

Richard Dietz and Sebastiano Moruzzi, eds.
Cuts and Clouds: Vagueness, its Nature and its Logic.
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Over the past few decades there has been growing interest in the epistemology, logic, and semantics of vague expressions. The underlying reason for this research interest lies in the fact that natural language expressions such as ‘bald’, ‘heap’ or ‘tall’ exhibit a number of puzzling features. Probably the most striking feature of these expressions is that they do not draw sharp boundaries across their range of signification. If F is a vague predicate, for example, then there are objects to which F is unambiguously applicable, and there are objects to which $not-F$ is unambiguously applicable, but in borderline cases of application it seems indeterminate or unsettled whether a particular object belongs to the extension or the anti-extension of F . The existence of borderline cases poses deep problems for any attempt to give a coherent and comprehensive description about the behavior of vague predicates. Sorites-susceptibility may be seen as a further puzzling feature of predicate vagueness. Consider the following line of thought. A man with zero hairs on his head is bald. For all numbers n , if a man with n hairs on his head is bald, then a man with $n+1$ hairs on his scalp is bald. Thus, a man with a million hairs on his head is bald. This form of sorites reasoning creates paradoxical arguments, for the premisses are all well-motivated, the argument is apparently valid, but the conclusion is utterly nonsensical. It is often said that in order to solve the sorites paradox, some parts of classical predicate logic must be given up. There is no consensus, however, as to which part should be eliminated from the predicate calculus.

The nature of the relationship between the puzzling features of vague expressions is one of the recurrent themes in *Cuts and Clouds*. Nearly all of the thirty-one articles in the book reflect on that issue, but the conceptual frameworks and the proposed solutions to the central problem differ dramatically.

The contributions are divided into two main perspectives. In the first part of the book, which contains eighteen articles, the emphasis is on the source and nature of vagueness. Most authors agree that the primary symptoms of vagueness are semantic in character. Indeed, it would not be difficult to demonstrate why vague phenomena, if they exist, must inevitably appear at the level of the meaning of predicates and sentences that refer to or represent these phenomena. But the agreement ends when the discussion moves away from the analysis of symptoms to the analysis of the sources of vagueness.

One natural view is that the source of vagueness is to be found in the fundamental mechanisms of linguistic representation. Scott Soames argues that vagueness arises from semantic indeterminacy. According to this view, predicates like ‘bald’, ‘heap’ or ‘tall’ are

neither applicable nor inapplicable in borderline cases. In such cases, it is indeterminate which rule should be followed. This sort of indeterminacy is supposed to come from the fact that the meaning of vague predicates is only partially defined. Brian Weatherson seems to be inclined to accept the indeterminacy view, but he does not take a stand on whether the indeterminacy in question is semantic or epistemic.

Opponents of the indeterminacy view reject the possibility of vague representation. They claim that the indeterminacy resides in the world itself, not in the linguistic means of representation. This approach is best elaborated in Nathan Salmon's article. Salmon contends that predicate meanings are fixed semantically so that they express determinate properties. The predicate *F* expresses the property of being *F*, but in borderline cases there is no object that has the property of *F*-ness. Take the predicate 'heap'. On Salmon's view, some collections of grains of sand are such that there is no fact that they have the property of being a heap. At the same time, there is no fact that they have the property of not being a heap. That is, they neither definitely have the property of being a heap nor definitely lack the property of being a heap. The same seems to hold for all vague predicates. For this reason, Salmon concludes that vagueness must be located in the realm of reality, namely, in objects and their properties.

Stephen Schiffer is also of the opinion that the most plausible way to meet the theoretical challenges posed by borderline cases is to posit vague objects and properties. In contrast to Salmon's pure realistic conception, however, Schiffer offers a mixed theory of vagueness. On the one hand, he acknowledges the real existence of vague properties. But, on the other hand, he stresses that these properties can be individuated only by making reference to the use-practices of the predicates that express them. The main insight here is that the way we use vague predicates does not determine truth conditions. So, if someone says that 'Harry is bald', and Harry's is a borderline case of baldness, then the sentence or the expressed proposition will be neither true nor false. But it would be wrong to infer from this that sentences containing vague predicates have no truth values. On Schiffer's view, the right thing to say is, rather, that such sentences have no truth-status at all. The position elaborated by Sven Rosenkranz is roughly similar to that of Schiffer's mixed theory. One interesting difference is that Rosenkranz's final conclusion points in the direction of agnosticism. He maintains that it is impossible to say something truth-evaluable about borderline cases, because we lack both the methods and the background knowledge to perform this task. Given that we are not in a position to come to know the truth-status of vague sentences, agnosticism seems to be the only consistent view concerning the problem of vagueness, at least according to Rosenkranz's account.

The second part of the book is devoted to the logic of vagueness. This part contains thirteen articles. One common characteristic of the articles collected here is that they all adopt some version or other of non-classical logic. Dominic Hyde, for example, offers a paraconsistent response to the sorites paradox. Currently, the dominant view among logicians is that the solution to the sorites paradox requires a paracomplete

framework. In this context, the main advantage of paracomplete logics is that they associate borderline statements with truth value gaps. If the universally quantified premise in the sorites argument is evaluated as gappy, then the paradox is blocked. Hyde points out, however, that paraconsistent approaches may have similar advantages. In particular, friends of paraconsistent logic may contend that borderline statements are both true and false. If so, then the universally quantified premise is true and the sorites argument is valid. But though the premise is true, it is also false, and one cannot draw a true conclusion from a false premise. The sorites argument thus becomes invalid.

In his short contribution, Graham Priest investigates a further aspect of the sorites paradox. Relying on his own version of paraconsistent logic LP, Priest develops a new account of the identity relation. One can think of the sorites problem as involving a series of objects where the adjacent members of the series are identical in all relevant respects, the polar members nevertheless differ significantly. For the orthodox view of identity, which has its historical roots in Leibniz's Law, the sorites series qualifies as an insoluble mystery. On the orthodox view, the identity relation is reflexive, symmetric and transitive, and these properties clearly exclude the possibility that the polar members of the series are not identical. Priest claims that the identity relation behaves classically in all logically consistent situations, but where the members of the series have vague properties, identity fails to be transitive. Imagine a short sorites series with three members a , b , and c . Then, because of the presence of vagueness, we have $a = b$ and $b = c$, but not $a = c$. With the concept of non-transitive identity at hand, one can readily explain why the polar members may differ in spite of the fact that the adjacent members are identical. At first sight, Priest's solution may seem to many counterintuitive or contradictory, but one should take into consideration that in a paraconsistent setting certain kinds of contradiction may be regarded as rationally acceptable.

In a short review like this, it is obviously impossible to appreciate properly all contributions of the book. It deserves mention, however, that all contributions are written by leading experts in their fields. There is no reason to doubt that the results and theoretical insights that can be derived from the individual chapters will have a long-lasting influence on this area of academic research. Beyond that, the book is well edited and represents almost all contemporary tendencies in logical and epistemological thinking. I strongly recommend it to anyone interested in the complex issues associated with vagueness.

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