Naturalness in Context

Elanor Taylor

Introduction

According to proponents of one influential account of metaphysical naturalness, properties fall along a spectrum from perfectly natural to highly non-natural. The *perfectly natural* end of the spectrum is occupied by properties that appear in the laws of nature, account for resemblance and causal powers, and ground other properties, whereas the *highly non-natural* properties at the spectrum's other end are not like this at all.[1] Metaphysical naturalness is a common commitment in contemporary metaphysics, and has been used to solve a variety of philosophical problems.

However, there is another phenomenon that *looks* very much like metaphysical naturalness but is context-dependent. I call this phenomenon *context-dependent naturalness*. In this paper I describe two cases in which inappropriate use is made of metaphysical naturalness and argue that in such cases, the context-dependent importance of certain properties has been confused for the context-independent importance of those properties. I argue that in order to avoid such problems we should embrace context-dependent naturalness.

Section 1 introduces metaphysical naturalness. Section 2 describes two problem cases in which appeals to metaphysical naturalness are over-extended and offers a diagnosis of what goes wrong in these cases. According to this diagnosis, we can avoid such mistakes if we embrace context-dependent naturalness. Section 3 sketches an account of context-dependent naturalness, and Section 4 considers a series of objections.

Section 1: Metaphysical Naturalness

The concept of naturalness was famously invoked and elaborated by David Lewis, according to whom perfectly natural properties are *"an elite minority of special properties"*… *"the ones whose sharing makes*

[1] This David Lewis's notion of naturalness. See Lewis, D. (1983) One could recognize naturalness without endorsing every element of Lewis's view, such as that there are perfectly natural properties, or that all perfectly natural properties account for causal powers.

for resemblance and the ones relevant to causal powers".[2] According to Lewis there is a spectrum among properties, one end of which is occupied by a privileged group that appear in the laws of nature, account for resemblance and causal powers and ground other properties, and the other end of which is occupied by properties that are not like this. The former are the *perfectly natural* properties, and the latter highly *non-natural* properties. For example, on this view, the property of *being negatively charged* is more natural than the property of *being to the left of the Eiffel tower on a Wednesday*. Those who believe in metaphysical naturalness hold that the perfectly natural properties pick out objective distinctions in reality, or to use a common metaphor, 'carve at the joints' of reality. Some authors have extended the Lewisian notion of metaphysical naturalness, including Theodore Sider, who has recently developed and defended a neo-Lewisian notion of *structure*.[3] According to Sider reality has intrinsic structure, and certain, 'joint-carving' representations pick out that structure.

Commitment to metaphysical naturalness is popular among metaphysicians, and naturalness has been used to solve philosophical problems about a range of issues, including laws of nature and reference.[4] The idea that some properties are metaphysically natural is also intuitively pleasing. It nicely captures the commonly-held idea that *green* is in some metaphysical sense more important than *grue*, or that *being negatively charged* is in some metaphysical sense more important than *being to the left of the Eiffel tower*. Naturalness does, however, have its detractors. Some are suspicious of the idea that naturalness is a metaphysical primitive, and Hawthorne and Dorr have recently argued that some of the distinct roles supposedly played by Lewisian naturalness are incompatible.[5] But overall, naturalness and its analogues have proved to be valuable and fruitful philosophical concepts with strong intuitive and theoretical support.[6]

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[2] Lewis, D. (1983) pg 347. Although Lewis coined the term "natural property" he credits some others with introducing similar ideas, including Armstrong and Bealer. See Lewis, D. (1983) footnote 6.

[3] Sider, T. (2011) Some hold that naturalness applies to predicates, others to properties. Sider argues that someone could endorse his conception of "structure" without believing that there are any properties at all, and points out that *"The notion of structure is to be free of commitment to abstract entities."* Sider, T. (2011) pg 85.

[4] For discussion of a range of different applications of Lewisian naturalness and Siderian structure see Chapter 3 of Sider, T. (2011)

[5] Dorr, C. & Hawthorne, J. (2013)

[6] For the sake of ease I will use the term "naturalness" for both Lewisian naturalness and for Siderian structure. It will be made explicit when the differences between the two notions become relevant to the discussion.

Despite the usefulness and plausibility of naturalness, however, appeals to naturalness can go wrong. Perhaps because it is so useful and plausible, naturalness is often over-extended and asked to play roles that it cannot perform. In Section 2 I describe two problem cases from recent work by Sider in which he expands upon and extends Lewis's conception of naturalness. I will argue that even if we believe in naturalness and take it to be a valuable posit, we should agree that in these cases naturalness is required to play certain roles that it *cannot* play. Then, in Section 3 I show that we can avoid problems like these without abandoning naturalness.

Section 2: Naturalness Gone Wrong

In this section I will focus on the work that Sider has recently called upon metaphysical naturalness to perform in accounts of explanation and confirmation. For each of these roles that he asks metaphysical naturalness to play, I will offer an example in which (I will argue) metaphysical naturalness cannot do the job; instead, something context-dependent is required. In the case of explanation, my example will concern anthropological explanations; in the case of confirmation, my example will concern connections between political events and stock market values.

Problem Case 1: Explanation

Sider argues that attempts at explanation fail when they fail to "carve the joints". As he puts it, *"Theories based on bizarre, non joint carving classifications are unexplanatory even when true."*[7][8] As an example of such a theory, Sider describes an attempt to use a function relating the motion of the planets to stock market performances to *explain* the motion of the planets in terms of the market's fluctuations. This attempt at explanation fails, Sider argues, because (among other things) the classifications on which it is based badly fail to carve reality's joints.[9] Even if we agree with Sider about this particular case (I do agree that this function would not be explanatory) there are reasons to be suspicious of the general principle that theories based on bizarre, highly non-natural classifications are

[7] Sider, T. (2011) pg 23

[8] One might wonder whether Sider intended this statement to be understood as a generic claim, which would be true even if *some* explanations based on bizarre, highly non-natural classifications are successful, rather than a universal. Sider initially states this as a claim about theories, from which the claim about explanation follows, and the claim about theories is made explicitly as a universal. …"*good scientific theories, whether or not they cite laws, must be cast in joint-carving terms."* Sider, T. (2011) pg 23

[9] Sider, T. (2011) pg 23

unexplanatory. There are clear counterexamples to the principle, cases in which a successful explanation is based on a classification that is bizarre and highly non-natural.

A good example comes from some recent anthropological research into certain social practices in the Highlands of Papua New Guinea.[10] In the Highlands of Papua New Guinea clothing pockets are significant not just for storage but also as indicators of wealth and the capacity to give to others. As a legacy of the gift economy in this area people often feel under pressure to give money to acquaintances they meet in public, and having a bulging pocket of money puts a person at risk of having to give their money away. Accordingly, most people adopt a system of arranging money in different pockets upon their person, with high-value notes hidden in pockets under clothes next to the skin, and lesser amounts distributed in more visible pockets. This practice of distributing money across pockets is accepted as part of reasonable financial management, but extreme versions of the practice are frowned upon. For instance, those who wear clothing with many pockets (say, more than three) are regarded as disreputable. "Six-pocket woman" is a derogatory term for a woman who wears clothes with many pockets, and women who wear clothes with many pockets are commonly thought to be casual prostitutes.[11]

To return to the question about explanation, if I ask, "*Why was this woman from the Highlands of Papua New Guinea shunned by her family and church congregation?*" the answer "*Because she was thought to be a six-pocket woman*" is explanatory and without the category "six-pocket-woman" the explanation cannot go through. Yet the category "six-pocket-woman" is decidedly non-natural. (One might immediately ask whether or not this category is truly bizarre. This is an important question and I will return to it at the end of this section, after considering a second problem case.) This case presents a counterexample to the principle that explanations based on bizarre, highly non-natural classifications are unsuccessful. This is a familiar point in philosophy, and has been made by many authors about similar cases.[12] Regardless of its familiarity, however, it shows that this attempt to tie explanatory success to naturalness has failed.

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[10]Pickles, A. J. (2013). This research was also featured on an episode of the BBC social research radio show *Thinking Allowed*.

[11] In this Papua New Guinean pop song it is claimed that the women of a certain area "six-pocket" too much: www.youtube.com/watch?v=0KNMlxaxjFw

[12] By e.g. Fodor, J.A. (1974); Putnam, H. (1965)

One could argue that in this case the central classification is "thought to be a six-pocket-woman" rather than "six-pocket-woman". If "thought to be x" is an important psychological category then it is plausible that it is at least reasonably natural.[13] If what stands in for "x" in "thought to be x" makes no difference to its naturalness, then this explanation is based on a reasonably natural classification rather than a bizarre classification after all. However, this objection does not take account of the fact that "thought" is a determinable of which "thought to be x" is a determinate. Psychological theories about "thought" in general may include theories about how thoughts are formed and stored, for example, regardless of particular content. But theories about *particular* cases of "thought to be x" do not permit substitution of just any instance for x. For instance, theories about thoughts of physical violence, or memories of trauma, differ significantly from theories about thoughts of a happy childhood. Furthermore, some cases of "thought to be x" are more central to psychological theorizing than others (especially for clinicians) including thoughts about traumatic incidents, abuse and suicide. If psychological theories are at least reasonably joint-carving, then given that such theories treat thoughts about different content differently, it is implausible for the content of the thought to make no difference in naturalness.

Perhaps this case does not pose a challenge to Sider's connection between explanation and joint-carving, because, read strictly, his claim is about the basic notions of the theory in which the explanation is formed, rather than the central notions of the explanation itself. As he puts it, "*Theories whose basic notions fail badly to carve at the joints fail badly as theories…"*[14] On this line of thought, showing that some successful explanations cite non-joint-carving categories is no challenge to Sider's view unless it can also be shown that those categories are *basic notions* of the relevant theory. However, there are many cases in which the basic notions of a theory are non-joint-carving but where the theory is highly explanatory. For instance, consider cases in which the relevant notions are extrinsic *functional role* categories. Functional role categories are defined in terms of the output they produce in response to a particular input, and the second-order property of having a property that plays a particular functional role is (at least in many cases) an extrinsic property.[15] Consider, for example, the case of "transaction" in economics, which is a basic notion of economics. For some entity to "be a transaction" is for it to have a property that plays that particular functional role, and "being a

[13] And Sider regards special science categories as reasonably natural. See Sider, T. (2011) pg 29.
[14] Sider, T. (2011), pg 23
[15] We need not assume that all functional role categories are extrinsic in order to accept that some obvious cases, such as the economic transaction, are extrinsic.

transaction" is an extrinsic property. Perfectly natural properties are intrinsic properties, and so the extrinsic property of "being a transaction" cannot be a perfectly natural, or joint-carving, property.[16] "Transaction" is a basic notion of economics and yet it is an extrinsic functional role category and so cannot be joint-carving. If we endorse Sider's view, then because the basic notions of economic theory include non-joint-carving categories, and because theories whose basic notions are not joint-carving cannot be explanatory, we should also deny the possibility of successful economic explanations. But this is clearly implausible as there are successful economic explanations, and there are successful explanations based on the category "transaction". Even if we adopt this looser interpretation according to which only the basic notions of a theory must be joint-carving in order for the theory to be explanatory, the principle connecting explanation to naturalness still faces counterexamples.

Problem Case 2: Objective Bayesianism

Sider has proposed that metaphysical naturalness has a role to play in Bayesian epistemology. In order to explain this proposal, I will present a very basic overview of Bayesian epistemology.[17]

Credences are degrees of belief in a proposition and *prior probabilities* or *priors* are the credences we have before we receive a particular piece of evidence. According to the Bayesian, in order to make good, rational use of evidence, we must update our priors in light of new evidence in accordance with a particular rule.[18] There are two different kinds of Bayesian with two different approaches to forming credences. Subjective Bayesians, roughly speaking, think that all there is to forming credences properly is updating your priors in accordance with the Bayesian rule.[19] Objective Bayesians, on the other hand, hold that in order to form credences properly we must update our priors appropriately

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[16] Lewis recognized problems associated with including intrinsicality in the definition of naturalness and so re-formulated this commitment in terms of duplication. See Lewis. D. (1983) pg 355-357 and Dorr, C. and Hawthorne, J. (2013), Section 2.

[17] Not everyone who endorses naturalness need endorse Sider's claims about explanation, or about Objective Bayesianism. These are instructive case studies that serve two purposes: first, they indicate the need for a context-dependent notion of naturalness, and second, they us warn against over-extending metaphysical naturalness.

[18] *"Bayes' Theorem says that the posterior probability for a hypothesis H1, conditional on evidence E, is just the prior probability of H1, times the likelihood of E on the supposition of H1, divided by the prior "expectedness" of E (which is just the weighted sum of: prior probabilities in the each hypothesis times the likelihood of E on the supposition of each hypothesis)."* Kotzen, M. (unpublished), pg 4

[19] E.g. Jeffrey, R. (1992)

and those priors must also meet certain restrictions. One of these restrictions is assigning higher credence to simple hypotheses.[20] There is much more to say about Bayesianism, but this rough summary is all we need to understand Sider's proposal.

Sider is interested in Objective Bayesianism, and in the claim that we should assign higher credence to simple hypotheses. He notes that whether or not a prior is simple depends on the language used to evaluate simplicity. For example, a prior about "grue" may be simple relative to a grue language but complex relative to a green-blue language. Sider recommends that the best way to understand the requirement that simple hypotheses be assigned higher credence is as the requirement that the language we use for evaluating simplicity should be chosen for its naturalness.[21] As he puts it *"… we need some way to pick out appropriate languages for evaluating simplicity, symmetry and related notions. And… it seems reasonable to pick them out using the notion of structure."*[22] The language we use to evaluate simplicity need not be a language of *perfectly* natural properties in every case. But, generally speaking, we should use naturalness to pick out the language that we use to evaluate simplicity.

However, there are clear counterexamples to this claim that we should use naturalness to pick out the language that we use to evaluate simplicity. For instance, consider a person who is forming credences about a complex economic proposition. For example, consider a person who is deciding how to vote in the referendum on Scottish independence that took place on September 18th 2014, and who is considering economic reasons for and against voting for independence. As part of this process, the person forms a credence about this proposition: "If the Scottish independence referendum goes to a 'yes' vote, the FTSE 100 share index will drop by 0.27% the following day." The person also forms a credence about this proposition: "If the Scottish independence referendum goes to a 'yes' vote, the Royal Bank of Scotland will move its Edinburgh headquarters to London." If we wish to evaluate this person's priors for simplicity, the language we should use must include categories such as "Scottish independence referendum" (the more-joint-carving "referendum" will not do as a substitute because this particular referendum is the important one), "value of the FTSE 100 share index on September 19th 2014" (the more-joint-carving "share index" will not substitute as this particular share index is the relevant one, and only this date will do) and "Royal Bank of

[20] e.g. Jaynes, E. (2003)
[21] Sider, T. (2011) pg 38
[22] Sider, T. (2011) pg 38

Scotland" (essential that it be this bank rather than "bank" in general because of this institution's particular role in the Scottish financial industry). This is very far from a language of perfectly natural properties. Furthermore, it is clear from these examples that moving *closer* to a language of perfectly natural properties will not make the language more appropriate for evaluating this person's priors. So we have a counterexample to the position that the language we use to evaluate simplicity should be picked out on the basis of its naturalness.

However, what if Sider's proposal is not that we *must* use a language of joint-carving properties to evaluate our priors, but rather that it is *reasonable* to do so? If that is the proposal, then cases in which other considerations trump naturalness are not counterexamples. I will consider two different precisifications of this position: first, the claim that joint-carvingness is one virtue among many that should be balanced when choosing a language, just as theoretical virtues are balanced in scientific theory choice, and second, the claim that structure is one way to pick out a language for evaluating the simplicity of priors, but that there are other reasonable ways to do so.

There are three problems with the view according to which joint-carvingness is one virtue to be balanced against many, and I will describe them in order of seriousness. First, the text does not support this reading as Sider simply does not mention the strategy, though it may have been proposed implicitly. Second, two candidate virtues against which joint-carvingness could be balanced, simplicity and symmetry, are unavailable because they are virtues that joint-carvingness is itself supposed to track. Sider suggests that joint-carvingness will enable us to pick out the languages most suitable for evaluating simplicity and symmetry, and so joint-carvingness is not a virtue to be balanced against simplicity and symmetry. Third, and most seriously, the considerations against which joint-carvingness is to be balanced cannot be the contextual, interest-relative considerations at work in these counterexamples, because Sider explicitly states that the difference in virtue of which one prior is better than another must be objective.[23] These three considerations show that it is not the case that joint-carvingness is a virtue to be balanced among others when picking a language to evaluate priors.

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[23] "*But even if epistemic value is subjective along* some *dimensions, we shouldn't embrace the idea that it's subjective along all dimensions. Let Pr be a rational credence function we ought to adopt and Pr' be one that we ought not to adopt. Intuitively speaking, we might embrace subjectivity in the "oughtiness" of the obligation while rejecting subjectivity in the distinction between Pr and Pr'. The objective facts might not mandate that we have our notion, or any notion, of epistemic obligation, but might nevertheless mandate that we choose Pr over Pr'."* Sider. T. (2011) pg 38

Let us now consider the second version, according to which using joint-carvingness to pick out the language we use to evaluate priors is a reasonable thing to do, but there are alternative reasonable strategies. This faces two problems, again in order of seriousness. First, this is an implausibly weak reading of a text in which the author is recommending applications for structure, because claiming that it may be reasonable sometimes to *consider* structure is a very minor application. Even if we put this concern aside, however, we face a second problem. If we consider two priors, Pr and Pr', and Pr' is better than Pr, Sider states explicitly that the difference in virtue of which Pr' is better than Pr must be objective.[24] However, the reasons why the non-joint-carving language is the right language to use in this case are to do with the particular interests of the belief-former, and so are not objective. Even if there were some other ways to evaluate priors, but those strategies permitted us only to consider objective differences between priors, then we would not be able to accommodate such cases.

Diagnosis

In each of these cases a claim about metaphysical naturalness was made that turned out to be false. In the first case, the claim was that that explanations based on bizarre, highly non-natural classifications are always unsuccessful. In the second, the claim was that we should use naturalness to pick out the best language for evaluating the simplicity of our priors. Both of these claims faced counterexamples. If we are forming credences about a complex economic situation, the language we should use to evaluate the simplicity of our priors is not a language of natural properties, and moving closer to a language of natural properties can generate worse results. Similarly, if we are trying to explain a social phenomenon, an attempt at explanation in a language of natural properties would be *much worse* than an explanation in an anthropological language.

It may be tempting to respond to these cases by arguing that, while properties such as "six-pocket-woman" or "FTSE 100 share index on September 19th 2014" may not be *perfectly* natural, they are at least *reasonably* natural. Sider points out that the special sciences need not be based on perfectly joint-carving categories, only reasonably joint-carving categories. If these are true counterexamples, it

[24] See footnote 23.

must be shown not only that they are not perfectly natural, but also that they are not *reasonably* natural, and the latter is much more difficult than the former. I have two responses to this concern. "Bizarre" I take to mean: strange, complicated and highly non-natural. By these lights, "six-pocket-woman" simply is a bizarre classification, as is "FTSE 100 share index on September 19th 2014". Of course, there are *even stranger, more complicated and more non-natural* classifications than these, but that can be true while it is still the case that these are bizarre categories. Second, if it is true that explanations based on bizarre classifications fail, and that we should pick out languages to evaluate the simplicity of priors on the basis of naturalness, then it should also be the case that even less natural, even more bizarre classifications should make both the explanation and the language less fit for purpose. The following examples show that this is not the case.

Consider the categories "six-pocket-woman-on-a-Monday-or-a-cat" and "FTSE 100 share index on September 19th 2014 and on September 12th 1997". These are even less natural than the examples I used previously. If the objector is correct, then these should be *worse* for our explanatory and prior-evaluating purposes than the categories "six-pocket-woman" and "FTSE 100 share index on September 19th 2014". But this is not necessarily the case. If it turned out that Mondays were particularly significant in Papua New Guinea, such as being a holy day, for example, and that cats also had some important social purpose in the same area, then this would be an acceptable category to use in an anthropological explanation. And in the second case, despite being even more non-natural, it would be perfectly reasonable to evaluate the simplicity of a person's credences about Scottish independence using a language including this classification, for the simple reason that September 12th 1997 was the day after the previous Scottish referendum on devolution. For a person interested in connections between Scottish political autonomy and share values, this is a highly relevant category. These cases show that moving towards more bizarre and less natural categories does not always make the relevant classification worse.

One could argue that these classifications *cannot be* bizarre, because on reflection they appear to be sensible classifications to use when engaged in these particular activities. But to decide that any classification we could reasonably use in an explanation or include in a language for evaluating the simplicity of priors *cannot be bizarre* would be ad hoc. These seemingly reasonably classifications are highly non-natural to the extent of bizarreness, and yet they deserve a place in certain explanations and in the language we use to evaluate the simplicity of certain priors.

Someone could argue that Sider has more resources to deal with these cases than I suggest, because Sider recognizes "comparative structure".[25] Siderian structure is absolute, but in various applications of structure Sider proposes that there may also be a working notion of comparative structure, as captured in his use of the phrase "reasonably joint-carving". Sider does not give an account of comparative structure, but describes four elements that he argues should form part of that account. The elements are: being definitionally structural, being lawlike, displaying one of the objective features attributed by philosophers of science to explanation (such as unifying, or identifying causes), and being among the categories we care about.[26] We can construct a rough sketch based on these four elements according to which comparative structure is a balance between being definitionally structural, being lawlike, being unifying (or some other objective feature associated with scientific explanation) and being something that we are interested in. However, as both the case of the six-pocket-woman and the Scottish referendum indicate, very often we base explanation and prediction on certain categories *only* because of that last element. For example, if we consider the case of the category "six-pocket-woman", we can see that this is far from definitionally structural, it is not lawlike, and it does not perform other roles attributed to scientific explanation such as unifying or picking out the most salient causal factors. Along these dimensions, "six-pocket-woman" compares unfavorably to other more general categories such as "woman". The first three elements play no role in making "six-pocket-woman" more important than "woman", and an account of comparative structure based on a balance of these four elements would not return the correct result in this case, that "six-pocket-woman" is comparatively structural. Accordingly, comparative structure will not handle such cases well. I will return to discuss comparative structure in Section 3, when I will consider it again as an alternative to C-Naturalness.

A further response is to argue that naturalness must be playing *some role* in making the theory based on anthropological classifications explanatory, and the correct language to evaluate priors the complex economic and political language. To a certain extent this is correct. Because naturalness is an objective metaphysical phenomenon it will not somehow go away because a person is interested in forming beliefs about economics or anthropology. However, the important point here is that naturalness does not account for the central status of certain categories in these contexts.

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[25] Sider, T. (2011) Section 7.11
[26] Sider, T. (2011) pg 129-132

There are three options for a response to these problem cases. First, we may reject metaphysical naturalness completely. However, this is a radical move and in the rest of this paper I will argue that there are less radical and more plausible responses to this problem. Second, we could reject the cases. This would be to deny that, for example, the anthropological explanation based on highly non-natural classifications is successful. I have already argued that these are convincing counterexamples, however, and so shown that this response is implausible. Third, we could agree with Sider about metaphysical naturalness but think that he was wrong about extending naturalness to these cases, and that we need to treat them in a different way. This is the response I will argue for in the rest of the paper. I will argue that we need to introduce a new idea, context-dependent naturalness, to handle these cases and others like them.

Sider was right that there is something going on in each of these cases that is about structure. We may well, for example, give better explanations the more accurately our language picks out the correct structure. The problem with these cases is that the structure in question is not metaphysical, and so metaphysical naturalness will not help us to capture it. Instead, the structure in question is context-dependent and relative to particular interests. This mistake is instructive, as it points us towards what is really going on in these cases. To make sense of these cases we must supplement metaphysical naturalness with an account of something similar that is dependent on *context*.

Section 3: Context-Dependent Naturalness

Metaphysical naturalness is context-independent; if a property is perfectly natural it is so across all contexts, regardless of factors such as the values of the scientific community of the time or the interests of particular individuals.[27][28] Commitment to metaphysical naturalness is a commitment to

[27] Someone could hold a view according to which the naturalness of a property varies across possible worlds or across times. Indeed, given the connection between naturalness and laws of nature, worlds with different laws may also have different natural properties, and if laws develop over time the natural properties may also change over time. Given that this is the case, it is not quite accurate to say that naturalness is context-independent. To be more precise, I am claiming that the naturalness of any given property does not vary *with respect to a given world with a given set of laws*.

[28] I will continue to use the term "property" throughout this discussion in order to maintain continuity with the previous discussion of metaphysical naturalness. However, context-dependent naturalness is a non-metaphysical phenomenon and so some may prefer to think of it as a property of predicates, rather than of properties. Furthermore, those who reject the abundant conception of properties altogether will not recognise

the existence of objective distinctions in reality. However, there is another phenomenon very like metaphysical naturalness apart from the fact that it is context-dependent.

Just as certain properties are more important than others metaphysically, certain properties are more important than others with respect to a particular activity. In the same way that metaphysically natural properties are metaphysically privileged, certain properties are privileged with respect to a particular activity, but not necessarily in general. For example, consider the case of *being manic*. This is a highly important property for a psychiatrist, but *being manic* does not have this status in other contexts. To the physicist at work in the lab, for instance, *being manic* is not an important property. When the physicist leaves the lab and visits a psychiatrist, however, this situation changes. At this point, given the change in activity from research in physics to a visit to the psychiatrist, the property of *being manic* becomes highly important to the physicist.

The fact that, depending on our interests, different properties will be important to us is by no means a new idea, and neither is the related claim that judgments of similarity are dependent on context and on our interests.[29] An account of context-dependent naturalness will take these familiar ideas and regiment them in a way that will help us to avoid the kind of problems faced by Sider in the case of explanation and the case of Bayesian epistemology. After sketching an account of context-dependent naturalness (hereafter C-Naturalness) I will return to these cases to illustrate the useful work that it can do for us.

The basic idea behind C-Naturalness is that activities have structure, in much the same way that reality has structure. Of course, the structure of activities is not objective or mind-independent, in so far as it is typically determined by the rules, conventions and norms governing an activity in the communities in which it is practiced. But given those rules, conventions and norms, the structure is there. If we focus purely on metaphysical enquiry, we can see that there is a prima facie epistemic value to accurately capturing metaphysical distinctions. However, it would be foolish to think that *all* inquiry (or indeed, all philosophical or academic inquiry) is metaphysical. In most of our lives and in most domains of inquiry we run into problems if we attempt to metaphysically joint-carve. If we are

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some of the forthcoming cases as properties. In the absence of an entirely framework-neutral way of framing this proposal, however, I will continue to use the term "property".

[29] See discussion in Goodman, N (1972); Quine, W.V.O. (1969); Taylor, B. (2006) chapter 5; Lewis, D. (1971)

not engaged in metaphysical inquiry, it can be positively wrongheaded to treat metaphysically natural categories as the most important and salient categories.

It may be tempting to think that when it comes to classification, anything goes in non-metaphysical contexts. On this line of thought, if we are engaged in some activity other than metaphysical inquiry then it does not matter which classifications we choose to adopt, as there is no objective structure to limn in such contexts. But this is not true, as there may be context-dependent structure even where there is no corresponding metaphysical structure. For instance, we all acknowledge that the person who tries to apply the term *home run* to a play in a cricket game has made a mistake about the structure of the game of cricket, a structure in which *home runs* have no place, even though this is true in virtue of contingent, context-dependent facts. If we are to negotiate the world successfully then our classifications must suit our activities, and must carve the relevant joints even when those joints are non-metaphysical and vary across different contexts. In what follows, I sketch an account of C-Naturalness in an attempt to say what it is to carve the joints with respect to a non-metaphysical activity.

The account of C-Naturalness begins with the claim that certain activities bring with them property frameworks. This is a simple idea and a plausible one: whenever we learn about a new game, a new kind of cooking or a new academic discipline, we learn about (at least some of) the properties relevant to the activity. For example, when I learn to play chess, I learn about the *knight*, about *castling* and about the *checkmate*, and a significant part of learning chess is taken up with simply learning this new language. (I will focus on activities as a species of context as activities clearly do presuppose particular property frameworks whereas it is not clear when and under what conditions contexts in general presuppose particular property frameworks.)

One feature that is central to C-Naturalness is *salience*. All of the examples discussed so far have involved properties that are highly salient with respect to the activity at hand. For instance, *being manic* is salient when you are working as a psychiatrist, but not when you are working as a physicist. *Home runs* are salient with respect to baseball, but not with respect to cricket. In order to understand C-Naturalness, then, we should understand salience. Salience is being *essential to* an activity. A property is salient with respect to an activity if you cannot perform that activity without familiarity with this property. Salient properties are indispensable to the activity. For example, consider the case

of *being a roux* in French cooking. A roux is a base for a sauce, typically made with butter, flour and milk, though it can include other kinds of fat and liquid. The roux is the base for a great many different sauces and dishes. There is no getting around the importance of a roux, and no other way of understanding it except as an unwieldy conjunction ("*the flour, butter and milk base of sauces a, b, c … and dishes x, y, z…").* That makes *being a roux* salient with respect to French cooking. We cannot negotiate the activity of French cooking unless we are familiar with the roux and we can competently wield our familiarity with it.[30] To successfully participate in this activity we must know what a roux is, how to make one, and when it is appropriate to make one. Other examples of salience include: *being a home run* with respect to baseball, *being a goal* with respect to soccer and *being hydrogen* with respect to chemistry.[31]

Another central feature of C-Naturalness is versatility. Versatility is being *widely applicable* with respect to the relevant activity. For example, *being manic* is a versatile property with respect to psychiatry, as it can be applied to many different patients and mania plays a role in many different conditions. Returning to the case of French cooking, the property *being a roux* is highly versatile as well as salient. The property *being a roux* can be used to describe and understand the origins of a great number of dishes, as it is the starting point of so many of those dishes. Compare this status with another property within the activity of French cooking, which may be salient but is nowhere near as versatile, the property of *being a coq au vin*. A coq au vin is a particular kind of stew made of chicken and wine. This is salient within French cooking because coq au vin is a canonical dish; the person who is learning about French cookery must at some point encounter and become familiar with coq au vin. This property picks out only one dish, however, and so is less versatile than the property *being a roux*, which appears in many dishes and recipes. *Being a coq au vin* is an example of a case in which salience and versatility come apart.

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[30] I have adopted an everyday notion of "familiarity" here but one could object that this notion is not quite appropriate for this characterization of salience. For instance, one could object that a person *can* play baseball without knowing what a home run is, and *can* cook French cuisine without knowing what a roux is, and hence that the claim that a person must be *familiar* with the relevant property in order to perform the activity is mistaken. In response, note I do not claim that someone must know what a home run is *under that title* in order to play baseball. For a person to play the game of baseball well, and to be alert to all opportunities to raise their team's score, however, it is important that they know that the home run is one way in which they can score points. Similarly, in the case of French cookery the person may not know that this combination of flour, butter and so on is called a *roux*, but in order to make the sauces and stews characteristic of French cookery they must be familiar with that combination, in its different varieties. They must be familiar (in this everyday sense) with the category, even if they have a different name for it.

[31] For an exhaustive treatment of the cognitive science of salience, see Gärdenfors, P. (2000)

Having described the role that salience and versatility play in C-Naturalness, I suggest the following as a sketch of C-Naturalness:

> *A property is more C-Natural with respect to an activity when it displays a higher combination of salience and versatility among the properties particular to that activity. Properties may be more and less C-Natural relative to an activity depending on their particular balance of salience and versatility with respect to the activity.*[32]

To explicate this proposal I will now describe what I mean by "particular-to" and "activity".

Properties are *particular to* activities in so far as they are *among the set of properties you have to learn about when you learn to perform this activity*. To put this in a slightly different way, the properties that are candidates for C-Naturalness are the ones in the framework of properties associated with the activity. However, some activities may share certain properties. For instance, the property *being athletic* is salient and versatile with respect to a wide range of different sporting activities. Alternatively, *being a roux* is salient and versatile with respect to French cookery but also with respect to Cajun cookery. There are connections between these activities, and this is reflected in their shared properties. The sports for which *athleticism* is C-Natural all value athleticism, while the cooking styles for which *being a roux* is C-Natural all share a French heritage.

Finally, *activity* should be understood generously, such that practicing a branch of the sciences, playing a sport, playing a particular kind of music, cooking, doing philosophy and negotiating certain social landscapes all count as activities. I do not intend to offer strict conditions for an activity other than to suggest that if it is something you can do that is governed by some rules and conventions, implicit or explicit, and it brings with it a framework of properties, then it is most likely an activity. Activities can be related to one another in various different ways, which be reflected in their sharing C-Natural properties. For example, activities can contain other activities. *French cooking* includes *cooking of Provence*, while *being a police officer* includes *being a police officer in Scotland* and *being a police officer in Glasgow*. Such related activities will share some, but not all, of their C-Natural properties.

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[32] The strategy of appealing to the best balance between a range of features is influenced by David Lewis' Best System Account of laws and chances. See Lewis, D. (1980)

So far this is a sketch of C-Naturalness rather than a fully developed account, but we now have enough information to see that C-Naturalness can play a role analogous to metaphysical naturalness in certain cases of explanation and confirmation. To illustrate, let's return to the problem cases from Section 2. In both the case of Bayesianism and the case of explanation, a claim that was plausible about metaphysical enquiry turned out to be clearly false about non-metaphysical enquiry. Even if metaphysical explanations are better the closer they get to a language of natural properties, anthropological explanations are not. Even if the right language for evaluating the simplicity of priors about metaphysics is a language of natural properties, this is not the case when it comes to evaluating the simplicity of priors about connections between economic and political events. But Sider's basic idea that capturing the correct structure is important was correct. Applying C-Naturalness to these cases, we can see that the language capturing connections between economics and Scottish independence is more appropriate for this case than the language of natural properties because the person is forming credences about such connections, and metaphysically natural properties are not C-Natural with respect this activity. A similar result applies to the second case, because the language of perfectly natural properties is not C-Natural with respect to the anthropology of Papua New Guinea.

One might think that metaphysical naturalness is still playing some role in these cases. One could argue that an explanation based on the classification "six-pocket-woman" is better than one based on the classification "six-pocket-woman-or-cat", and that this is because the former is more metaphysically natural. I agree that the former is clearly preferable to the latter, but that is *because* the former is more C-Natural with respect to the relevant activity. If it happened to be the case that the property "six-pocket-woman-or-cat" was C-Natural with respect to the anthropology of Papua New Guinea, then the result would be different. Metaphysical naturalness does not account for the importance of these properties. On a similar line, someone might think that C-Naturalness is just a function of how natural a property is compared to the other properties relevant to that context. However, this is not the case. If we consider the case of the six-pocket woman, for example, note that the category "woman" is also relevant to this context (because it is relevant to anthropology) and is more natural than "six-pocket-woman", but the explanation based on the classification "six-pocket-woman" is more successful than the explanation based on the classification "woman".

A question now arises about the extent to which constraining explanation and rational belief-updating with C-Naturalness will make explanation and rational belief-updating contextual. I will assume that what it means for explanation or rational belief-updating to be entirely contextual is for there to be *only* context-dependent conditions for explanation or for rational belief-updating. If there were reasons to think that explanation and rational belief-updating are *not* entirely contextual (as is the view of the objective Bayesian, who holds that there are objective standards for priors), and if the result of applying C-Naturalness to explanation and belief-updating is that they turn out to be completely contextual, then we should be suspicious of C-Naturalness. However, as we will see, applying C-Naturalness to explanation and to rational belief-updating does not make them entirely contextual.

Even staunch realists about explanation acknowledge pragmatic, contextual elements to explanation, and so acknowledge that standards for explanation are at least *partly* contextual. The important question for us is whether or not constraining explanation with C-Naturalness makes explanation *entirely* contextual. The answer is no, for the simple reason that C-Naturalness can be combined with other, objective constraints on explanation. For example, it is standard to hold that the explanans of any successful explanation must be *true*. Because C-Naturalness can be combined with other, objective constraints, constraining explanation with C-Naturalness does not in itself make explanation entirely contextual. The case of updating beliefs is more complicated because the Objective Bayesian cannot require that our priors be *true*. However, there is no reason to think that the appeal to C-Naturalness could not be combined with certain other objective constraints, and hence that constraining belief-updating with C-Naturalness need not make rational belief-updating entirely contextual.

At this point it is helpful to consider whether there are any alternative accounts of the context-dependent importance of properties, and whether these obviate C-Naturalness. For example, Barry Taylor completely rejects metaphysical naturalness and offers an account of what he calls "cosiness" in its place.[33] According to Taylor, predicates are cosy relative to a theory T, and their cosiness is determined by certain connections between the predicates in an axiomatized formulation of T. Primitive predicate F of theory T is cosier with respect to T than primitive predicate G if, by T's

[33] Taylor, B. (2006) Chapter 5

lights, G can be instantiated only if F is.[34] Why should we not accept Taylor's account, and hence avoid buying into C-Naturalness? The answer is that cosiness is very different from C-Naturalness, and does not account for the phenomena that C-Naturalness captures. First, cosy properties are a replacement for metaphysical naturalness (or, as Taylor puts it, a "vegetarian alternative"[35]), and to embrace cosy properties is to abandon metaphysical naturalness altogether. C-Naturalness, on the other hand, is a supplement to an account of metaphysical naturalness. Second, even if we take an activity's predicate framework to be equivalent to an axiomatized theory (and it is not clear that we should), cosiness fails to capture the interest-relative importance of particular properties. For example, consider the importance of the property "being a police officer in London" to someone conducting research into the efficacy of crime prevention strategies in London. Another fairly important property with respect to this research is the more general "being a police officer", and within Taylor's framework both are predicates of theory T. Someone can be a police officer in London only if they are a police officer, which on Taylor's view makes the latter property cosier with respect to T than the former. But given that this researcher is examining crime prevention strategies *in London*, the property "being a police officer in London" is more important with respect to their activity. Cosiness cannot capture this, but C-Naturalness can. C-Naturalness makes sense of such cases while also allowing us to hold onto metaphysical naturalness.

Another alternative to C-Naturalness is Sider's own notion of *comparative structure*. As discussed in Section 2, Sider does not give a full account of comparative structure, but does offer four elements that should go into that account. The four elements are 1) being definitionally structural, 2) being lawlike, 3) being among the objective features attributed to explanation by philosophers of science, and 4) being among the categories we care about. We can now see if an account of comparative structure along these lines could obviate C-Naturalness. In Section 2 I discussed comparative structure applied to the two problem cases of the six-pocket-woman and the Scottish referendum, and argued that comparative structure did not handle those cases as well as C-Naturalness. As a further test case, we can ask how comparative structure would accommodate the case in which someone is interested in the property of "being a police officer in London" while conducting research into crime prevention in London. If we compare "being a police officer in London" with "being a police officer", we can see that the former is less definitionally structural than the latter, and

[34] Taylor, B. (2006) pg 110
[35] Taylor, B. (2006) pg 109

is also less lawlike than the latter. "Being a police officer" is more general than "being a police officer in London" and so more unifying.[36] The only feature that "being a police office in London" has that would make it *more* comparatively structural is that it is a category that the researcher is interested in. "Being a police officer" is more comparatively structural than "being a police officer in London", which gives us the result that we should use "being a police officer" in our explanations and predictions, rather than "being a police officer in London". And yet, for the researcher the latter is the more important property. Returning again to C-Naturalness, we can see that C-Naturalness can handle this case very well. Given the researcher's particular goals, "being a police office in London" is more C-Natural than "being a police officer", and that is the correct result for this case.

As we have seen, appealing to C-Naturalness allows us to avoid the mistake of over-extending metaphysical naturalness. However, there are other uses for an account of C-Naturalness. In providing a precise account of something so close to, and in some contexts easily confused for, metaphysical naturalness, an account of C-Naturalness allows us to make more precise attributions of and appeals to metaphysical naturalness. L.A. Paul has argued that it is important for metaphysicians to be informed about human cognitive and linguistic apparatus, *"in order to distinguish between features of our experience and language that reflect the nature of the world and features of our experience and language that merely reflect the way that we respond to the world"*.[37] For similar reasons metaphysicians should take care to be sensitive to C-Naturalness, so that they can distinguish between the relative metaphysical standing of properties and the relative context-dependent standing of properties. When particular properties are central or important to us, for example when we use them in formulating our explanations and our predictions, it can be tempting to think that this is always so because of metaphysical naturalness. Keeping the idea of C-Naturalness in the metaphysician's toolbox encourages us to be careful when we make such judgments, as properties are often C-Natural with respect to certain activities without being metaphysically natural, and metaphysically natural without being C-Natural. Properties may be important with respect to an activity without being metaphysically important.[38]

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[36] There are other features associated with scientific explanation that may be relevant here, such as identifying causes and simplicity, but none of these will privilege "being a police officer in London" over "being a police officer".

[37] Paul, L.A. (2012) pg 17

[38] This leads to the question of whether the highly C-Natural properties with respect to the activity of metaphysics will be the perfectly natural properties. I suspect that this is unlikely to be the case because the

Section 4: Objections and Replies

In this section I will describe and respond to some objections to C-Naturalness.

Objection 1

C-Naturalness has very little to do with metaphysical naturalness, so why treat them together and why call it C-Naturalness? Is this not simply misleading?

C-Naturalness is very different from metaphysical naturalness. C-Naturalness is context-dependent while metaphysical naturalness is context-independent, and C-Naturalness is interest-relative while metaphysical naturalness is not. However, there are good reasons to treat both together. We have already noted that C-Naturalness can often *look* like metaphysical naturalness, and the reason why C-Naturalness is often confused for metaphysical naturalness is that they play similar roles. C-Naturalness picks out the most important properties with respect to the structure of an activity and metaphysical naturalness does so with respect to metaphysical structure. Another way to put this is that the genus "naturalness" is "picks out features of structure", and that one species, metaphysical naturalness, picks out metaphysical structure, while another species, C-Naturalness, picks out context-dependent structure.[39]

The idea that context-dependent constraints can occupy roles analogous to those occupied by metaphysical naturalness is reflected in some recent work on laws. Cohen & Callender offer a "Better Best System" account of laws in which the best system is relative to a set of properties privileged in a given special science. [40] In doing so they adopt a context-dependent constraint to play a role traditionally played (as it is in the original Lewisian Best System Account) by metaphysical naturalness. I have also argued that C-Naturalness can play a similar role to that played by

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properties C-Natural for metaphysical enquiry about one particular area (time, for instance) will be different from those C-Natural for metaphysical enquiry about some other area (such as mereology). The answer to this question will also depend on whether perfectly natural properties are only physical properties.

[39] One could argue that "having structure" is trivial. One way to avoid this problem is to stipulate that the genus of "naturalness" is "picks out non-trivial structure", and the particular species are "picks out metaphysical structure", "picks out the structure of activities" and so on.

[40] Cohen, J. & Callender, C. (2009)

metaphysical naturalness with respect to certain cases of explanation and confirmation. Treating both also together enables more precise attributions of metaphysical naturalness, as it prevents C-Naturalness from being confused for metaphysical naturalness.

Someone could argue that naturalness *must only* pick out metaphysical structure and so that C-Naturalness cannot be a form of naturalness, by definition. There are good reasons not to hold this position, because in holding it we ignore instructive parallels between C-Naturalness and metaphysical naturalness.[41] However, the person who does adopt this position is free to call C-Naturalness by some other name and still recognize that it plays some of the roles that have been assigned to metaphysical naturalness. Even if we give up on the title "C-Naturalness", we can still endorse the view that there is C-Naturalness under some other title.

Objection 2

For any two properties that are salient or versatile with respect to an activity, their disjunction will display a higher combination of salience and versatility. For example, "being an attractor OR a dynamical system" with respect to the activity of research in dynamic systems theory has a higher combination than either disjunct alone. Thus the claim that the best combination of salience and versatility is an appropriate measure for C-Naturalness is undermined.

This objection can be blocked by paying particular attention to the idea of salience. Whether some property is salient relative to a particular activity is determined by the conventions or rules governing that activity. For instance, *being an attractor OR dynamical system* is not more salient than either of its disjuncts, because the disjunction simply is not used by dynamic systems theorists whereas the disjuncts are, and because we are dealing with an interest-relative phenomenon, this is enough to settle the matter. The only way a property gets to be salient is by actually being so, and we cannot make it so by fiat. Versatility generates more problems, as a disjunction of two properties is more versatile than the properties alone, but the fact that C-Naturalness is dependent on a combination of versatility and salience prevents the problem from spreading.

[41] There are also more general reasons to avoid being overly stringent about which concepts, tools and forms of enquiry count as legitimately "metaphysical". For instance, Barnes has argued that we should endorse a conception of metaphysics on which legitimate metaphysical enquiry can extend to enquiry about the social world, and points out that on narrower conceptions of metaphysical enquiry (including Sider's conception of metaphysics) feminist metaphysics is impossible. See Barnes, E. (2014)

Objection 3

'Activity' is vague and open-ended and adopting this broad notion of 'activity' permits us to talk about properties that are C-Natural with respect to dubious activities, such as astrology and crystal-gazing. This ecumenical approach renders the account suspect.

Although 'activity' is a wide category, I have given an outline of that category and picked out some canonical examples. Central features of an activity are that it is something you can do that is governed by implicit or explicit rules or norms, and that is associated with a particular framework of properties, some of which have a particularly important status. C-Naturalness is a common phenomenon and so the fact that there are a great many such examples is not an objection to this account.

As for the ecumenical worries, note that we can hold onto the view that astrology makes no true claims while also holding that *being a Pisces* is a very important property with respect to the activity of astrology. Astrology may be an activity in which we should not be indulging, but an account of C-Naturalness will have nothing to say about why we should not be practicing astrology. This is unproblematic as we have other philosophical and scientific resources for addressing questions about which kinds of activity and inquiry should be abandoned and which encouraged. The sketch of C-Naturalness attempts only to account for the fact that certain properties have a certain status with respect to certain activities. In so far as the status of 'Pisces' within astrology is an example of that status, C-Naturalness should have something to say about why that is the case, even while acknowledging that astrology is a disreputable activity.

Objection 4

Even if we agree with you about these problem cases, there is no need to leap directly to an account of something purely contextual to make sense of these cases. Surely some other account of naturalness, or a constraint based on naturalness, should do the job just as well.

In so far as accounts of naturalness are accounts of a context-independent phenomenon, they will have nothing to say about this highly context-dependent phenomenon. The problem here is not that some *particular* account of naturalness is inadequate to the task of making sense of these cases. Rather, *no* account of naturalness can capture the context-dependent importance of properties, because naturalness is context-independent.[42] The objector is recommending an in-between strategy – something in between a purely contextual solution and a purely non-contextual solution - and adopting C-Naturalness alongside metaphysical naturalness *is* such an in-between strategy, using a contextual constraint (C-Naturalness) as a supplement to metaphysical naturalness. I do not recommend abandoning metaphysical naturalness, but instead recommend that we recognize its limits.

Furthermore, in Section 3 I considered other attempts to account for such cases, including Sider's comparative structure, which is an "in-between" strategy, and Taylor's "cosiness", which is entirely contextual, and found that those alternatives failed.

Objection 5

When we ask why special scientists such as psychologists, anthropologists, linguists and so on take a special interest in certain properties rather than complicated, gruesome alternatives, proponents of metaphysical naturalness can answer "because those properties describe intrinsic reality's structure reasonably well, and the practitioners are interested in describing reality's structure reasonably well." The proponent of C-Naturalness instead has to say that the reason why they are interested in these particular properties ultimately has to do with their interests, values and goals. But this just pushed the challenge back, because the objector can now ask why *those interests, goals and so on are directed at certain properties rather than their gruesome alternatives.*

Sometimes we are interested in certain properties because we are describing the intrinsic structure of reality, and the properties pick out that structure. But sometimes we are engaged in an activity that does not involve describing the intrinsic structure of reality, or only *partially* involves describing the intrinsic structure of reality. For example, consider a sociologist researching certain cultural features of communities that develop around illnesses such as cancer. Given their interests some reasonably

[42] Bearing in mind the caveats about the context-independence of naturalness discussed in footnote 27.

metaphysically joint-carving categories are important, such as "person with cancer". But other important categories will pertain to people's beliefs about cancer, the culture that has formed among people fighting cancer, and so on. Some of these categories may have no basis in reality at all, such as the idea of the "cancer personality".[43] The sociologist is interested in such categories rather than their gruesome alternatives because these particular categories reflect the structure of the context that is their object of study. If that context were structured differently, then the sociologist would be interested in different categories. Given the activity of studying this social context, these are the important categories.

For a more extreme example, consider a case in which the relevant activity is founded on *false beliefs* about the world. Imagine, for instance, that there is a group of people who genuinely, but falsely, believe that they are werewolves. Imagine also that I decide to join this group and participate in their activities, which for the sake of ease I call "were-wolfing". When I am were-wolfing the C-Natural categories will be categories such as "werewolf", "shapeshifter", "pack leader", "silver bullet" and so on. And yet most of these do not reflect the intrinsic structure of reality for the simple reason that *there are no werewolves*. In response to the objector, then, we can point out that the reason why we are interested in *these* categories rather than gruesome alternatives is that they reflect the structure of the relevant activity. The structure of the activity will include *elements* of the intrinsic structure of reality, but the most important, C-Natural categories for that activity may not reflect that the intrinsic structure of reality. In some cases, such as the activities of research into physics or metaphysics, the C-Natural and metaphysically natural may overlap. But in others, such as the werewolf case, they will not. C-Naturalness is uniquely well-placed to capture these facts about our interests, whereas metaphysical naturalness can only make sense of our interest in categories that track the intrinsic structure of reality. A notion of naturalness that can only tell us about the properties that are important *because* they are part of the intrinsic structure of the world can tell us nothing about lots of the things we do happen to care about.

[43] Sontag memorably described these false beliefs about the "cancer personality" in Sontag, S. (1978)

Conclusion

C-Naturalness captures the way in which certain categories are privileged with respect to particular activities, just as metaphysical naturalness captures the way in which certain categories are privileged with respect to describing the intrinsic structure of reality. By embracing a framework of C-Natural properties, I have argued, we can make better and more accurate attributions of metaphysical naturalness, and can avoid problem cases in which the context-dependent importance of certain properties is confused for the context-independent, metaphysical importance of such properties.[44]

Bibliography

- Barnes, E. (2014) "Going Beyond the Fundamental: Feminism in Contemporary Metaphysics." *Proceedings of the Aristotelian Society*, Vol 114 issue 3 part 3, 335-351
- Cohen, J. & Callender, C. (2009) "A better best system account of lawhood." *Philosophical Studies* 145: 1-34
- Dorr, C. and Hawthorne, J. (2013) "Naturalness." *Oxford Studies in Metaphysics* Vol 8.
- Fodor, J.A. (1974) "Special Sciences: Or the Disunity of Science as a Working Hypothesis." *Synthese* 28: 97–115.
- Gärdenfors, P. (2000) *Conceptual Spaces: The Geometry of Thought*. MIT Press.
- Goodman, N. (1972) "Seven strictures on similarity." In Goodman, N. (1972) *Problems and Projects*. Bobbs-Merrill.
- Jaynes, E. (2003) *Probability Theory: The Logic of Science*. Cambridge University Press.
- Jeffrey, R. (1992) *Probability and the Art of Judgment*. Cambridge University Press.
- Kotzen, M. (unpublished) "The Bayesian and Frequentist Approaches to Inference." 2011 draft available at: http://matthewkotzen.net/matthewkotzen.net/Research_files/bayesfreqweb.pdf

[44] Thanks are due to Patrick Connolly, John Heil, Marc Lange, Elizabeth Miller, Maxwell Suffis, an anonymous referee, participants at the 2013 National Endowment for the Humanities Metaphysics & Mind seminar, and audiences at the Central States Philosophical Association and Occidental College. Work on this paper was supported (in part) by the National Endowment for the Humanities, although the views expressed here do not necessarily represent those of the Endowment.

- Lewis, D. (1971) "Counterparts of Persons and their Bodies." *Journal of Philosophy*. 68 (7): 203-211

- Lewis, D. (1980) "A Subjectivist's Guide to Objective Chance." Reprinted in Lewis, D. (1987) *Philosophical Papers Vol II*. Oxford University Press.

- Lewis, D. (1983) "New Work for a Theory of Universals." *Australasian Journal of Philosophy*. 61(4): 343-377

- Paul, L.A. (2012) "Metaphysics as Modeling: The Handmaiden's Tale." *Philosophical Studies*. 160 (1): 1-29

- Pickles, A. J. (2013) "Pocket calculator: a humdrum 'obviator' in Papua New Guinea?" *Journal of the Royal Anthropological Institute,* 19: 510–526.

- Putnam, H. (1963) "Brains and Behavior" in Butler, R.J. ed. (1963) *Analytical Philosophy: Second Series*. Blackwell.

- Quine, W.V.O. (1969) "Natural Kinds" in Quine, W.V.O. (1969) *Ontological Relativity and Other Essays*. Columbia University Press.

- Sider, T. (2011) *Writing the Book of the World*. Oxford University Press.

- Sontag, S. (1978) *Illness as Metaphor*. Farrar, Strauss & Giroux.

- Taylor, B. (2006) *Models, Truth and Realism*. Oxford University Press.