

R.G. Millikan, *Varieties of Meaning*, 2004, MIT Press  
Review for *Philosophical Review*

*Varieties of Meaning* arises out of Ruth Millikan's Jean Nicod lectures at the Centre National de la Recherche Scientifique in Paris in the spring of 2002. The book is much more than a report of those lectures. The lectures themselves have been significantly revised and recast for the printed page; and nearly half the book is new material that did not see the Paris spring. The combination gives Millikan scope not only to expound her theory of intentionality – teleosemantics – in some detail, but also to show how the framework can be applied to a variety of phenomena in two very different domains: natural language (part III) and mental representation (part IV). This makes the book an indispensable resource for those concerned with the puzzles of mental representation and the nature of intentionality. It is also perhaps the best place to get an overview of Millikan's ideas in a single volume. Although the questions are deep and theoretical, the presentation is illuminated by numerous examples from the empirical sciences and ordinary life. The result is eminently readable – a remarkable treasure trove of insights and ideas. Millikan's wider body of work will be a fruitful source of philosophical progress for years to come. *Varieties of Meaning* is set to become the standard way into that resource.

The book starts with an account of the natural purposes that are at the heart of teleosemantics. These are biological functions, that depend upon the existence of a history of selection. The first chapter makes vivid the point that the selectional purposes of a person's behavioural mechanisms need not be reflected in that person's explicit purposes and intentions; indeed, that purposes may conflict. Although details remain disputed, it hardly in doubt that various behavioural mechanisms have teleofunctions arising from a history of biological natural selection. More controversial is Millikan's reliance on memetic functions, to which she has recourse particularly in her discussion of natural language. It is not clear that words or sentences are under sufficiently stable selection pressures to vindicate the idea that they have teleofunctions of their own, independently of the purposes of the people who communicate with them. Indicative sentences may indeed have co-operative functions that depend upon there being community of purpose between speaker and listener on some occasions when they are used, but that is not to say that they have purposes based on their being replicators (memes) subject to selection in their own right. After more than two decades of work on the theory of teleological functions, the genesis of which lies partly with Millikan herself, it is still far from clear whether the kinds of functions found in biology can be extended to any cultural phenomena in a direct way.

At the heart of the book is Millikan's teleosemantics, her theory of intentionality, which many will know from the compressed version in 'Biosemantics' in the *Journal of Philosophy* (1989). The wealth of detail in the canonical treatment in *Language, Thought and Other Biological Categories* ("LTOBC", 1984) makes that a much harder source. *Varieties* is a useful intermediate. All the essential components of the theory are here, in a relatively accessible form, some having been refined over the years. The basic idea behind teleosemantics will be familiar. Representations arise as causal intermediaries between co-operating producer and consumer systems. The content of a particular representation is determined by the kinds of behaviour the consumer typically produces in response to that representation, in particular, by a condition for the success of those behaviours, given their purposes. The purposes in question are selectional evolutionary purposes, and the success conditions are the conditions in which the teleofunctions evolved. For example, a honeybee's nectar dance performed vertically with three waggles will send 'consumer' bees off 150 metres in the direction of the sun (say), before they search for nectar. That behaviour has been selected by evolution – the consumer bee's flying off sunwards for 150 metres is not just a causal result of the dance, but also a teleofunction of the dance. An evolutionary success condition of the flight behaviour – a condition that enters into an explanation of why that behaviour led hives to survive and reproduce – is that there really *be* nectar 150 metres away towards the sun. So the dance

is a representation and that is its content.

Of course, there are several other elements of the story: for example, to explain which of the many evolutionary success conditions of a pattern of behaviour fixes the content of the representation that causes it. But even from this sketch it should be clear that the focus is on representation consumers. It is what consumers do that fixes content. The focus on representation consumers is a distinctive feature of the theory, and an asset. But as a result LTOBC devoted little attention to the circumstances in which representations are produced and the kind of information on which consumer systems would be able to rely. An appendix to Millikan's earlier *On Clear and Confused Ideas* (2000) suggested that she had in mind her own distinctive account of correlational information. A major achievement of the present volume is to work out that theory in detail. Dretske (1981) introduced information theory into philosophy of mind. He required a perfect correlation between sign and signified (under some appropriate background conditions, which he called channel conditions). Millikan argues that this kind of information is typically unavailable in the natural world. The correlations that organisms rely on usually subsist only for limited times and in limited geographical areas, and need be far from perfect correlations. The costs of not avoiding a predator are so high that it will pay to act on signs that raise the probability of there being one around here now (Godfrey-Smith 1991), even if tokens of the same physical type have nothing to do with predators when they occur at other times and places. Correlations clearly need to be counted relative to limited spatio-temporal domains, but that immediately raises a problem: which domain is to count in assessing the strength of a correlation? That sort of problem arises for any statistical relationship: what is the reference class? One answer would be to ask the consumer – to see which tokens it is inclined to act upon. That would involve some tricky counterfactuals, and Millikan has an ingenious alternative. The correlations that will be of interest in giving causal explanations will be those that exist for some reason. Purely accidental correlations won't feature in a nomological explanation. So consider the reason which underlies some correlation between sign and signified (e.g. between a particular facial appearance and the presence of your mother). That reason explains why the correlation extends from some samples to others (the relative immutability of people's facial characteristics over time explains why the facial appearance that correlates with the presence of mother now continues so to correlate in a year's time). Millikan defines the domain of a natural sign as that in which the reason for the correlation subsists. Provided an organism has some way to track this domain, even roughly (for example, by happening to live mainly within it), the information carried by the sign is potentially useful. Millikan calls these kinds of correlations 'local natural information', and for her they are a major theoretical resource. Local natural information is what organisms need to make use of if the kind of representation characterised by teleosemantics is ever to evolve. Notice that it also allows for correlations concerning individuals, which Dretske's purely nomological variety cannot.

Millikan's account of local natural information is just one of nineteen action-packed chapters. In part II she also offers a teleosemantic explanation of intensionality, and argues for a rather unorthodox characterisation of representational productivity and embedding. Part III, on natural language, sets out various ways of carving a semantics-pragmatics distinction. One joint lies between specifying conditions in which a consumer's teleofunction will be exercised in an evolutionarily-normal way, on the one hand, and expressing those truth conditions in a way that captures the way the representation is structured (its 'mapping functions'), on the other. Faithful translation aims at preserving the latter. A second way of distinguishing semantics from pragmatics relies upon the memetic purposes mentioned above, the semantic content corresponding to the memetic purposes of a natural language sentence and the speaker's purposes in uttering that sentence giving its pragmatics. Part III also contains Millikan's provocative claim that we can directly perceive states of affairs through hearing utterances (e.g., "It's raining"). Part IV offers a step-by-step treatment of various levels of representational complexity that are intermediate stages between the simplicity of the honeybee waggle dance and the

complexity of human thought. This territory has been under-explored, because of a tendency to think of all types of intentionality as of a piece. Millikan does a good job of charting some of it, offering suggestions to account for the way indicative and imperative representations differentiate out of pushmi-pullyus, for detaching representations of objects, for representing space and of time, and for generating new goal states.

“Varities of meaning” lays claim to an august heritage, justifiably so, and aptly describes the book’s remarkable ambition – to draw together a wide variety of representational phenomena within a common theoretical framework. Doing so in a single volume inevitably leaves many questions, for answers to which readers will have to turn to the rest of Millikan’s published work. This book supplies ample motivation.

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