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Jerry Fodor on non-conceptual content

Katalin Balog

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Abstract Proponents of non-conceptual content have recruited it for various philosophical jobs. Some epistemologists have suggested that it may play the role of “the given” that Sellars is supposed to have exorcised from philosophy. Some philosophers of mind (e.g., Dretske) have suggested that it plays an important role in the project of naturalizing semantics as a kind of halfway between merely information bearing and possessing conceptual content. Here I will focus on a recent proposal by Jerry Fodor. In a recent paper he characterizes non-conceptual content in a particular way and argues that it is plausible that it plays an explanatory role in accounting for certain auditory and visual phenomena. So he thinks that there is reason to believe that there is non-conceptual content. On the other hand, Fodor thinks that non-conceptual content has a limited role. It occurs only in the very early stages of perceptual processing prior to conscious awareness. My paper examines Fodor’s characterization of non-conceptual content and his claims for its explanatory importance. I also discuss if Fodor has made a case for limiting non-conceptual content to non-conscious, sub-personal mental states.

Keywords Non-conceptual content · Consciousness · Sub-personal mental states · Iconic representation · Discursive representation

This paper has grown out of comments I made on Fodor’s paper “Revenge of the Given,” delivered at The Steven Humphrey Excellence in Philosophy Conference: “Content and Concepts: A Conference on the Philosophy of Mind” at the University of California, Santa Barbara, February 14, 2004. Thanks to Jerry Fodor for useful feedback, and to Barry Loewer for discussing with me the ideas that went into this paper.

K. Balog (✉)
Department of Philosophy, Yale University, P.O. Box 208306, 406B CT Hall, New Haven,
CT 06520-8306, USA
e-mail: katalin.balog@yale.edu

Evans (1982) introduced the term “non-conceptual content” into contemporary philosophical discussion to characterize perceptual and certain other mental states including the mental states of certain animals. His idea was that these states are like thoughts in so far as they are representational. But they are unlike thoughts in that where a thought, say *that the cat is hungry*, has a *conceptualized content* composed out of the concepts *cat* and *is hungry*, a person’s visual perception of the cat is not composed out of concepts and represents the cat in some other way. Since Evans, there is no agreement among philosophers (it should go without saying) whether the conceptual/non-conceptual distinction characterizes two kinds of content or characterizes two ways of possessing content, or both, or something else. Correspondingly, there is disagreement as to whether there is any non-conceptual content at all. Some philosophers (McDowell 1994) think that “*non-conceptual content*” can be shown a priori to be a philosophical oxymoron while others (Stalnaker 1998) have argued that understood properly all content is individuated non-conceptually.

Proponents of non-conceptual content have recruited it for various philosophical jobs. Some epistemologists have suggested that it may play the role of “the given” that Sellars (1956) is supposed to have exorcised from philosophy. Some philosophers of mind (e.g., Dretske 1981) have suggested that it plays an important role in the project of naturalizing semantics as a kind of halfway between merely information bearing and possessing conceptual content. These are important matters but in view of the confusion and controversy concerning the very existence of non-conceptual content it will first be helpful to have in front of us a specific proposal about the nature of non-conceptual content and see if there are reasons to believe there is any of that and if there is what it might be good for.¹ Here I will focus on a recent proposal by Fodor (2007). Fodor is the leading philosophical developer and exponent of the representational theory of mind (RTM) and its subspecies the computational theory of mind (CTM) so it is a significant matter that he has found a place for a kind of non-conceptual content within these frameworks and empirical evidence for its existence. In the paper he characterizes non-conceptual content in a particular way and argues that it is plausible that it plays an explanatory role in accounting for certain auditory and visual phenomena. So he thinks that there is reason to believe that there is non-conceptual content. If he is right than a priori arguments that there can’t be non-conceptual content are empirically refuted, at least if proponents of those arguments mean the same thing by “non-conceptual content” as Fodor does. On the other hand, Fodor thinks that non-conceptual content has a limited role. It occurs only in the very early stages of perceptual processing prior to conscious awareness. Epistemologists and semantic naturalizers will be disappointed. My paper is limited to examining Fodor’s characterization of non-conceptual content and assessing his claims for its explanatory importance. At the end I will briefly discuss how Fodor’s kind of non-conceptual content may play a wider role in our mental lives.

¹ Stalnaker (1998, p. 339) remarks: “But Evans gives us no direct and explicit characterization of the notion of nonconceptual content that he introduces—at least none that I can find. And it is not clear to me that the different philosophers using this term mean the same thing by it. Without some account of what nonconceptual and conceptual contents might be, it is difficult to have more than a general impression of what this controversy is about.”

1 Background to Fodor's proposal

How one makes the conceptual/non-conceptual distinction depends on what one thinks concepts are, and what one thinks is required to possess concepts. Fodor's account of concepts is developed within the framework of RTM. According to Fodor's version of RTM, beliefs, thoughts, memories, thinking and so on are intentional states and processes subject to laws in virtue of their intentional contents.² On RTM, mental states are intentional because they involve representations that possess semantic properties (reference, truth conditions and so on).³ For Fodor, concepts are constituents of thoughts and thoughts are representations in a language-like medium, the LOT. So concepts are mental words. Thoughts (and concepts) may be either conscious or unconscious and may be either personal (like occurrent thoughts and memories) or sub-personal (like the states of the visual and language processing systems that are inaccessible to consciousness). Words in the LOT (i.e., concepts) correspond to singular terms, predicates, logical terms, and so on. Fodor is an atomist about concept individuation and possession. What makes a particular concept the concept it is its orthography,⁴ its syntax and its reference. He is an atomist in that he claims that the reference of most logically simple concepts is metaphysically independent of the reference of any other concepts. So Fodor's view is that you could (metaphysically speaking) possess the concept *cow* without possessing the concepts *animal*, *animate*, *milk* or, for that matter, any other concept. Fodor has long argued against molecularist and holist views of concept individuation that say that concepts are individuated in terms of the inferential or causal roles they or the thoughts that contain them have with one another. This doesn't mean that he thinks that concepts don't have causal roles or that he denies that as a matter of contingent fact or even nomological necessity some of these roles are involved in determining a concept's reference.⁵

Fodor's account of what it is for a predicate concept to refer to a property is intended to be a version of naturalistic semantics. His view is that a sufficient condition for the concept *is a cow* to refer to the property *COW* is for tokens of *is a cow* to asymmetrically depend on instances of *COW*. Roughly, this means that there is a law $L(COW, is a cow)$ to the effect that tokens of the property *COW* cause tokens of the concept *is a cow* and other properties, e.g., *HORSE* cause *is a cow* only because $L(COW, is a cow)$ but there is no property *Q* such that $L(COW, is a cow)$ depends on $L(Q, is a cow)$. Fodor seems to understand the dependence relation in the account to be a basic metaphysical relation. There are many questions and problems with this account but since they are not central to Fodor's account of non-conceptual content I will ignore them.

² An example (Fodor's example) of a psychological law: if someone wants *X* and believes that doing *Z* will satisfy his want for *X* then, *ceteris paribus*, she will form an intention to do *Z*. The law is intentional since it relates psychological states in virtue of their intentional contents. It is a *ceteris paribus* law since it may be interfered with or overridden by other factors.

³ For example, the state of believing that *p* is a functional state that includes a representation that has the content *that p*.

⁴ By "orthography" I mean what ever it is that physically distinguishes two simple terms from one another.

⁵ Sometimes Fodor makes an exception for logical concepts e.g., *or* and grants that they may be individuated in terms of their inferential roles.

The claim that concepts are words in a language of thought has important consequences for an account of thought and thinking. One consequence is that language like representations, like thoughts, manifest *systematicity*. This means that if a person (or a sub-personal module) can token a representation with the structure aRb (“a is related by R to b”) then, *ceteris paribus*, she can also token bRa and so on for other syntactic structures. A related consequence is compositionality. If a person can think aRb and cQd and possesses a conjunction concept she can also think $aRb \& cQd$. Further, the content of the later thought is a function of the contents of its constituents. A second, enormously significant, consequence is that syntactically structured representations are suitable for computation. For example, one can compute aRb from bRa . According to the computational theory of mind (CTM), mental processes are (for the most part) computations over syntactically structured representations.

According to CTM, intentional laws are implemented by computational processes. Memory recall, perception, intention formation, learning, and other mental causal processes satisfy lawful regularities in virtue of intentional features and these laws are implemented by computations over mental states and their constituent concepts in virtue of their syntactic structure. Fodor’s calls this “the best idea in cognitive science.” The reason that it is “the best idea” is that computation over syntactically structured representations is sensitive to the syntactic and logical forms of those representations and in virtue of that it can be sensitive to the intentional and semantic properties of those same representations as well, since the latter is, subject to appropriate contexts, encoded in the former. Given the right “program,” a computer or a mind can take as input representations of various acoustic properties impinging on our auditory system, and produce as output a representation with the content that the dinner bell is ringing and given a further program take this input and produce a representation with the content that it is time for dinner.

Fodor proposes that the mind’s architecture consists of modules and a central reasoning mechanism. The modules are dedicated to specific processing, e.g., producing representations of objects in three dimensional space from representations of two dimensional layouts, while the central reasoner engages in reasoning about matters in general. Its processes, or the outputs of its processes are at least partly available to consciousness (Fodor, perhaps wisely, does not have much to say about what consciousness is) while modular processes are typically not available to consciousness although its outputs affect consciousness. Modular and central reasoning involve languages of thought typically with different vocabularies. A module involved in visual processing may compute over a representation that represents patterns of light while the central reasoner may have no representations with the same content. So a person’s visual module may employ a concept that is unavailable to the person. Modules communicate with each other (often just one way) and with the central reasoner. Some modules—peripheral ones—are causally connected to stimuli. It is here that the mind meets the world either by being effected by the world or affecting it (via one’s bodily movements). For example, a visual module may “transduce” photon impacts to produce a representation of a two dimensional pattern of light. Prior to Fodor’s recent paper one might have thought that his view is that all mental representations are elements of a LOT and so conceptual and so subject of computations. But in this paper

he suggests that there may be representations that are not conceptual. If that is so then it will lead to complications in Fodor's theory of the mind.

2 Fodor's account of non-conceptual representations

Our first problem is to figure out what Fodor means by “non-conceptual” (or “pre-conceptual”) representation. The kind of non-conceptual representation he is mostly interested in he calls “iconic.” He is thinking of such representations as being in some way “picture like.”⁶ He defines iconic representations by way of “the picture principle”:

(PP) If P is a picture of X, then parts of P are pictures of parts of X. (Fodor 2007, p. 108)

The general idea appears to be that representation R is *iconic* iff every part of it represents a part of what R represents. This fits two-dimensional pictures—at least the kind involved in representational art—tolerably well. A part of da Vinci's Last Supper may represent a part of an apostle, or a table, or ..., etc. “Part” in this case means “spatial part.” Fodor contrasts this with “discursive” representations, a class that includes conceptual and linguistic representations. Obviously an arbitrary spatial part of “There were twelve apostles” need not represent anything and if it happens to represent something, that needn't be part of what the whole represents (there isn't any *post* represented by the sentence). Fodor observes that an iconic representation, unlike a discursive representation, doesn't have a canonical decomposition. A linguistic representation, for example, *Judas is an apostle* decomposes into a singular term and a predicate. But a picture can be cut up in no end of ways, none more canonical than another. Fodor also makes the point by saying that pictures don't have constituents—just parts. However, he also says that iconic representations, just like discursive representations, are compositional. This means, I suppose, that what the whole picture represents is a function of what its parts represent. It is not at all clear, however, that pictures are compositional in the way sentences are. The part of The Last Supper that represents Judas' eyes does so only in the context of the whole picture. A matching bit of canvas in a different painting might represent something quite different (say the marking on a snake). Because discursive representations are compositional, the meaning of a complex discursive representation expression can be computed from the expression's logical/syntactic structure and the meanings of its parts. But if icons don't have logical/syntactic structure and the parts of an icon mean what they do in virtue of their locations in the whole icon it doesn't seem that one can *compute* the content of the icon from the contents of its parts except in a quixotic sense.

One of Fodor's main points about iconic representation is that because they don't possess logical form, they don't involve principles of individuation. His discussion of this is a little obscure. He says

⁶ However, not all icons are pictures. Fodor gives the example of a graph representing the distribution of a property in a population.

To be sure, a photograph may show three giraffes in the veldt; but it likewise shows a family of giraffes; and an odd number of Granny's favorite creatures; and a number of Granny's favorite odd creatures; and a piece of veldt that's inhabited by any or all of these. No doubt, we usually can agree about how to interpret such a photograph; we do so in light of whatever project we happen to have in hand. But that's not the relevant consideration; what matters is that the discursive symbol (i.e., a concept) 'three giraffes in the veldt' specifies a scene relative to such concepts as THREE, GIRAFFES, IN and THE VELDT. A fortiori, a mind that lacks these concepts can't use that symbol to represent the scene. Contrast iconic representation: you can, of course, *see* three giraffes in the veldt without having GIRAFFE, etc ... Nor do you need them to take a picture of three giraffes in the veldt; a camera and film will suffice. (Fodor 2007, p. 110)

What Fodor seems to be getting at is that the constituents of the description or concept "three giraffes in the veldt" are singular and general terms and quantifiers. The apparatus of singular/general terms and quantifiers presupposes an ontology and principles of individuation for that ontology. In this case an ontology that includes giraffes. In contrast the iconic representations are not composed of singular terms, general terms, and so on. They don't possess a canonical decomposition into names and predicates and so presuppose no ontology. The icon of three giraffes in the veldt carries the information that there are three giraffes as part of the welter of other information it carries, e.g., that there are necks and horns of specific shapes, lighter and darker areas, something that consists of a bit of a giraffe's head and the branches in its mouth and so on. The picture doesn't represent the giraffes *as such and such*. It simply represents them. A person who has the concepts *giraffe*, *three*, *veldt*, and so on can look at the picture and extract from it the information that she conceptualizes as *three giraffes in the veldt*. Someone who doesn't have these concepts can form a visual representation that carries the information carried by the picture but she won't be able to extract this information in conceptualized form.

There certainly are pictures and other non-syntactically structured representations that exist outside of the mind. These representations lack "original intentionality" and presumably represent in virtue of relations to mental representations of various kinds.⁷ The question is whether there are any non-conceptual representations *inside* the mind. And if there are, what role they play in perception, cognition, and so on. Before discussing Fodor's reasons for thinking that there may be non-conceptual representations, we need to get clearer about his "picture principle."

(PP) If P is a picture of X, then parts of P are pictures of parts of X.

This is reasonably clear when X is a painting or photograph but how can it apply to a mental representation? Tokens of mental representations are aspects of brain events and though they occur in space-time it is implausible that their arbitrary space-time

⁷ Grice (1957), Schiffer (1972), Lewis (1969), and others have tried to spell out how the conventional meaning of signs is grounded in the representational features of the mind. Presumably some account along these lines can be extended to conventional iconic representations.

parts represent parts of whatever they represent. Some of these parts are too small and some are too scattered. The problem is to specify what kinds of neural events correspond to non-conceptual representations and so what parts are relevant to the picture principle. I don't know how to solve this problem. It will have to be solved if the picture principle is to be understood as characterizing an interesting kind of non-conceptual content and I will return to this point later. Fortunately, we don't need to solve it to understand Fodor's argument for non-conceptual content.

Fodor's argument for the existence of iconic mental representations in perceptual processing involves a phenomenon that psychologists call "the item effect." The item effect is a consequence of representing information conceptually (or more generally, discursively). If information is represented by sentences composed of a names a_1, a_2, \dots , etc, and predicates P_1, P_2, \dots , etc, then increasing the number of names and/or predicates in a system of representation will increase the quantity of information that can be represented but also increase the amount of processing required to extract information from an array of representations. For example, list the members of the Yale philosophy department, their hair color, whether they have a beard, etc. Consider the processing involved in answering the question whether any member of the department has red hair. Obviously, the more members there are in the department, the more processing will generally be involved in answering this question. This is an "item effect." Other things being equal, if a process takes longer the more information is encoded in the representations involved there is evidence that the information is represented conceptually. Fodor says that if processing involves a system of representation that is iconic then there will be no item effect. Take a photograph of the members of the Yale philosophy department. Checking whether or not there is any reddish hair in the photograph (rather than checking for people with red hair, since that involves individuation) can be done instantaneously, by placing a filter over the photograph that allows only light typical of reddish hair to pass. The result times will be roughly the same irrespective of whether there are 5 or 25 philosophers on the picture. Fodor argues that if some mental processing fails to exhibit an item effect then that is some evidence, although not conclusive, that the representations involved are iconic.

Fodor claims that there are visual and auditory processes involving representations that don't exhibit an item effect. His most convincing example involves work by Bela Julesz and his colleagues concerning the perception of computer generated displays of matched pairs of visual stimuli, each of which consists of an array of many randomly positioned dots (for a review, see [Julesz 1971](#)). In Fodor's description

The two arrays in a pair look identical to casual inspection; but, in fact, the location of some of the dots is slightly shifted from one to the other. Under conditions of stereoscopic presentation (one member of a pair is presented to each eye), such stimuli produce a powerful illusion of three dimensionality. The area containing the displaced dots appears to emerge from a shared background. ([Fodor 2004](#), p. 20)

Fodor observes that the displacement of the dots must somehow be registered by the subject's sensory representation of the stimulus since the sensory representation is the

only information about the stimulus that's available to affect what the subject sees.⁸ If it failed to preserve the information that some of the dots have been displaced, there could be no illusion of stereopsis.⁹ Moreover, the information so preserved must be accessible to the mechanisms of perceptual analysis. In effect, the visual system must compare a representation of the left-eye stimulus array with a representation of the right-eye array in order somehow to determine which dots have moved. Fodor goes on to argue that

... there is every reason to doubt that the representations that are used to make this comparison could be conceptualized.... Since the depth illusion is instantaneous and can be produced by stimulus arrays with thousands of dots, the amount of information that would need to be registered and processed to make the relevant estimates would be orders of magnitude too large to be feasible. And—a more important consideration in the present context—if detecting the dot displacements required representing each dot and its position, one would predict a consequent item effect. But, in fact, there isn't one; it's not the case that the more dots there are, the harder it is to obtain the illusion. What happens is apparently that iconic, unsegmented impressions from each of the two eyes are superimposed somewhere in the visual system.¹⁰ Whenever two dots fail to 'line up,' one of them has been displaced. (Fodor 2004, p. 21)

There are a number of other phenomena that are instances of “the Sperling effect” that point in the same direction.¹¹ The upshot of all this is that at an early stage of perceptual processing information is carried non-conceptually and then “given” to mental mechanisms that extract information in conceptualized form.

3 Discussion

I find Fodor's argument convincing that the Sperling effect and related phenomena provide evidence for the existence of non-conceptual information bearing states in early stages of visual processing. However, Fodor's argument falls short of showing that there are iconic representations. And Fodor leaves a number of issues on the table that need to be addressed before RTM can include iconic representations.

The evidence Fodor cites supports the existence of something that bears information in an unconceptualized form but it doesn't yet support the claim that this something is iconic or even that it is a representation. As to iconicity, it hasn't been shown that every part of these pre-conceptual information bearers represent a part of the information

⁸ Fodor notes: “For example, the subject has no relevant ‘background beliefs’ about the stimuli of the kind that a ‘top down’ account of the depth effect might appeal to. This was, in fact, the main reason for Julesz’ interest in experiments with random dot stimuli” (Fodor 2004, p. 20).

⁹ As Fodor notes, it is not only the fact of displacement that is registered. “In fact, information carried by the sensory representation must also register the *magnitude* of the displacement, since how far the dots are moved affects the strength of the illusion” (Fodor 2004, p. 21).

¹⁰ That's why you can get a depth illusion from such stimuli without using a stereoscope if you learn to cross your eyes just right.

¹¹ For a discussion of Sperling's original experiment see Sperling (1960).

they bear. In fact, as previously noted, it is not even clear how to understand this claim. Fodor seems to be reasoning that since iconic representations don't individuate and since lack of individuation goes along with absence of an item effect the last of these is evidence for iconic representations. Obviously, there are gaps in this reasoning. The conclusion follows only if the two possibilities he considers—that the states carrying information about the relative positions of the dots are conceptual or that they are iconic are the only ones. But the disjunction isn't exclusive. Perhaps the relevant information bearers are non-conceptual but also fail to satisfy the PP. If a representation satisfies the PP there ought to be some testable consequences beyond failure to exhibit an item effect. We won't know where to look for these until we know more about how to understand the PP.

A second point concerns whether the information bearers whose existence is supported by the research Fodor cites are genuine representations. A Wittgensteinian philosophical commonplace, but nevertheless one that Fodor endorses, is that you can only have representation where you can have misrepresentation. It is not clear that the information bearers posited in early perception can misrepresent. It is clear that Fodor's account of predicate reference in terms of asymmetric dependency is inapplicable here since these information bearers are not predicates. Dretske's (1981) account of representation in terms of the information that a system has been designed to carry may be applicable but I doubt that Fodor will jump on that band wagon.

If non-conceptual representations are to find a place in RTM there is a further problem that needs to be solved. Fodor's account of visual processing goes something like this: In early visual (or other sensory) processing stimuli are transduced to produce non-conceptual representations. This process is purely causal. If it operates correctly, the non-conceptual representation carries information about the stimuli and under normal conditions about the environmental conditions that are correlated with the stimuli. At the next stage the non-conceptual representations cause conceptual representations in the form of perceptual beliefs. For example, the perceptual belief that one is looking at a three dimensional array. It is the second stage that is problematic for Fodor's account. The relationship between the non-conceptual visual representation and the perceptual belief is semantic. But in the CTM version of RTM, semantic connections are implemented *computationally*. Computations invariably involve syntactically structured representations which non-conceptual representations are definitely not. We need an account of how information contained in a perceptual information bearer can be conceptually extracted in the form of a perceptual belief. Presumably there can be such an account, since it is possible to extract conceptually represented information from a picture. But the issue is *how* we do it and in particular how we do it when the icon is mental.

Fodor thinks that the role non-conceptual representations play in our mental lives is limited to unconscious early stage operations in perceptual modules. Specifically, he doubts that there are non-conceptual representations that occur in conscious perception. His reason is that perceptual constancy involves inference, hence conscious experience is conceptualized. But this reason is not decisive. As we observed, Fodor already needs to allow causal relations that preserve semantic relations between non-conceptual representations and conceptual ones (like perceptual beliefs). There doesn't

seem to be any a priori reason why there couldn't be content preserving causal relations between one type of non-conceptual representation and another one.

Other philosophers have suggested a wider role for non-conceptual, and specifically, iconic representations. Phenomenologically, it appears that the visual field (and similarly for the other sensory fields) involves iconic representations. The visual field seems to represent a scene and parts of the visual field represent parts of the scene. So, at least at first sight, the PP looks like it holds for conscious perception. Further, it appears that we are “given” more information than we conceptualize. Of course, that this is how it seems doesn't entail that this is how it is. Perhaps the visual field involves conceptual representations in such a way as to give the illusion of an iconic representation. But once one has let iconic representation into the RTM it is worth exploring whether it can be put to further uses. Fodor has let the camel's nose into the tent. He may end up with more of the camel than he bargained for.

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