

Universals – Humanity’s Greatest Creation
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The Framework

Many accounts of universals fail because of their ontological extravagance, so I first want to outline the metaphysical picture within which I think the topic of universals should be discussed. I take the first issue in philosophy to be naturalism versus supernaturalism, and I favour naturalism, by which I mean an assumption that nothing supernatural exists. This is a very vague commitment, meaning only that we should focus our understanding on this universe, and whatever evidence it can offer. Given the reliance on evidence, the further positive commitments of this naturalistic view can only emerge in response to what is discovered. All clarifications of naturalism itself must therefore be negative, in terms of what counts as ‘supernatural’, and is thus to be rejected.

The supernatural has two major possible versions, and one borderline case. The first major possibility is Spiritualism, which is a commitment to non-physical and non-natural minds, existing independently from our observed universe. In previous millennia this may have been a live possibility, because the existence and character of the universe was too bewildering and awesome to be explained naturalistically, but in the light of modern knowledge I can see no plausible evidence for Spiritualism, and (since I favour beliefs based on evidence) I think its claims should be ignored. The second major possibility is Platonism, which commits to some set of concepts, ideals, principles, laws or necessary truths, which exist outside of nature. We seem to be faced with some evidence for such things, whenever we talk and think, and supernatural Platonism has some plausibility if no naturalistic explanation can be given of these phenomena. However, the fact that these phenomena are only observed when *people* think and talk is a very good reason to think that Platonic objects are an aspect of people, rather than evidence arriving from beyond nature. Hence I think strong Platonist claims should also be ignored.

Fregeanism

The borderline case is Fregeanism. Gottlob Frege spends most of the first part of his 1884 work *Foundations of Arithmetic* rejecting physicalist and empiricist accounts of arithmetic, logic and abstract objects. The focus of his attacks is on what he calls ‘psychologism’, which is the claim that all of these phenomena are aspects of human thought, rather than of some external reality. His main point is that if logic is merely a description of how we think, then logic is a contingent and local matter, whereas logic struck Frege as having a universality quite independent of humanity. Formal logic, he tells us, describes not how humans *do* think, but how they *should* think. He would have expected alien lifeforms to roughly agree with our logic, once we get it clear. Late in his career he offered a metaphysical framework for this view, in terms of a ‘Third Realm’. The first two realms are the physical and the psychological, and the Third Realm is the part of reality where necessary and universal truths reside.

The Fregean Third Realm is a borderline case because it is unclear whether it is intended to be part of nature, or to be supernatural. Frege is often described as a platonist, but his view has many modern supporters, who are impressed by the independence of logic and arithmetic from localised modes of thought. These supporters nearly always reject traditional Platonism, so their implicit idea is that the Third Realm is an aspect of nature, one which is rarely explicitly acknowledged. Similar claims are sometimes made about consciousness, as an ontologically distinct realm within nature.

When faced with a claim that some slightly bizarre entity exists within nature, I immediately think of three rather basic questions which I can't shake off: what is it made of, what are its causal powers, and where is it located in space-time? If the answer is that it is made of nothing, has no causal powers, and is ubiquitous and timeless, then it is either of no interest at all, or it has titanic implications for physicists. In brief, I take Fregeanism to be a supernatural doctrine, and it can be rejected if we can find more plausible naturalistic accounts of abstract phenomena.

Physicalism

Given my rejection of Spiritualism, Platonism, and Frege's Third Realm, and that I personally don't see consciousness as anything more than a brain process, this makes me a Physicalist. Opponents of physicalism doubt whether this doctrine can be formulated clearly, but that doesn't bother me. I'm actually an Ontological Physicalist (meaning only physical things exist), but we can always fall back on Methodological Physicalism (meaning, let's see how far we can get with the assumption that everything is physical). If you are appalled by my physicalism (as many people seem to be) then you should still pay attention to the project of Methodological Physicalism, because its failure would be your triumph. Tough physicalists are also eliminativists, firmly denying the existence of everything non-physical, but I am a friendly reductive physicalist, who accepts all of the puzzling phenomena like minds, logic, mathematics, values and laws, but predicts that they all have physical explanations (though some of these explanations may be permanently out of our reach, particularly if they are exceptionally complex).

That sketch of my framework was necessary, to motivate the picture of universals I wish to propose. If universals are granted a free-floating life of their own, it seems to me that that plays havoc with any sensible worldview we were hoping to assemble, so universals need to be anchored in the natural world, where some evidence is available.

Universals

The problem of universals seems to have arisen when Socrates and/or Plato tried to explain linguistic communication. If I say 'I'm off to meet Callias', it is obvious which object 'Callias' refers to, because it is the name of an individual. If, however, I say 'I'm off to buy a banana', it is no good asking which object is being referred to. It can be any one of thousands available for purchase. If I say 'Bananas are nice', this refers to all past and future bananas, and even possible bananas that are never realised. And yet we hold sensible conversations about bananas, so we must all mean the same thing every time the word is uttered; otherwise communication collapses. An examination of language reveals that (apart from proper names) virtually every word has this universal character. Prepositions like 'in', verbs like 'walk', adverbs like 'absurdly', pronouns like 'she', and conjunctions like 'but', have to retain a fixed meaning in variable contexts, to make sense of language. It doesn't take much introspection to see that this observation about the nature of language also applies to the nature of conceptual thought. I see that one flower is the same species or colour as another, even when I can't find the appropriate words. The most important of these universal concepts either pick out features of the world, or they classify the ingredients of the world.

If universals are found in thought as well as in language, we can speculate as to whether animal minds employ universals. On the whole they don't communicate in languages, but they do show every sign of thought. If we surmise that some bird has no interest when a pigeon flies over, but always goes very still when a hawk flies over, that is a generalised response, which seems to require some involvement of universals. Lesser animals cannot be so sensitive to the general features of a situation, so this mode of thought (even if it is

non-conscious) is a powerful tool for life. Among human creations, I name universals as the greatest, because of the subtle and extensive power which they bestow on us. In particular, I think the capacity to formulate universals about universals, which largely depends on language, is the really special feature of human thought. However, it remains for me to defend the claim that universals are 'human inventions', which brings me to the point of this talk.

Four Sources of Universals

If we pull the two ends of a piece of string or rope, it gets straighter as the tension is increased, and we can see that this converges on a limit, but doesn't quite get there because the cord is lumpy. If I invite a group of people to stand equidistantly from a small object, they can be nudged until they get it roughly right, which converges on a different limit. In the first case the possibility of a straight line is obvious, and in the second a circle. We perceive this phenomenon without invoking the words 'straight' or 'circular'. Call this response to perception '**idealisation**'. If we then look elsewhere in our experience for idealisations, we find them everywhere, and the perception of the relevant limit always seems possible without resorting to words, at least in simple cases. Think of aiming projectiles, dividing portions of food, aspiring to health, keeping your family happy, and planning the route of a journey. In each case there is an ideal limit which emerges from the situation, and may even be obvious to animals. Words like 'equal', 'straight', 'quickest', 'fairest', and 'normal' denominate these limits, and provide quick labels for the objectives of our behaviour.

Another phenomenon is illustrated by an enduring puzzle of mine: if I say 'I like your chair apart from its colour', what object am I claiming to like? It seems that the object both is and is not your chair. Notice that I have not mentioned another colour, so I seem to be liking a chair of indeterminate colour – yet all chairs must have a colour. I said I liked a chair, but I seem to only like most of a chair. Among other things this illustrates the phenomenon of psychological **abstraction**. This normally takes the form of focusing on a feature of something, such as the colour of a chair. This has been called 'abstraction by ignoring', since you normally select the colour of the chair, and then ignore the chair's other features (if you, perhaps, express a liking for that colour). In my example I have selected the colour, and then ignored the very thing I have selected, and talked about what is left behind. Abstraction is the traditional account given of how we derive universals from experience, by selecting some features and ignoring others. Nietzsche suggests that we produce the concept 'leaf' by equalising them, which is abstracting away their minor differences.

Frege vigorously rejected psychological abstraction, and Geach launched a sustained attack in his *Mental Acts* (1957). In its place Frege proposed to derive abstract concepts from the sets arising from concepts already known – his famous example being to start with the concept 'parallel', and then derive the new concept of 'direction' as the set of all lines parallel to a given line. Thus Fregeans hijacked the idea of abstractionism, dropped the psychology, formalised it, and built elaborate systems around it. However, this powerful tool (though useful in maths and logic) does not capture real thought and talk, as illustrated by the fact that Frege's definition cannot capture the difference between the directions east-to-west and west-to-east, or the concept of direction involved in pointing (which invokes one line, not a set of parallels).

To the phenomena of idealisation and abstraction, let me add a third. A collection of trees is thought of as a 'wood'; if I lack confidence, my 'self-esteem' is low; if the circumference and the diameter of a circle have a fixed ratio, I can become fascinated by an entity known as 'pi'. In a multitude of such cases, we encounter qualities, processes, states and collections, and immediately express them as nouns, and think of them as objects. Call this

capacity '**objectification**'. There is some research evidence that we reason much more quickly about objects, and it seems plausible to think that after a bird has assembled some twigs correctly, it spends the next few months of its life focused on one nest rather than on many twigs. I assume that our environment does contain many highly significant objects, like fruits and predators, and that our minds are well attuned to dealing with them – so well attuned that we try to reduce the vaguer parts of our experience to that tangible form, treating as much as possible of our experience in objectual terms. An obvious benefit of objectification is the generation of 'units', when we need to count things. In discussions among economists, sociologists, biologists and mathematicians, new nouns (each implying an abstract object) are quickly introduced with alarming frequency. Over-simplification may be a danger, but progress in tracking implications often accelerates as a result.

Finally, let me return to the coloured chair. If I pick out the redness from the chair, and either focus on the red and ignore the rest, or ignore the red and focus on the rest, that concerns a single instance of redness. But I can think of transferring the redness to my own chair, or think that the red should be darker, or that no one should ever paint a chair red. It may be said that this illustrates the power of universals, and throws no light on their origin in our psychology, but it seems to me that there is a drive towards **generalisation** here, and that this is a capacity that precedes the concepts and words that we usually employ for the task. I take our capacity for inductive reasoning to be an aspect of our capacity for generalisation. My definition of induction is simply 'learning from experience', and I take that to be done by all larger creatures (and to be self-evidently rational). Without generalisation, learning from experience would be impossible, since no two experiences are ever quite the same. Hence I surmise that explanations of animal behaviour must refer to generalised desires and prejudices, rather than mere triggered responses to specific situations.

Psychological Universals

I assume that the existence of the four capacities I have picked out will suffice for the creation of our universal concepts, and that all four capacities will often be involved. Consider three examples: a circle, the property of softness, and being a duck. All of these seem to count as universals. I surmise, in the case of a circle, that the idea of a line is an idealisation, and we can abstract the circle from the perimeter of some lines which are equal and convergent; this abstraction can then be objectified (and named 'a circle'), and then generalised (in the formula for its area, for example). The concept of softness is mainly abstracted, and can then be generalised because it is a universal, with objectification only occurring when we further abstract to compare one softness with another, and idealisation is available as a resource when comparing softnesses. Abstraction leads us to see the close resemblance in features of several birds, which are thus classified as the same, and named 'duck'. It probably needs language to get us to the objectification stage, when we say 'the duck is extinct in Somalia' (perhaps). My account of universals does not refer to resemblance (a basic capacity for David Hume), but that is because I take such observations to be prior to the generation of universals. It is only when we home in on the 'respect' of a resemblance, which needs abstraction, that a universal concept begins to emerge. Similarly, Hume's 'contiguity' might precede objectification, and 'causal conjunction' might precede generalisation, so that universals emerge at a later stage than his associations.

That sketch will have to suffice, but it seems to me that if we grant these four mental capacities, the emergence of universals is predictable, inevitable, and fairly unproblematic. I may have missed other capacities, and maybe one of the capacities can be reduced to the other three, but for now I am happy with my proposal.

I have stressed the continuity of our mental capacities with those of animal minds, for obvious evolutionary reasons, and to show that the creation of universals need not be a conscious or deliberative process. I assume that humans are distinguished from the rest by a capacity for second-level thought, which unleashes much more flexible and imaginative behavioural strategies. I take language to be a consequence of this evolutionary development, rather than a cause, presumably because we are also team players who need to communicate. The four capacities of idealisation, abstraction, objectification and generalisation I take to be aspects of our emerging capacity for meta-thought.

We are unlikely to reach evidence-based conclusions about my proposal, but I am happy that there is a highly coherent picture here. The four mental phenomena I have picked out strike me as a) undeniable, b) plausibly seen as preceding the existence of the words and concepts involved, c) reasonably continuous with the rest of the natural world, as required by a naturalistic evolutionary theory, and d) offering in concert quite powerful explanations of the range of concepts we call universals. Hence I conclude that it is not difficult to subsume an account of universals within a thoroughly naturalistic and (indeed) physicalist worldview. Anyone also willing to accept a fairly physicalist view of the mind ought to feel that a metaphysical consensus is attainable, without recourse to anything more elusive and weird than the stuff we are made of.

Some Objections

I anticipate two major lines of objection to what I am proposing. The first will dismiss it as speculative amateur psychology, which depends on unsupported claims about the origins of our universal concepts. My theory also seems to invoke mental 'faculties', which psychologists abandoned long ago. To this sort of objection I will plead a bit guilty, but remain unflustered. Any theory of the origin of concepts, whether it be the empiricist associationism of Hume, or the claims of innateness in Chomsky and Fodor, will struggle to find conclusive evidence. We all have heads full concepts acquired through language, but where they all came from is obscure, and if we examine the creation of a new concept, in economics or sociology, it still remains unclear which theory gives the best explanation. I have claimed that my theory is based on obvious facts about how we think, and is consistent and unlikely to be wholly refuted. I say the onus of proof rests with the opposition, because what I defend rests on a straightforward ontology of a physical cosmos and embodied minds. If I am wrong, and universals derive from some more refined or transcendent or supernatural or spiritual realm, then we should only take that seriously if a robust and plausible ontology is offered in support.

I also defend my talk of 'capacities' or even 'faculties' of the mind, in defiance of any rejection by more scientific psychologists. If you start from metaphysics, and work backwards towards the mind that thinks the metaphysics, then it is absurd for philosophers to stop at that point, for fear of intruding into the territory of another specialism. My notion of a mental 'capacity' is a placeholder for things that brains do. If our best metaphysics entails the capacity, then the capacity must exist, and we can leave other disciplines to uncover the systems and chemistry that support it.

The second major objection to my approach is Frege's, and I take that more seriously, because the onus of proof lies with me. I think my view that universals are created by the human mind would be applauded by Aristotle, and by most medieval philosophers. However, Frege and his followers will be shuddering with horror. Frege argued that if logical and arithmetical concepts are psychological creations, then this makes them far too subjective, and so their universality is undermined, which thus destroys their entire purpose and value. My four psychological modes are idealisation, abstraction, objectification and

generalisation. But if you and I put these into practice, my idealisation may converge on something slightly different from yours, I may abstract some feature which you haven't even noticed, I may treat as an object something which to you is obviously a collection, and my accurate generalisations of my experience may be falsified by counterexamples in yours. When Peter Geach endorsed Frege's worries about universal truth, he also rejected my whole notion that concepts could be formed from experience in this psychological way, and claimed instead that they are wholly rational creations from within the mind, rather than responses to chunks of experience. Hence their picture is of an a priori world of interlocking truths, and our concepts are seen as attempts to engage with this world of ideas (rather as Plato's philosophers approach the Forms through dialectic).

My reply to Frege's objection must either attack the universality claimed for logic, arithmetic, and many of our general concepts, or defend the ability of my key psychological capacities to achieve a degree of universality which transcends the individuality of innumerable human minds. Fans of conventionalist theories of logic, or pluralist acceptance of many logical systems (even if they contradict one another), may opt for the first defence, but I will opt for the second. That is, I do not wish to give up the dream that there may be a one true logic, even if logic arises from human capacities, so I will briefly point to a defence of the idea that psychological capacities can give rise to universal truths.

My defence is naturalistic. The three options for grounding our universal concepts are convention, the a priori, or experience. Convention undermines any dreams of universality, and the wholly a priori approach is appealing until you try to spell out the ontology, so concepts which rest on experience are clearly superior. If logic and arithmetic are no more than languages which rest on some axioms, then you can have as many logics and arithmetics as you like, but logic and arithmetic that work in the real world have a rather obvious pragmatic superiority, and a theoretical priority because they embrace the world, as well as their inner formal consistency. So how do you generate a system which engages with experience, and matches the world? Easy. You derive the relevant concepts from experience, in the manner I have described. Idealisation relies on experiences which have a convergent character. Abstraction relies on our experience of the varied aspects of unified objects. Objectification is a technique learned from experience, when we pull clusters together into unities (in more and less obvious ways), perhaps by simultaneity, or co-location, or causal co-ordination. And generalisation refers entirely to the unspoken experience of regular patterns, which must occur in any conscious mind that encounters the structures of our world.

The resulting conceptual schemes, theories and systems contain truth, clarity, coherence and consistency, precisely because those are features of the world. We do not allow contradictions in standard logic, because nature does not contain contradictions. We seek conceptual coherence, because the idea that nature is actually incoherent strikes us as ridiculous. My proposed psychological framework for generating the universals on which thought relies is extremely successful in generating universal truths, precisely because that is what universals are for.

Bibliography

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| Frege, Gottlob | <i>The Foundations of Arithmetic</i> (1884) |
| Geach, Peter | <i>Mental Acts</i> (1957) |
| Jenkins, C.S.I. | <i>Grounding Concepts</i> (2008) |