

Multidimensional Vagueness – A Supervaluational Approach

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Vagueness is one of the central problems studied in the philosophy of language. Multidimensional vagueness, vagueness which manifests itself in multiple dimensions of the meaning of a predicate, has mostly been ignored in the mainstream literature on vagueness. (Cf. the lack of discussion of the phenomenon in standard works such as Keefe and Smith (1997), Keefe (2000), Williamson (1994), Dietz and Moruzzi (2010)) My two aims in this presentation are to criticise the only theory explicitly designed to address multidimensional vagueness, namely Grinsell (2012)'s, and to propose a more conservative theory of multidimensional vagueness based on supervaluationism.

An example of a multidimensionally vague predicate is 'is healthy'. According to standard theories, the vagueness of a predicate can be fully explained based on a single factor relevant to its correct application, such as e.g. the number of grains in case of 'is a heap'. However, whether we can correctly apply 'is healthy' to a particular living organism is not a matter of one, but of

several different factors and even more importantly, of how the corresponding dimensions of the predicate's meaning interact when it is correctly applied. In case of 'is healthy' the relevant factors including heart rate, body weight, and blood pressure. Standard theories of vagueness are designed to only take one such factor into account, which means that they completely ignore crucial questions about multidimensionally vague predicates, such as, to name just three examples: Are there cases where one dimension of a predicates vagueness completely overrules all others? Are there cases in which some factors are assigned a larger weight than others? If so, is this weighting absolute or is it relative to a particular context?

Multidimensionally vague predicates share both characteristics of 'regular', one-dimensionally vague predicates. They (evidently) have borderline case and they are susceptible to the sorites paradox: For example, if the other vagueness-dimensions of 'is healthy' are kept fixed, intuitively, a person cannot become unhealthy by gaining just one gramme of body weight, which means that we can construct instances of the sorites paradox for the predicate. It can furthermore be argued that many of the standard examples of regular, one-dimensionally vague predicates are really multidimensionally vague: Whether an agglomeration of grains can correctly be called a heap is for example not only a matter of how many grains it contains, but also e.g. of their spatial distribution. If they are spread out over a football field, they do not form a heap. These considerations suggest that an adequate theory of vagueness should be able to explain both 'regular' and multidimensional vagueness.

The first main aim of the presentation is to criticise the only explicit proposal for a theory of combinatory vagueness, Grinsell (2012)'s. According to

Grinsell, the interaction between different meaning-dimensions of multidimensionally vague predicates is formally analogous to the process of preference aggregation, by which individual preferences are aggregated into a collective preference. (See e.g. List (2013).) A crucial consequence of Grinsell's theory is that the process which aggregates the vagueness-dimensions of a multidimensionally vague predicate is subject to the same impossibility-theorems which hold for preference aggregation. (See in particular Arrow (1951), Chichilnisky (1982)) Grinsell specifically relies on Chichilnisky's theorem, which says that a continuous aggregation rule cannot simultaneously satisfy anonymity and unanimity, (Chichilnisky (1982), p. 340) arguing that the aggregation rules for vagueness-dimensions are discontinuous, which means that they allow that small changes regarding one dimension may lead to big changes regarding the correct application of the the corresponding multidimensional predicates. This could for example mean that a small change regarding the cholesterol level of a person might lead to a big change regarding the person's overall health. With this assumption in place, Grinsell draws on Stalnaker (1978)'s theory of assertion in order to give a pragmatic explanation of multidimensional vagueness. Roughly, the explanation is that multidimensional vagueness is a result of competent speakers refusing to draw certain fine distinctions regarding single vagueness dimensions for fear of ruling propositions involving the corresponding multi-dimensional predicate out of the common ground, the stock of commonly accepted presuppositions shared by speakers in successful instances of communication.

In my presentation I will argue that Grinsell's theory suffers from three problems, which I will now briefly state.

First, his explanation over-intellectualizes multidimensional vagueness, since it requires competent speakers to be aware of the discontinuity phenomenon which characterise multidimensionally vague predicates according to his theory.

Second, even though an adequate theory of vagueness should be able to account for both kinds of vagueness, it is at best unclear whether Grinsell's theory can be generalized to also account for regular, uni-dimensional vagueness, and the theory furthermore does not seem to be compatible with any of the standard theories of (uni-dimensional) vagueness.

Third, Chichilnisky's Anonymity-assumption, which Grinsell accepts, is problematic, since there plausibly are multidimensionally vague predicates some of whose vagueness-dimensions differ in importance regarding their overall vagueness, and more generally, meaning. In case of 'is healthy' for example, the heart rate of a person clearly is a more important factor regarding the overall healthiness of a person than their body weight.

My second main aim is to propose an alternative theory which integrates some of Grinsell's insights, but does not suffer from the same problems. The proposal which I will present is based on the supervaluationis theory of vagueness, one of the standard theories of one-dimensional vagueness. (See e.g. Fine (1975), Keefe (2000), ch. 7-8.) It draws on Fine (1975)'s idea that the meaning of vague predicates is governed by penumbral connections, general constraints on how sentences involving vague predicates are related, which extend even to sentences expressing borderline cases. My proposal is based on the idea that penumbral connections capture meaning-constitutive rules about the relation between multidimensional predicates and predicates which represent their different vagueness-dimensions.

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