cases. Similarly, it seems to me, one ought to

strive to describe folk language and knowledge without heed to whether such construals would allow one to maintain 'intra-theoretic' tenets such as an extensional mereology. Accordingly, following these methodological precepts is what I have tried to do in this paper- e.g. by considering what is (or isn't) said about soccer and softball teams sharing all and only the same players, or by aiming to discern whether folk principles are consistent with each other (rather than with philosophical or theoretical tenets), such as whether folk beliefs about persistence conditions are consistent with the folk belief in the impenetrability of matter.

Of course, it might still be the case that other interpretations of folk principles or knowledge may be better than those I've offered, and/or one might find independent reasons to think that what the folk seem to know is not knowledge at all. Nonetheless, I do think it fair to say it would be methodologically unsound by the lights of a CBA to reinterpret or deny those principles because it would allow one to maintain antecedent principles or adopt a simpler or more elegant theory.

With that said, perhaps it is a mistake to even use CBAs, or perhaps it is a mistake to pay heed to what seems to be known pretheoretically, as mentioned at the outset. Justifying such methodologies is beyond the scope of this paper, however. So instead, what I have tried to do is show that if one accepts the cost-benefit methodology as it seems to be employed in metaphysics (or as seems to be implied by what metaphysicians have said on the matter), the result is that there seems to be no significant theory-neutral cost to accepting material coincidence, and no significant theory-neutral benefit to rejecting it.

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