BOOK REVIEW: SALLES, S. *Vagueness as Arbitrariness*, (Springer, 2021, 206 Pages).

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Abstract: The present paper is a review of Salles' book *Vagueness as Arbitrariness*. In the first part I present a summary of each chapter. Chapters 1 to 3 are presented only cursorily. Basically, they offer some preliminary remarks about the problem of vagueness and defend several criteria for evaluating the adequacy of the solutions. Chapters 4 and 5 are discussed in more detail. Chapter 4, because it presents the author's criticism of the most important theories of vagueness, and Chapter 5, because it presents his own original theory. In the second part, I discuss some plausible shortcomings of the proposed theory.

The Sorites Paradox

Few philosophical problems are so easy to understand, yet so hard to deal with as the problem of vagueness. This becomes manifest when we consider the fact that the proposed explanations and solutions differ radically and are based on quite divergent intuitions. Although the problem has been known since Eubulides' day (fourth cent. B.C), in recent decades the development of contemporary logic and growing attention to language have created fertile ground for renewed interest in the topic. So many theories have been developed that it is a challenge to say anything new about the topic. Salles' book *Vagueness as Arbitrariness* (Springer 2020) accepts this challenge and succeeds in making a valuable contribution to the long history of addressing this puzzling phenomenon. The book discusses traditional solutions and, in my view, offers a powerful and original approach which certainly deserves serious consideration.

In the **first** chapter, Salles introduces the problem of vagueness in its generality. It is certainly a good introduction to the topic for both newcomers and veterans. The Sorites paradox is presented with some standard examples like the following. Suppose someone called 'John' has 0 hairs on his head at a given moment, and his hairs grow one strand at a time. At time t_0 he has 0 hairs on his head, at t_1 1 hair, at t_2 2 hairs, …, at $t_{10,000}$ 10,000 hairs. At what moment must we stop calling John *bald*? Apparently, there is no satisfactory answer, for *bald* is a vague predicate. On the one hand, we have a strong intuition that the simple addition of a single strand of hair is not sufficient to turn a bald person into a not bald one. But then, if we continue repeating this sequence, rejecting each additional hair as not changing the person's baldness, we will be forced to call someone with 10,000 hairs still bald, which is clearly odd.

On the other hand, we also have the intuition that the simple subtraction of a single strand of hair is not sufficient to turn a not bald person, say someone with 10,000 hairs, into a bald one. But then by this step-wise subtraction logic, we will be forced to call someone with 0 hairs on his head *not bald*, which also seems unacceptable. So, in the end, we are forced to admit that there must be a cut-off point between bald and not bald persons: someone with n hairs is bald and someone with $n+1$ is not bald, which also seems absurd. This is a paradox—the so called *Sorites Paradox*.

Salles points out correctly that this should bother us for several reasons. Firstly, because the phenomenon of vagueness is quite ubiquitous in natural language. Just think of adjectives like *thin*, *fat*, *tall*, *short*, *big*, *small*, *mature*, *child*, *adult*, *rich*, *poor*, *strong*, *weak*, verbs like *run*, *shout*, *love*, indexicals like *here*, *now*, nouns like *poverty*, *wealth*, and so on. Secondly, not only ordinary, but also many philosophically relevant predicates seem to be vague: *just*, *good*, *legitimate*, *beauty*, and, according to some, even *exists* and *is identical to* are vague. In fact, as a consequence of trying to solve the Sorites, some even claim that *being true* is vague. Finally, as shown above, the use of these predicates leads us to logical incoherence, and this is not something philosophers in general are happy to live with.

Salles starts laying down the basis for his own solution in the **second** chapter. He proposes three adequacy criteria for an adequate solution and six widespread intuitions about the nature of vagueness which should be explained. He also presents what he considers the most perspicuous formulation of the problem. This is important because the whole book's success depends fundamentally on what problem the author wants to solve. According to the author, most theories fail in dealing with it. His three adequacy criteria are: (i) criterion of Sorites: explains vague predicates in a way that solves the Sorites paradox; (ii)

criterion of coherence: explains vague predicates without implying that they are incoherent predicates; (iii) criterion of precisification: explains vague predicates without implying that there could be a predicate that is both vague and precise at the same time.

Among these criteria, the most important is the criterion of precisification. To require that vague predicates be explained without implying that they can be vague and precise at the same time seems like a principle of logical coherence. It is based on the claim that a predicate is vague if and only if it is not precise, i.e. when there is no sharp boundary between positive and negative cases of application. And, arguably, no predicate can be both precise and imprecise at the same time.

An adequate theory of vagueness should not only satisfy these three criteria, but also be able to systematize six natural intuitions, viz. (i) vague predicates lack sharp boundaries, (ii) there is no fact of the matter about where the boundaries of vague predicates are, (iii) vague predicates are tolerant of very slight changes, (iv) vague predicates admit of borderline cases, (v) there are many legitimate cut-off points in the Soritical series, (vi) we don't know the boundaries (whether or not they exist). To systematize these intuitions does not mean to arrange them into a coherent whole. Maybe they are not consistent or compatible. To systematize them simply means to explain them in a way that makes clear which should be accepted, which should be rejected and for which reasons, and how the remaining intuitions are related to each other.

In **chapter 3** Salles discusses the notion of imprecision, in particular the distinction between the linguistic and the epistemic senses of imprecision. Virtually everyone agrees that a predicate is only vague if it is imprecise. The author presents a linguistic sense of imprecision and argues that there is no reason to reject this sense of imprecision (even

if there is an additional epistemic sense). According to the author, the definition of imprecision based on the existence of a penumbra between positive and negative cases is unsatisfactory. Also, the characterization of imprecision according to which vague predicates are radically higher-order imprecise should be rejected. The overall diagnosis is that any account of imprecision is inadequate which entails that there could be vague predicates with a sharp boundary between objects to which its application yields some particular truth-value (true, false, super-true, etc.) and objects to which its application does not yield that value. Therefore, he defines a predicate as 'imprecise if and only if there is no sharp boundary between cases to which its application yields some particular truth-value and ones to which it doesn't' (p. 48). This point is central for justifying the introduction of the notion of ideal cases, which is at the center of his proposal.

Proposed Solutions

The **fourth** chapter aims to evaluate the six principal theories proposed in recent literature for solving the problem of vagueness. The six theories—or 'families of theories'—are: Three-Valued Theory, Degrees-of-Truth Theory, Super-valuationism, Epistemicism, Incoherentism and Contextualism. Three-Valued Theory explains vague predicates in terms of a third truth-value beyond the true and the false. Apparently, the application of a vague predicate to a borderline case yields a proposition which is neither true nor false—it is *indefinite*. The basic idea here is that vague predicates entail cases of penumbra. But this gives rise to the problem: where in the Sorites series is the last true case and the first indefinite case? And where is the cut-off point between the last indefinite and first false case?

In the end, the theory assumes that vague predicates allow two sharp boundaries, and in this way it violates the criterion of precisification. Richards (2009) avoids this consequence, but still his proposal violates the criterion of precisification, since for him the application of a vague predicate F to one object of the soritical sequence yields some particular truth-value, and the application of F to the other object does not yield that value. In any case, wherever the defender of this theory puts the cut-off point between positive and borderline cases, and between borderline and negative cases, the divisions of the predicate are arbitrary.

While Three-Valued Theory fails to accommodate the intuition that not all borderline cases have the same status, this is adequately done by the Degrees-of-Truth Theory. According to it, there are infinitely many truth-values. Some instances may be true at degree 1, some at degree 0, and all borderline instances are true at an intermediate degree. Although this theory provides a better systematization of intuitions (i) to (vi) than does Three-Valued Theory, it still has some serious drawbacks. One of them is that it is not clear where the cut-off point is between instances which are true at degree 1 and instances which are true at a degree less than 1. And this is also true for any other value between 0 and 1. And so, ironically, in the end, the theory implies that a vague predicate is not a predicate without sharp boundaries, but a predicate with thousands of sharp boundaries.

According to Super-valuationism, a vague predicate is incomplete, i.e. it is a predicate whose extension has not been fully determined, so that it admits of many precisifications. There are three outcomes for the application of a vague predicate to an instance: it may be super-true (the sentence is true in every admissible precisification of the language), super-false (the sentence is false in every admissible precisification of the language) or

indefinite (the sentence is true in at least one admissible precisification and false in at least one admissible precisification of the language). The solution to the Sorites paradox is quite direct: the principle of tolerance is super-false (it is false in all precisifications). The difficulties of Super-valuationism are similar to those of Degree-of-Truth Theory. Firstly, it violates the criterion of precisification: according to this theory, it is super-true that there is a sharp boundary between positive and negative instances of a predicate. Secondly, it does not explain the intuition concerning the non-existence (or unknowability or arbitrariness) of the boundary of vague predicates: where is the cut-off point between the positive (and the negative) extension and the penumbra.

A quite different solution is proposed by Epistemicism. According to this theory, vagueness is not a semantic phenomenon, but an epistemological one, i.e. it is primarily a phenomenon that has to do with knowledge and ignorance. It does not follow from the fact that we are unable to recognize cut-off points in the Sorites sequence that there is no such cut-off point. For Epistemicism, the solution to the paradox is quite direct: the principle of tolerance is false. There is an n, such that someone with n hairs is bald, and someone with $n+1$ is not bald. Epistemicism has the advantage of satisfactorily solving intuitions (i) to (vi), and this without requiring a revision of logic and classical semantics. One high cost of Epistemicism, however, is that it violates the criterion of precisification.

Incoherentism is a quite radical solution. Contrary to all the solutions discussed so far, it assumes that vague predicates are incoherent, i.e. we can indeed show that some people are truly bald or not bald. To 'show' this does not entail that this is really the case—for Unger (1979), this is a reduction: there are no bald persons at all. Salles also

discusses Subvaluationism, which is a moderate version of Incoherentism. In any case, it remains unclear what Salles' reasons are for not accepting Incoherentism, beyond the fact that some may consider it counter-intuitive (p. 120).

Contextualism, finally, claims that vague predicates are context-sensitive. No other theory rejects this, but the novelty of Contextualism is that it makes this claim the core insight for explaining the behavior of vague predicates. Vagueness is simply regarded as a form of context-sensitivity. The main problem with this solution, according to the author, is that it violates the criterion of precisification, because for this theory there could be a predicate *F* such that it is both vague and precise, either independently of the context or in a particular context.

To sum up: the overall diagnosis is that all theories fail, for they do not satisfy the adequacy criteria outlined in chapter 3. Worse, some of them, including Three-Valued Theory and Super-valuationism, even fail to systematize the most relevant intuitions of the phenomenon.

Salles presents his own proposal in **chapter 5**. The starting point of his theory is the so-called Thesis of Arbitrariness, which says that all admissible precisifications of a vague predicate are equally arbitrary. The final goal is to establish the Theory of Vagueness as Arbitrariness, according to which 'to be a vague predicate is to be an arbitrary predicate that must be precisified in order to contribute to a sentence that has truth-conditions.'

For the author, vague predicates are certainly rule guided. Now, not all rules are equally justified. For instance, suppose you apply *bald* to a person with *n* hairs and *not bald* to a person with *n*-1 hairs. To do this would be incoherent. So, this is a principle of coherence: do not apply *bald* to a person with *n* hairs and *not bald* to a person with *n*-1 hairs. Now, although most people seem to accept the principle of tolerance, according to which if you apply *bald* to a person

with *n* hairs, you also 'should' (or 'are justified to') apply it to a person with *n+1* hairs, this is much less obvious than the first principle. Salles argues against the claim that the principle of tolerance is a guiding rule for the use of vague predicates, for it has as a consequence the unrestricted use of the predicate—and this must be rejected, for ordinary speakers do not use the *bald* predicate unrestrictedly. With other words, once we accept the principle of tolerance, it turns out that *bald* (or *not bald*) applies to all cases. No matter how much hair you have, you will be bald (or *not bald*). So, lack or presence of hair on the head is no longer a standard relevant for the application of the predicate *bald*, and this is clearly an absurd consequence. The rejection of the principle of tolerance is the first step for the proposed solution.

The second step consists in the substitution of the notion of *clear* case of the application of vague predicates by the notion of *ideal* case. *Clear* is a vague predicate. If a person with 0 hairs is a clear case, this must also be the case of someone with 1 hair, someone with 2 hairs, and so on. But to say that someone with 0 hairs is an *ideal* case does not commit anyone to a similar line of reasoning. For someone with 1 strand of hair is no longer an ideal case. The reason is quite simple: it is always incorrect to call someone with 0 hairs *not bald*, for plausibly no one can possibly have less than 0 hairs. Therefore, to call someone with 0 hairs not bald is a violation of a minimal constraint.

Salles argues then for the claim that ideal positive cases of a vague predicate correspond to those to which it is exclusively correct to apply the predicate, while ideal negative cases correspond to those to which it is exclusively incorrect to apply it. All the rest is, so to speak, up to you.

This justifies the move to the Thesis of Arbitrariness, i.e. the principle that all admissible precisifications (i.e. precisifications which follow some minimal constraints) of

a vague predicate are equally arbitrary. It may be important to note that something similar has been defended by Sainsbury (2013) and Raffman (2014). Now, what shall we do if all precisifications are equally arbitrary? Salles' answer is as straightforward as it can be: if you are not interested in attributing a truth-value to the sentence, let it be, but if you want to establish a truth-value, make a choice about the cut-off point. This way, he establishes the Theory of Vagueness as Arbitrariness, according to which 'to be a vague predicate is to be an arbitrary predicate that must be precisified in order to contribute to a sentence that has truth-conditions.' In other words, without being precisified, a sentence with a vague predicate does not express a proposition, it is neither true nor false. In the rest of the book, Salles discusses some possible objections and negative consequences of his theory, some of which I discuss below.

Some Critical Remarks

Without a doubt, Salles' book makes a significant contribution to the debate on vagueness. It accomplishes two important tasks at the same time: it provides a critical overview of the whole literature on vagueness and proposes an original account of how to solve the Sorites. One admirable virtue of the book from a more methodological point of view is the absence of technicalities that do not detract from the depth of the analysis. Another important contribution consists in his argument for changing the focus from the widely accepted principle that 'if something having n-hairs is bald, then something having $n+1$-hairs is also bald' to the undeniable principle that 'if something having n-hairs is bald, then something having n-1-hairs is

also bald'. More than a peripheral difference, this change of perspective leads to a radically different result.

Nevertheless, as can be expected, the book may not satisfy every reader in every regard. One first critical issue concerns the book's purpose. Salles states at the very beginning that his aim is to solve the problem of vagueness. This suggests that he will address the logical paradoxes which emerge from the use of vague predicates, certainly an ambitious project. But, in the end, what he offers with his Theory of Vagueness as Arbitrariness seems less than he promised: he offers a definition, or sufficient criteria for recognizing a vague predicate (a predicate that must be precisified in order to obtain a truth-value). However, by itself, this does not solve the problem of vagueness. That the Sorites paradox dissolves as soon as we arbitrarily choose a cut-off point in the Sorites sequence hardly seems earth-shaking.

There are also some minor issues a critical reader may object to in the book. Here are just two examples. First, and this is indeed an almost negligible problem, the author defines a vague sentence, without any further qualifications, as 'a sentence which contains at least one vague predicate' (p. 129). But there are counter-examples to this unqualified definition. For instance, the sentence 'the predicate *bald* has four letters' contains a vague predicate but is not vague. Thus, the definition should exclude such cases in which the predicate is not used but merely mentioned.

Secondly, according to Salles (p. 24), there are many properties with an equal right to be the property of *being bald*, and any choice of a particular one will be arbitrary. For, there is the property of *having at most 0 hairs on the head*, the property *having at most 1 hair on the head,* the property *having at most 2 hairs on the head*, and so on. This is problematic for at least three reasons. First, *being bald* is a determinable property, while *having at most n hairs on the head*

is a determinate property. Thus, none of the latter can be simply identified with the first.

Second, according to the author's own proposal, someone *having at most 0 hairs on the head* is an ideal case, while someone *having at most 1 hair on the head* is not. So, there is a clear sense in which *having at most 0 hairs on the head* and *having 1 hair on the head* do not have an equal right to be the property of *being bald*. The first one has more right, for it is an ideal case, and it would be incoherent to consider someone with 0 hairs on the head to be bald and, at the same time, someone with 1 hair on the head to be not bald, but not vice-versa.

Third, I think most metaphysicians would disagree with this radically abundant theory of properties, according to which there are so many *being bald* properties. Most metaphysicians agree that only properties that cut at the joints are real. In fact, I am convinced that this is an important insight that most semantic theories of vagueness overlook, viz. that metaphysics could do a service to philosophy of language at this point. Most realist theories of properties only accept fundamental properties in the inventory of reality, which includes *being an electron*, *being negatively charged*, *having mass 9.1093×10^{-31} Kg*. And I dare to claim here that there is an important correlation: predicates that express fundamental properties are never vague, and vague predicates never express genuine properties (*bald* certainly does not cut reality at the joints). A sparse theory of properties may help in solving the problem of predicative vagueness in a less arbitrary way.

Concerning the core proposal of the book, some serious doubts may bother the reader, among which three seem to be more serious. Here the first point. Although I agree that the substitution of the notion of clear cases by the notion of ideal cases is an important improvement, I don't think the reason he presents for this substitution is really relevant.

According to him, ideal cases are better than clear cases, because they are much less inclusive (p. 144). As a matter of fact, the very core insight behind this substitution (originally proposed in Imaguire 2008) lies rather in the fact that *clear* is a vague predicate, while *ideal* is not vague, and it is hard to see how a proposal based on a vague notion can solve the problem of vagueness. Ideal cases rather than clear cases allow us to establish a firm ground on which to stand.

The second point concerns the use Salles makes of ideal cases. He argues against some solutions to the Sorites, because they reject the existence of boundaries between positive and negative instances of correct application of the predicate and, at the same time, introduce new suspect boundaries. Three Valued Theory, for instance, rejects the existence of a boundary between cases of F and cases of non-F, but accepts the existence of two new boundaries: between F and penumbra and between penumbra and non-F. But where is the cut-off point between the F and the penumbra, and where is the cut-off point between the penumbra and non-F? Of course, these new boundaries are as arbitrary as the original cut-off point between F and non-F. Thus, there is no real improvement. Something similar can be said of Super-valuationism: where is the cut-off point between super-true (or super-false) and other instances? Salles' appeal to ideal cases is indeed an important move: 0-hairs is an ideal case of baldness because if you reject this you should conclude that baldness has nothing to do with capillarity. So, the new division between ideal and non-ideal cases is certainly better founded than the usual divisions of the alternative theories. But, and this is my point, on the one hand, I cannot see that this new division is in any way relevant for motivating his proposal of precisification—that vague predicates have to be precisified in order to be true or false. Even if there were

only clear cases of F (and no ideal cases of F), we could still say that a vague predicate is an arbitrary predicate that must be precisified in order to contribute to a sentence that has truth-conditions. The notion of ideal cases does not seem to play any role. In fact, his proposal should also ground a solution for predicates without ideal cases (in which the soritical series is open, as is the case with *rich*, for instance). On the other hand, the appeal to ideal cases seems equally well suited for supporting other theories like Three Valued Theory or Super-valuationism. Where are the non-arbitrary cut-off points between F, penumbra and non-F? Clearly, between the ideal positive, the non-ideal and the ideal negative cases. And where is the non-arbitrary cut-off point between the super-true and the true? Between the ideal and the non-ideal cases. Ideal cases do fix points in Sorites sequences that may support some other solutions to the Sorites. Salles argues against this strategy by claiming that this way the criterion of precisification will be violated, i.e. the predicate would be both vague and precise (p. 160). However, it is not clear that this is really true. It seems that we have in fact two different predicates: the usual *bald* predicate (which is vague) and the non-ideal (neither positive nor negative) *bald* predicate (which is precise). So, no predicate is really precise and vague at the same time. And the precise character of the latter predicate is due to Salles' own move of introducing ideal cases.

The third point concerns the appeal to our natural linguistic intuitions about vagueness. Salles presents as one of the most important advantages of his proposal that it fits very well with our natural intuitions about vagueness. In fact, I agree with him that he has managed to harmonize some central intuitions. But it is far from clear that anyone agrees on the relevant intuitions, and that his proposal is really able to accommodate all intuitions. For instance, from the start he assumes that any theory which entails that

vague predicates are incoherent is counter-intuitive or even absurd (p. 20). I confess that I do not have this intuition. In fact, I think vague predicates are deeply incoherent, and I suppose most defenders of Incoherentism will agree with me. This is not to say that the incoherence is obvious at first glance, but simply that even an ordinary 'man in the street' without any technical knowledge of logic can easily understand the Sorites Paradox and recognize that there is something fundamentally wrong with vague predicates.

Further, as the author himself recognizes, one drawback of his theory is that together with some very plausible suppositions it entails Semantic Nihilism (i.e. the thesis that vagueness must be eliminated before semantic notions like truth and entailment may be applied. See Braun and Sider 2007). Since in most pragmatic contexts the imprecision of predicates is not eliminated, this implies that most of our statements are strictly neither true nor false. Worse, most of our natural reasoning about such statements is simply foolish. This seems hardly compatible with our natural intuitions about language. Just consider what is less intuitive: that an ordinary sentence like 'John is bald', stated about a man with 10 strands of hair, is 'more or less' or 'to some degree' true or that this sentence has to be precisified in order to have a determined truth-value. Or, more radically, suppose that John has only one single strand of hair. John is not an ideal case of baldness, according to the proposal. Would most competent speakers say that the sentence is true, or that it lacks truth-value? I suppose most speakers with natural intuitions will prefer the first option (perhaps with a proviso like 'well, it is *virtually* perfectly true'—but only if pressed on this point). This reaction suggests that Salles' proposal is not that close to natural intuitions as he claims it to be. Of course, admittedly, *close* is also a vague predicate.

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