How to Individuate Concepts

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Abstract

This paper challenges the beliefs that: 1) theories of concept individuation can reveal information about concept ontology, and 2) some such theories are better than others. It is concerned with answering the following question: what basis do we have to compare different theories of concept individuation? Arguments from intuitions; ability to explain behaviour; and fit with the natural world are considered. It is argued that none of these features provides grounds for choosing one theory of individuation over another, and certainly does not identify which is the best or most ‘correct’ model of concept individuation. An alternative is suggested: comparing theories of concept individuation on the basis of how useful they are. It is argued that the success of a theory of concept individuation should be measured in terms of its pragmatic value relative to a particular frameworks of goals. It is concluded, no theory of concept individuation can be objectively correct, or better than any other, independent of an account of its usefulness.

Introduction

Providing an account of how to individuate concepts has traditionally been one of the central goals of philosophical discussions of concepts. This particular goal is often understood as being prior to answering the questions, focused on in psychology, concerning how conceptual representations are acquired, developed and structured. It has been argued that you can’t learn things about how concepts are structured without first answering the question of what concepts are (Rey, 1983/1999). And the question of what concepts are appears to require an account of how we individuate concepts.

Whether concepts should be individuated on the basis of their intrinsic or relational properties, for example, is the question at the heart of the debate over internalism about mental content. Perhaps because of this, competing ontological pictures
of concepts end up being judged and compared on the basis of the accounts of concept individuation they commit us to: “Twin Earth” style scenarios are about how we individuate concepts – what it means for two concepts to be the same or different. Furthermore, if one concludes with the externalists (as most do) that concepts should be individuated relationally, the battle between competing accounts of concepts becomes even more firmly rooted in individuation. Should concepts be individuated with reference to a concept possessor’s linguistic community (Putnam (1975); Burge (1979)), their teleological role (Millikan (1984)), or their history of interaction with the natural kinds residing in their environment (Kripke (1981); Putnam (1975))? More recently, the debate over whether concepts are a natural kind, originally raised by Edouard Machery (2009) raises the question of whether two seemingly different psychological mechanisms, both thought by psychologists to play the role of concepts, can be said to be of the same type at all. Machery is essentially critiquing different theories of concept individuation found in psychology - whether concepts should be individuated on the basis of prototypical representations, exemplars, or theories. Replies to Machery have focused on cases where different psychological mechanisms can still be said to represent the same concepts, or even whether a combination or hybrid of mechanisms can itself be said to be one concept, as opposed to a number of different psychological states, none of which can rightly be thought to be ‘concepts’ at all.

Theories of what concepts are just are theories of concept individuation, even if that is not all they are (which is true in the case of theories in psychology where an explanation and understanding of the mechanism behind conceptually driven behaviour may be of more concern than saying what makes two instances of concepts instances of the same type or not). In this way, because they are not focused on the psychological mechanism, one might conclude that concepts for externalists (or, as some, such as Rey and Machery argue, concepts for philosophers) are in a particularly vulnerable position if there is a problem with concept individuation as this really is the best that they have to offer.

This paper will argue that the traditional way of thinking about concept individuation is fundamentally flawed. It will begin by drawing a distinction between the psychological properties (or mechanism behind) concepts, and the semantic properties of concepts. It is generally understood that any decent theory of concept individuation will need to be general enough to explain how different individuals are able to share concepts and how we are able to use the same ‘conceptual’ or intentional explanations of behaviour across persons. I will argue that individuating concepts on the basis of their psychological properties will fail to be general enough to extend beyond a token-identity account of how two concepts can be the same. However, there are
reasons to believe that individuating concepts in accordance with their psychological
properties is to correctly ontologically individuate them. To individuate concepts on
ontological grounds is to individuate them so narrowly that the task of individuation
itself is rendered pointless. Whatever the underlying ontology of concepts is, they
must be individuated in accordance with their relational properties if they are to be
generalisable. The task of a theory of concept individuation, therefore, should be un-
derstood not as strictly telling us about the nature of concepts, but rather as playing
some other role.

If the individuation question must be solved independently from question of the
ontological nature of concepts, what basis do we have to compare different theories
of concept individuation? Put another way, what reasons do we have for choosing one
theory of concept individuation over another? The primary virtue over which differ-
ing theories often compete is fit with intuitions. It is generally understood that individu-
ating concepts such that contemporary people could be said to share a computer con-
cept with neanderthals would be flawed just as much as a theory which entailed that
contemporary people could not have shared a food concept with anyone who lived
two hundred years ago. The reason for such verdicts is that they clearly or intuitively
hold. Another virtue that theories of concept individuation are believed to need is fit
with the natural world – theories that individuate concepts such that they correspond
with the real natural divisions in the environments of the concept possessors are con-
sidered to be superior to those that don’t. However, I will argue here that neither of
these virtues are sufficient for giving us a reason to choose one theory of individuation
over another, and certainly not to identify which is the best or most correct model of
concept individuation. An alternative virtue will be suggested: comparing theories of
concept individuation on the basis of how useful they are.

The final section will argue that assessing whether or not a theory of individuation
is useful provides a good way of choosing between competing theories. Usefulness,
might, for example, be seen as corresponding with an increase in predictive or explana-
tory power – things that could be investigated to give a non-circular way of choosing
between theories of concept individuation. However, what it means for something to
be useful is relative to one’s goals or needs. Different theories may be more or less
useful under different circumstances and relative to our interests in using them. As
looking to the criteria of usefulness is established as the only defensible way of choos-
ing between theories, we should recognise that there can be no privileged account
when it comes to concept individuation.
1. Psychological v Semantic properties

1.1 Psychological v Semantic properties

In “Concepts: A Potboiler”, Jerry Fodor (1995) distinguishes between two different types of properties of concepts – what he calls the ‘causal’ properties (which I shall refer to in this paper as ‘psychological’ properties) and ‘semantic’ properties. Consider, for example, a spoon concept. How my spoon concept appears to me; what I associate with it; what prototypes I employ to enable me to identify spoons; even what patterns of neurons firing realise my concept – all of these can be understood as psychological properties of my concept. The psychological properties of concepts are those that are understood intrinsically (as opposed to in terms of their relationship with their environment or history).

The psychological properties of concepts are to be distinguished from their semantic or intentional properties. Other people may have their spoon concepts realised by symbols with different syntactic features, or that play different roles in relation to their other concepts – their concepts may be psychologically different to mine. However, it would be odd to say that I cannot share a spoon concept with anyone who is psychologically different to me. It appears that, if I do share my concepts, it must be in virtue of their non-psychological properties – their semantic properties – which are determined relationally. Fodor (1995) argues that I share my spoon concept with anyone who had the right relationship with spoons: anyone who, like me, has some kind of symbol that is reliably activated when and only when spoons are present. For Fodor, when we individuate concepts – when we say what it is for my spoon concept to be a spoon concept, or when we identify what it is that accounts for psychologically different people being able to share concepts – this must be done on the basis of semantic properties.

This section will briefly present the case for the two halves of the argument underpinning the tension between the psychological and semantic properties of concepts: 1) The psychological properties of mental states are those that do the causal/explanatory work – it is the psychological properties alone that account for the causal mechanism of concepts. 2) The semantic properties of mental states are needed for concept sharing – psychological properties are not an appropriate basis for a theory of concept individuation that can account for how concepts are shared.
1.2 Semantic properties don’t have causal powers

The fact that the semantic properties of mental states don’t have causal powers has been challenged by some, but remains largely uncontroversial. It is the psychological properties of an individual’s concepts that explain, for example, why that individual acts the way that she does. Relationship with the environment is going to determine the outcome of actions, as well as their location in space and time, but it is the mental states of the actor that causes her actions, and they do so in virtue of their psychological properties.

If the semantic properties of mental states had causal powers then two individuals who were intrinsically identical could nonetheless act differently depending on their environment or history. This possibility has been rejected even in thought experiments that are used to support arguments in favour of individuating concepts on the basis of their semantic properties: Hilary Putnam’s (1975) “Twin Earth”, Tyler Burge’s (1979) arthritis case, Donald Davidson’s (1963) “Swampman”, are all examples where the individuals being considered behave the same when their concepts share psychological properties, but do not share semantic properties. Jesse Prinz (2004: 99-100; 2005) who endorses a dual theory of concepts which takes as ontologically significant both their psychological and semantic properties, argues that, even if you are going to individuate concepts relationally, the psychological properties of concepts are needed to play an important explanatory role. Without psychological features of concepts, argues Prinz, we do not yet have the mechanism that explains why it is that we are able to use symbols to reliably or consistently detect category members.

Theories of concepts which originated in psychology – for example prototype theory, exemplar theory, theory-theory – have been primarily concerned with investigating the psychological properties of concepts. These are, after all, theories about the mechanism that causes concept-related behaviour. However, it is not only psychology that takes behaviour as providing evidence about the nature of concepts. We all induce the presence of concepts in others on the basis of observing the way people act – their use of language, ability to cooperate, the fact that they act and categorise in similar ways – and this is written into all philosophical theories of concepts. Indeed, this is true even when concepts are understood to be abstract objects rather than mental representations. Both Gottlob Frege and Georges Rey, who understand concepts as being non-mental, still invoke certain behaviours in support of their positions. Frege (1948) refers to communication and cooperation between people as a reason for believing

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1Indeed, Fodor (1987, 1995) himself acknowledges that the relational properties of mental states don’t have causal powers. For challenges see Peacocke (1981), Evans (1982) and Hornsby (1986). I reply to these challenges in [Citation Retracted a].
ing that concepts are shared. Rey (1985) further argues that concepts must be shared because we are able give intentional explanations of behaviour that apply successfully across individuals. It is not necessarily agreed which behaviour counts as evidence as to the nature of concepts, but rather that without some minimal reference to human behaviour a theory of concepts can't get off the ground.

In *Psychosemantics*, Fodor (1987) argues that science individuates entities in accordance with their causal properties. He concludes from this that mental states should be individuated in accordance with their psychological properties – these being the only properties with causal powers. The causal inertness of the semantic properties of mental states tells us something about the ontology of concepts – that the fundamental, ontological nature of concepts is best understood in terms of their psychological properties, as these are the properties that causally explain all the behavioural phenomena that we investigate to understand what concepts are. Even for those who reject such a strong conclusion, it cannot be avoided that it is the psychological properties that cause the behaviour which is essentially our only evidence as to the presence and nature of the concepts of others. However, this does not mean that there cannot be valuable taxonomic systems for individuating concepts that focus on relational properties. In fact, Fodor (1995, 1998) himself changed his position to argue that concepts should be individuated on the basis of their semantic properties. The reason for this, and one of the strongest points in favour of the significance of semantic properties in accounts of conceptual content, is that it is very hard, if not impossible to have a viable or ‘robust’ theory of concept individuation that individuates on the basis of psychological properties.

### 1.3 Psychological properties aren’t candidates for a theory of individuation

Fodor (1995) argues that concepts must be (psychologically) simple mental symbols that have their content determined by the fact that they are consistently triggered in the presence of an object, event, or state of affairs of a particular type. I have, for example, a mental symbol that is reliably activated when and only when I am in the presence of spoons. This symbol, therefore, according to Fodor, is my *spoon* concept. We need know nothing more about this mental symbol – not its structure or syntax, nor its relationship to my other mental symbols – to know what it represents: spoons. On Fodor’s account, concepts must be individuated according to their semantic properties.

Fodor is not the only one to believe that the different roles that concepts are taken

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2“*To have the concept of X is to be able to recognize Xs, and/or to be able to reason about Xs in certain kinds of ways.*” (Fodor, 1995: 7)
to play are either not compatible or not explainable with one unified theory. Prinz’s (2004) ‘proxotypes’ theory of concepts, while placing emphasis on the nature of the psychological dimension of concepts, concedes Fodor’s point that concepts must be individuated on the basis of a particular mind/world relationship. In Prinz’s case concepts are the concepts they are in virtue of the fact that they reliably or consistently detect members of a particular type, category or set. Prinz’s theory also includes the features that Fodor rejects as unnecessary for a theory of concepts: the internal structure of concepts themselves is important to a theory of concepts, Prinz argues. However, neither the structure Prinz’s ‘triggered’ mental symbols have, nor their relationships to one another can play a role in concept individuation. We are not able to use psychological properties in developing an account of concept sharing, or of conceptual intentionality or reference.

On Prinz’s account, the psychological (causal) and semantic (intentional) systems, while presented together, are only contingently tied to one another. The role the psychological properties play is to explain the success of the semantic properties – the fact that I represent dogs in a particular way explains why it is that I am able to successfully and consistently identify dogs, and it is the fact that I use my dog concept to consistently identify dogs that makes it a dog concept. But, in cases where these two properties come apart – such as where two people have radically different internal representations that nonetheless lead them to similar categorising behaviour – only the semantic properties of their concepts are going to be considered when determining whether not they share the same concepts. The concepts themselves are mechanisms, but the mechanisms are individuated according to something outside themselves.

Fodor (1995, 1998) identifies two types of problem with accounts of concepts that focus on (or individuate according to) psychological properties. The first is that, according to Fodor (1998) no other theory of concepts has been able to satisfy what he refers to as “non-negotiable requirements” on a theory of concepts. As soon as a theory of concepts specifies that conceptual content is determined, even in part, by a concept’s psychologically significant parts, or its relationships to the concept-possessor’s other concepts, then it will not be able to provide an account of: concept sharing (what Fodor calls ‘publicity’); the compositionality of concepts; or the intentionality of concepts. The second problem is that you cannot get a good account of concept

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3“If, by stipulation, semantics is about what constitutes concepts and psychology is about the nature of mental processes, then the view I’m recommending is that semantics isn’t part of psychology... Since, however, concepts are individuated by their representational and not by the their causal properties, all that has to be specified in order to identify a concept is what it is the concept of. The whole story about the individuation of the concept dog is that it’s the concept that represents dogs, as previously remarked.” (Fodor, 1995: 22)
individuation that includes the psychological properties of concepts. In fact, this second problem with psychologically-based theories of concepts largely explains the first problem – a robust account of concept individuation is needed if we are going to be able to explain, for example, how two people could share the same concepts. What counts as a ‘robust’ account of concept individuation is one that individuates concepts in a way that accounts for concept sharing, compositionality and intentionality.

One of the main motivations for individuating concepts in accordance with their semantic properties is that it is very difficult to come up with a theory of concept individuation which considers only psychological properties, on which two people can have the same concepts. The intrinsic properties of concepts whether they are, for example, brain states or understood phenomenologically, vary in virtue of the differences in people’s experiences. Hypothetical doppelgängers share the identical intrinsic properties of their mental states, but their relationship is not a good model for the rest of us – they are, after all specified as being intrinsically identical. Any model that individuated concepts solely in terms of their psychological properties is not going to enable us to explain how two individuals whose concepts differed internally, even slightly, could be said to have the same concept.

It is not just an account of concept sharing that is at risk without a robust account of concept individuation. What we are risking is anarchy. Without factoring in some relational properties it seems that we can’t have any account of concept individuation that would classify concepts as types as opposed to individuating them so narrowly that only token-identical concepts can be said to be the same concept. If we can no longer talk in terms of two concept tokens being members of the same type then we cannot even give an account how one person can retain the same concept over time in the face of changing beliefs and experiences.

In response to arguments that concepts must be individuated such that two people can have the same concept, some have suggested that it is over-ambitious and unnecessary to require concept identity across persons so long as we can give an adequate account of concept similarity across persons.4 Couldn’t, for example, two mental prototypes, exemplars, or brain states be similar enough that they could be understood as being the same concept? Fodor and Lepore (1992) reject this solution as logically flawed – they argue that it is not possible to have a robust account of concept similarity without having an account of concept identity. When we say that two things are similar we do so by identifying a sufficient number of identical properties that they share – if one understands concepts as a mental ‘feature list’ (Rosch, 1973; 1975), for example, then for two lists to be similar they need to share a certain number of features, the more they share, the more similar they are. However, as Fodor and Lepore (1992)

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4See, for example, Churchland (1993) and Prinz (2004).
argue, you are going to need to employ a theory of concept identity to give an account of what it means for two features (which are themselves presumably concepts) to be identical, such that two lists can both contain them. You just can't have an account of two concepts being similar without an account of which of their components are identical. However, for this you will need an account of identity, the avoidance of which was the very motivation for giving an account of similarity in the first place.

Even if there were a way for a psychologically-based theory of concepts to provide a robust account of concept similarity, such theories would still face problems with concept individuation. Similarity might give you an account of concept sharing across people, but without an account of relational properties, it can't tell you how, why or that a dog concept is a dog concept and not, say, a bus concept. It is relational properties that allow us to say that concepts are concepts of things in the world or concepts of a particular type. A similarity theorist is still going to have to tell a (presumably) Fodor-like story about how specific concepts are the concepts that they are. In which case, they may as well go the whole hog: if one needs to tell a story about, say, how you developed your spoon concepts to be able to say why your concept is a spoon concept, they may as well tell the same causal, historical or relational story as to how someone else's spoon concept became a spoon concept. If the relationship with the world fixes the identity of the concepts, then no other story about the nature of concepts is needed to say how it is that two people could have the same concepts. Rather they would merely need to have had the same (or similar) interactions with the world.

The psychological properties of concepts are doing the causal or explanatory work – they cause the phenomena that tell us about the nature of concepts. But to individuate concepts in line with their psychological properties would be tantamount to rejecting the task of individuating them altogether. To talk about concepts in terms of their psychological (or intrinsic) properties would be, under most circumstances, pretty useless. Just as you can’t get a good account of individuation by looking at the mechanism, you also can’t get a good causal account by looking at the individuation. Given this, what is a good account of concept individuation?

2. Comparing models of concept individuation

If no robust theory of concept individuation is able to account for concepts’ causal mechanism, then the value of theories of concept individuation must be something other than the role they play in causal explanations of human behaviour. The value of concept individuation must be identified both in order to give us some basis for comparing theories of concepts, and because without the causal/explanatory role, identifying another important role will be significant in explaining why we need a theory of
concept individuation at all.

It was established in the previous section that a robust account of concept individuation must be general enough that multiple individuals can be said to possess the same concept. This was the first hurdle upon which psychological accounts of concepts failed. Any theory of concepts that cannot individuate them generally enough is useless – making generalisations on the basis of individual instances is the basis of science, it is the basis of folk psychology, it is what allows us to meaningfully talk of concepts in the first place.

Merely offering an account of concept individuation that is general enough that concepts can be shared, however, is not going to be sufficient for a good account of concept individuation. An account that does away with the idea of blue and green concepts for grue and bleen concepts Goodman (1983) – grue referring to any concept that picked out or was ‘about’ green things observed before time \( t \) and blue things that had not been so observed; bleen being the opposite – would still succeed in so far as it individuates concepts in such a way that many people can share the same concept. Similarly, I could devise an account that individuated concepts such that when one coin was flipped to show heads, people share concepts, and when it is flipped to show tails, people share concepts (Fodor, 1987). Such an account might be ridiculous, but it fits the minimal condition of being able to individuate concepts so that they can be shared as well as any other account. For all that might be wrong with radically non-standard theories of concept individuation, they rarely face the problem that they don’t allow for concept sharing across persons.

Prinz and Fodor both present theories of concept individuation that individuate concepts such that they appear to run parallel to the way we define or fix the referents of words. However, neither Prinz nor Fodor state the virtues of their accounts of concept individuation in a way that could not equally be understood to be virtues of many alternative possible accounts.\(^5\) Their accounts have some strengths. Firstly, they allow a story to be told about how concepts can be shared. However, as soon as you are individuating concepts in line with their semantic or relational properties almost any account is going to be able to specify what it takes for two people to share a concept in a way that allows for the fact that lots of people share concepts.

The second main strength of Prinz and Fodor’s theories is that they also appear to be able to account for conceptual reference or intentionality – for them, concepts are individuated according to what they ‘detect’ or ‘indicate’, which is also what they are about or refer to. My spoon concept is a spoon concept because it is what I use to detect

\(^5\)This is not to say that Prinz’s proxytype account has no unique virtues – Prinz shows that his complete account has many features to recommend it over rivals. However, this is not specifically the case with the account of concept individuation found within Prinz’s overall theory.
spoons, or what indicates the presence of spoons, and this detection also accounts for the fact that this concept both refers to spoons and is about spoons. The problem is that appearing to account for intentionality does not in fact give their accounts an advantage over alternatives – I could have a grue concept, which referred to grue things, or a (heads-world) spoon concept that was only about spoons in a world where a random coin was showing heads. If what a concept refers to is merely a product of its relational properties, then Prinz and Fodor’s accounts do not give an account of intentionality in the sense that they explain how concepts are about things in the world. Rather they are just specifying what a relationship of ‘being about’ is. The fact that their specified accounts of concept individuation happen to match exactly with their specified accounts of conceptual reference appears to be a virtue of their theories, but in fact gives us no additional reason to favour their respective theories over any alternatives.

What Prinz and Fodor’s theories of individuation do have going for them is that their accounts of intentionality and concept sharing seem to be intuitively correct. These line up with the way that many of us talk about concepts much of the time. A significant problem for considering accordance with intuitions to be a legitimate reason for choosing one theory of individuation over another is that the intuitions about the best way to individuate concepts vary widely. There are, for example, those who intuit that concepts should be individuated in accordance with their psychological properties – a position we have shown to be incompatible with concept sharing; and those who believe that concepts should be individuated on the basis of similarity – a position that has been seriously challenged by the objection that it leads either to holism (so cannot be generalised) or begs the question. And, given the wide range of accounts that individuate concepts on the basis of their semantic properties, there appears to be no intuitive agreement even when the generality requirement has been settled.

An alternative way of choosing between theories of concept individuation that avoids reliance on intuitions per se, is to give preference to those accounts that individuate concepts such that they fit with real categories in the external world. ‘Grue’ and ‘being in a heads-world’ are not natural categories, while ‘water’ and ‘tiger’ are. Therefore, given the fact that concepts must be individuated on the basis of the relationship between mind and world, perhaps we should favour those accounts of concept individuation that respect the actual categories that exist in the world.

The method of individuating concepts in line with divisions that are to be found in the natural world\(^6\) will, of course, only apply to a limited number of possible con-

\(^6\)For example, Putnam (1975) uses an ‘indexical’ account for fixing the referents of concepts when discussing natural-kind concepts.
cepts (this will not give you a guide to individuating concepts such as love, autonomy, belly-dancing...). Furthermore, to individuate concepts in accordance with the natural world, we must presumably have a robust account of how to divide up the natural world (at the right level of generality). Shifting the burden of the individuation project (at least for some concepts) to the natural sciences is likely to meet with greater success in one respect – the natural sciences have evidence they can turn to beyond mere intuitions or stipulation. However, the assumption that the individuation project has been or even that it could be solved for the natural sciences is itself problematic.

Consider biological kinds, and by extension the concepts that refer to them. It is assumed, for example, that the concept dog applies to something that is determined biologically: it is not our belief that makes a dog a dog, but some fundamental feature of its nature that is mind-independent. This is not as clear or as demonstrable as it might appear, for biological kinds are nothing like as rigid or independent as we may like to think. There are, for example, strong Darwinian grounds for arguing that natural kind categories are somewhat vague. Indeed, this claim was made as early as the 18th century, well before Darwin, with the Comte de Buffon (1749–67) pointing out that the concept of rigid biological kinds fell apart as soon as you began to consider cases that did not easily fall into existing biological categories – monstrosities being the most obvious example. Phillip Kitcher (2003) notes that those who individuate concepts with reference to natural kinds, such as Kripke and Putnam, never make reference to biological kinds, and stick instead to the easier cases of elements and compounds presumably for this reason.

Attempts to extend an account of natural kinds beyond elements and compounds – or indeed to include non-natural kinds – must also include a story either about intuitions or concepts. Intuitively ‘dog’ is a more robust category than ‘dog in a heads world’, just as ‘spoon’ is a more robust category than ‘things that have been observed to be spoons before time $t$, or are forks, but have not been so observed’. But if we are going to rely on intuitions then why look to the external world rather than just seeing what our intuitions tell us directly about concept individuation?

Alternatively, it might be that a dog is a dog and a spoon is a spoon because we classify them as such. However, what is it to classify something as something if not to classify it under some concept? Until we have answered the question of how to individuate concepts, we cannot answer the question of whether we classify things as spoons or as ‘things that have been observed to be spoons before time $t$ or are forks, but have not been so observed’, because we have not settled the question of which is the best way

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8Kitcher (2003), “No genetic or karyotypic property will play for species the role that atomic number does for the elements.”
of describing the concept under which they are being classified.

It is worth noting that even if natural (or social) categories could be fixed in a way that would serve as a good model for concept individuation, the work would still not be complete as this would not serve as a model for determining what relationship the concept barer needs to have with natural categories, such that their concepts could be said to be about them. Prinz and Fodor’s accounts are both compatible with saying that concepts should be individuated on the basis of reliably detecting/indicating instances of natural kinds. But, as was demonstrated above, they have not provided a reason to adopt the detection/indication model other than that it is general (in a way that most other theories of concept individuation are) and roughly fits with our intuitions.

There is a further question raised by the suggestion that better accounts of concept individuation will be those that respect (or align with) real categories in the world: why is fit with natural categories important? If, so far, the most important reason to have a semantic–properties based theory of concept individuation is to be able to make generalisations across people, and the reason we want to make generalisations is so that we can have cognitive science and intentional explanations of behaviour, then presumably it would be better if a theory of concept individuation roughly fitted with our behaviour. Even the least disputed natural categories (elements and compounds) do not form a great model on which to individuate concepts of actual people in the real world – there is, after all, a big difference between the stuff around us that we refer to as ‘water’, for example, and chemically pure $\text{H}_2\text{O}$.

Indeed Barbara Malt (1994) showed that subjects were likely to classify some substances such as pool water as being water, and others such as tea as not being water even though pool water is lower in $\text{H}_2\text{O}$.\(^9\)

There appears to be no remaining robust way of choosing between competing accounts of concept individuation.

3. Usefulness

The greatest problem with individuating concepts on the basis of their psychological properties was that this was useless: such systems of individuation did not allow us to make generalisations across people. In the light of the inadequacy of other criteria for choosing between differing accounts of concept individuation, perhaps ‘usefulness’ itself could be a potential criterion for assessing competing theories of concept individuation – and thereby ‘save’ the project of concept individuation.

Usefulness as a criterion can be judged relative to predictive, explanatory (or indeed any other) goals. It is the fact that we want to explain how people identify and interact with green things, for example, that means it will presumably be more useful for us to

\(^9\)Indeed Barbara Malt (1994) showed that subjects were likely to classify some substances such as pool water as being water, and others such as tea as not being water even though pool water is lower in $\text{H}_2\text{O}$ than tea.
adopt a model that entails that people have green concepts and not bleen concepts.

The great strength of talking in terms of usefulness is that it is, to some extent, testable: once we have fixed our aims, we have a basis for comparing competing individuation models relative to how well they satisfy those aims. Such a criterion provides a level of flexibility missing in some of the accounts considered in the last section – it does not tell us which aims we should have, which means it avoids sneaking certain pre-existing assumptions about how we should individuate concepts into an account of concept individuation. In other words, we needn’t fall back on mere intuitions to choose between competing models of concept individuation, even if those models were originally shaped in order to fit with our intuitions.

However, if usefulness is a primary criterion for choosing between models of concept individuation this does not entail that any theory of concept individuation is objectively better than any others. We can only say that one model is better for achieving a specified set of aims, or better relative to our interests. This feature is typical of the way we often individuate things in the special sciences. For the sake of explanatory breadth, we often taxonomise in a way that relies on generalisations that roughly, but not strictly, adhere to causal roles. There may be many ways of differentiating between categories or types, but often these can be assessed as better or worse only against the goals of the person for whom any taxonomy is developed. In fact, even where experts might find it useful to categorise the object of their expertise in one way when running studies or talking to their colleagues, they are likely to categorise very differently when talking to lay-people, children, people who are experts in other fields. The entomologist may think of the one butterfly as *polyommatus icarus*; the ‘common blue’; ‘the butterfly that you are most likely to see at the bottom of the garden’. There will be more or less appropriate contexts for them to use different classifications – talking of the ‘common blue’ may not be specific enough for work, while discussing the *polyommatus icarus* at a dinner party is likely to end in their not being understood (or very popular).

We can think of usefulness as a basis for choosing between competing taxonomical accounts, for example, in the way that we understand and use statistical probability. Statistical probability is a function over a population – its value depends on the interests of the user for whom it is a tool. It will be better or worse as a system depending on the information we have, and the population we specify. For an individual to have a particular probability of, say, developing Alzheimer’s disease, means that they are a member of a population *x* where *n*-number of members of *x* have historically developed Alzheimer’s. The probability of developing a disease for any one person is not an instantiated trait. Any one individual’s likelihood of developing the disease is merely a function over a particular group of which they are a member. Their actually
developing the disease, if they do, has a local explanation (as, it may be argued, do psychological properties). Statistics can be very useful for making predictions, but they are not causes within themselves. Similarly, talking in general terms about behaviour can help us make group predictions, while we still acknowledge that individual mental states vary, depending on local properties.

Any one individual will have a range of probabilities of developing a certain disease in virtue of the fact that they are a member of a variety of population groups. Jemima may, for example, have a particular probability of getting diabetes based on her family history, say, a 3% likelihood. However, when she is seen as a British citizen, she may have a 7% probability of getting diabetes. As she lives in Nauru, however, the country with the highest rate of type-2 diabetes, her probability in virtue of being a resident there rises to 30%. All these things are true of Jemima – she simultaneously has a 3%, 7% and 30% probability of getting diabetes. Probability in this case is a tool that allows us to do many of the things that an individuation model should allow us to do – aid in explanations and predictions. However, its success in doing so should not be taken to reflect an ontological feature of the subject, in this case of Jemima.

There are even examples of useful generalisations across groups that do not pick out the features of any one member of that group. The idea of the ‘learning curve’, for example – a curve which measures the rate of progress in acquiring new knowledge or skills – has proved to be a useful tool, particularly when making predictions about the rate and structure of learning for a population. However, no one actually learns in a curve. Rather, graphs that show the rate of learning in single subjects will consist in steps and spikes – the smooth ‘curve’ comes from averaging over trials and/or participants.

This is essentially what we do in the case of concepts when it comes to groups and generalisations. To say that everyone in the Starbucks on 35th Street has a dog concept allows us to make a number of predictions about their behaviour under likely and hypothetical conditions (for example, if I were to ask each one of them if they knew what a dog was, or to ask them to describe a dog). Talking generally in terms of behaviour and prediction does most of what we want in making conceptual generalisations – we have defined our population, and made (largely) testable predictions about them as a population. The variation in behaviour doesn’t matter too much so long as it is in line with what we are using the generalisation for and the population that we have defined. The value of the goals themselves is, however, going to be subjective.

Note that this model is one that honours the fact that the ontological/causal goals of theories of concepts and the individuation/categorisation goals of theories of concepts cannot be one and the same. An individuation model that says that all people who have been exposed to H2O (more or less) share a water concept is one that can
be better for our purposes of trying to explain or predict certain kinds of behaviour. However, this model neither identifies the mechanism that is causally responsible for any actual instance of behaviour nor does it allow us to say that the concept really is a water concept, or that which has been identified is a feature of its ontology.

It is precisely because the individuation question is not an ontological question that there could be one (ontologically/psychologically) identical concept which could be individuated in an infinite number of equally valid ways. According to our goals sometimes individuating the concepts of Putnam’s doppelgängers such that they share a water concept will be more useful (and therefore better), and sometimes not. Similarly, there can conceivably be some goals for which even individuating concepts such that we get a grue or heads-world-spoon concept will be more useful.

**Conclusion**

If you reject the view that usefulness should be a criterion when choosing between theories of concept individuation then, as I have argued above, this is a reason to reject the individuation project altogether. Alternatively, if you accept that we should consider theories of individuation as tools that can be more or less useful relative to a set of goals, this will have a number of consequences. The first is that concept individuation should not be the main goal of a theory of concepts: no theory of concept individuation is objectively better than any other. The second is that there will be cases where there is just no fact of the matter about what concepts we have. This will mean that certain types of puzzles for concept individuation, such as Frege puzzles, can never be ‘solved’.

The view that individuation is what is important for a theory of concepts – that the semantic properties of concepts are more important than their psychological properties – is like arguing that being able to say which colour is which is important for a theory of colour. We can look at how people and animals respond to colours; develop theories of how colour is selected for in nature; study the reflectance properties of pigmented surfaces, the frequencies of light waves, rods, retinas, optic nerves, occipital lobes; all without having a robust theory of colour individuation that holds across all cases, or is independent of mere specification in the terms that we are studying (e.g. blue is nothing more than light waves that fall within a particular frequency).

This is not to say that being able to make generalisations is not vital for such theories as it allows us to articulate our findings within and across different domains. However, individuating concepts such that we can say that two people share a concept can be useful, but it doesn’t matter exactly how we do it. It will only be better or worse relative to our goals, not objectively better or worse – individuating concepts
should be a tool to aid theories of concepts, not a reason to choose or reject theories.

References


