Quasi-nihilism: an Epistemic Response to the Sorites Paradox

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Introduction

Could the deposit of one dollar into my bank account ever make me rich? Is there a millisecond at which a pear becomes ripe? Can the removal of a single hair make a non-bald man bald? These simple and puzzling questions may seem relegable to the bin of the superficial, and easily ignored. We may think that, perhaps because we have never precisely delineated what it is to be "rich" or "ripe" or "bald", we should attend to more important puzzles.

Though we may balk at these opening questions, what these questions can be used to exhibit demands our attention. They reveal that our language has terms—in fact, very many terms—whose application becomes unclear along some specified dimension with incremental change. Attending to this unclarity pushes us to say something about our ability to effectively use these terms, our ability to present sound arguments with these terms, and the relevance of logic to reasoning done with these terms. In short, it pushes us to respond to the sorites paradox and the problems it poses for adhering to classical logic.

In this dissertation, I argue that the sorites paradox does not give us reason to abandon classical logic together with its standard bivalent semantics and meta-theory. To do this, I advocate for a response to the paradox that adheres to this standard two-valued classical logic; and I do so without accepting any of the prevailing responses to the paradox.

A subject-matter that has been discussed since the time of Aristotle has generated an enormous lot of responses. So I don't argue that my approach is absolutely untrodden. In fact my approach finds its roots in a tradition—the epistemic tradition—that is alleged to be about as old as discussions of the sorites paradox itself.[1] However I do argue that my approach allows us to glean some insights from this tradition and others, and that it avoids some substantial baggage.

[1] Williamson (1994), pp. 22-7.

As the sorites paradox is much-discussed, I won't purport to cover every view or to give reason for all other theorists to accept my view. Such a project is exceedingly ambitious, in great part because of the wide array of kinds of commitments that responses to the paradox incur. Since most everything is up for grabs, achieving the traction needed to bring all other views into a uniform dialectic is near futile.

My overall argumentative strategy is then more focused. I consider responses to the sorites paradox that endorse classical logic together with its standard meta-theory and bivalent semantics. Among these views, I focus on standard views which assert or allow the following claim: in order to state a truth (or falsity) about a thing, one needs to predicate a property that a thing has (or doesn't have). This brings my attention to epistemicism and nihilism, which are the primary views I aim to challenge. I argue that proponents of those views should endorse my view.

As such I do not argue against supervaluationism and its various manifestations; nor do I discuss the many-valued, infinitely-valued, or otherwise alternative logic responses. The rationale is that, by providing a response which both coheres with standard two-valued classical logic and avoids serious ills, the need dissipates to advocate for more revisionary and counterintuitive views. Of course, a supervaluationist could remain resolute that the revisionary aspects of their position are not so counterintuitive. Additionally, an alternative logician may maintain that their logic has independent pull. I will not argue against either of these. I only aim to show that the sorites paradox doesn't give us reason to endorse the revisionary parts of supervaluationist logic and other alternative logics. One significant and widespread motivation for endorsing other logics stems from the desire to respond to the sorites paradox. So, though I only argue that epistemicists and nihilists should accept my position, the virtues of the view I

advocate can undercut the need to take seriously some of these logically revisionary approaches.[2]

In Chapter 1 I formulate the sorites paradox, explaining the variety of ways we may formulate sorites arguments. This allows me to draw out the main challenges that responses to the sorites paradox must meet. I add to these challenges by discussing the problems the paradox poses for cohering with classical logic. I end by discussing 'vagueness' and 'sorites-susceptibile'. There I explain that the project here is not to give a "theory of vagueness", and I discuss how the terms 'vague' and 'sorites-susceptible' will be used.

I provide an overview of the various candidate solutions to the paradox in Chapter 2, and I discuss some of the major problems for each view. The aim of this chapter is to get a sense of the main contender views, the areas of logical space they occupy, and the substantial difficulties all of them face. I thus do more than summarize the particular views I argue against. So, in addition to discussing epistemicism and nihilism, I discuss supervaluationism, subvaluationism, contextualism, and positions that accept the argument as sound. A substantial portion is devoted to discussing supervaluationism. This is because the supervaluationist is alleged to be the most popular response to the paradox[3], and because the supervaluationist is used as a foil for arguments in Chapter 3.

The third chapter argues that nihilism merits serious consideration. I begin with more details for how a nihilist can overcome the challenges to the sorites paradox, and then I explain how the nihilist can respond to the problems posed for endorsing standard two-valued classical logic. Major benefits of nihilism are then discussed. Since I don't argue for nihilism's truth—but again, that it merits serious consideration—nihilism is compared to supervaluationism. I argue that nihilism has some important benefits over supervaluationism. The major objections to

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[2] This argumentative strategy is similar to that of Ludwig and Ray (2002), who argue that putting forth their position can undercut the need to adopt other "incredible" positions (421).

[3] See Bueno and Colyvan (2012).

nihilism are then considered, with responses provided. I conclude that these considerations give us reason to take nihilism more seriously. The chapter's discussion of nihilism allows us to identify some tools available to the nihilist. Though I do not endorse nihilism, the response I advocate in the fourth chapter partakes of some of these tools.

In Chapter 4, I present my response to the sorites paradox, an epistemic view I call "quasi-nihilism". This epistemic (but as I explain, *non*-epistemic*ist*) position is then detailed. I show one way in which the quasi-nihilist may diagnose the error in sorites reasoning. Then I show how—by partaking of some nihilist tools—quasi-nihilism coheres with standard two-valued classical logic. Benefits quasi-nihilism has over epistemicism and nihilism are then discussed. I show that, by not making some sweeping semantic claims of epistemicism and nihilism, quasi-nihilism avoids commitment to widespread sharp cutoffs, avoids some self-undermining worries, fits better with our ordinary intuitions about natural language, and better allows us to supplement our knowledge of terms. I conclude by drawing out the dialectical pressure quasi-nihilism puts on both epistemicism and nihilism.

If my arguments here are successful, then a new class of epistemic responses to the sorites paradox should be explored.

Ch. 1: What is the Sorites Paradox?

1.0: Introduction

In this chapter I formulate the sorites paradox, discuss some of the problems it poses, and work to delineate the subject matter of this dissertation. The formulation of the paradox is found in section 1. There I focus on both the strength of the intuitions that inspire the paradox, and the breadth of the paradox. Additional problems the sorites paradox poses are found in section 2. Specifically, I discuss problems the paradox poses for adhering to classical logic. In the third and final section I discuss the relationship between the sorites paradox and what is often called "vagueness". There I work to gain clarity on how I will use the terms 'sorites-susceptible' and 'vague', setting aside discussions and "theories of vagueness" that have a different focus.

1.1: The sorites paradox

1.1.1 A sorites argument

We all can agree that the phrase 'is a tomato plant' is used appropriately, that it is often applied to things most or all agree are tomato plants. We can also all agree that 'is not a tomato plant' has an appropriate use, that it is applied to individuals most or all agree are not tomato plants. There are also paradigm cases of tomato plants (e.g., fully developed, healthy, and fruiting plants of species lycopersicon lycopersicum—Better Boy tomato plants), and unanimously agreed upon cases of non-tomato-plants: tomato seeds. Good seeds may be living, but are not tomato plants. Imagine, then, a paradigm case of a tomato plant, a fully developed and heavy-with-fruit Better Boy tomato plant. Now imagine that we have been watching this tomato plant develop from a seed. Imagine that we have grown it hydroponically, so that no soil is blocking our vision of it as it develops. For 90 days, we can imagine that there was something that the seed/plant looked like for each second as it developed. There were physical

characteristics that the seed/plant had at each second of its development. We could use the numeral '1' to refer to the entity that resulted from planting the seed and waiting 1 second. The thing referred to by '1' is *not* a tomato plant. '2' then would refer to the thing that was around at the end of the second second. And '7,776,000' would refer to the fully developed tomato plant at the end of 90 days.

We can all also (well, almost all can also) agree that one second can't make the difference between being a tomato plant and not being a tomato plant. How could one second do so? It would be incredible, so many think. So far, so good. Now consider the following induction argument.[1]

> (**P1**) 7,766,000 is a tomato plant.
> (**P2**) If something in our series (*n*) is a tomato plant, then the thing one second before it (*n-1*) is a tomato plant (where $2 \leq n \leq 7{,}766{,}000$).
> (**C**) 1 is a tomato plant.

We agreed that 7,766,000 was a paradigm case of a tomato plant. So P1 seems true. We also (hopefully) agreed that one second couldn't make a difference between being a tomato plant and not being a tomato plant. So P2 seems true. From these two, it seems that we are committed to an apparently wrong conclusion, namely that 1 is a tomato plant. But 1 isn't a tomato plant! It is a mere seed, overly watched by an impatient gardener. In fact, we could *assert* (**P3**)—1 is not a tomato plant—which seems to *contradict* (C).

If we want to work to avoid (C)—and what seems to be a contradiction between (P3) and (C)—then the standard fare options are: deny a premise or an inference. However both are difficult to accomplish. To begin with, the argument certainly seems to be valid, especially since

[1] A quick note: (P1)-(C) are put forward here with the *supposition* or *pretense* that we are talking about some *particular* series. Otherwise, (P1) couldn't be a premise of an argument, since '7,766,000' wouldn't successfully refer to anything. Such a pretense should not bother us at all, *especially* since there are probably enough Better Boy tomato plants in the world at varying ages to approximate such a series as described here. I simply avoid these wrinkles for ease of exposition.

it appears to be an instance of a valid argument form, often called *mathematical induction*. We have a base case: 1 is a tomato plant. Then we have an inductive clause telling us that for every pair of consecutive members, if the first is a tomato plant then the second is too. If we think of the inductive clause as a tool, we can then "apply it" to our base case, generating the result that the second member is also a tomato plant. Then we continue to apply it. Claiming the argument is invalid is, then, difficult.

Moreover, the option of denying a premise runs into problems too. To start with (P1), it seems clear that 7,766,000 is a tomato plant. Cumbersome name aside, that was the fully developed and heavy-with-fruit Better Boy tomato plant. When first describing the series, I noted that we started with a seed and ended with a paradigm case of a tomato plant. I then was *stipulating* that 7,766,000 is a paradigm case of a tomato plant. Surely there are paradigm cases of tomato plants: things to which most or all competent speakers of the language would apply 'is a tomato plant' to. Denying (P1) is then difficult.

Denying (P2) is also difficult. Above we supported it by saying that one second can't make the difference between not being a tomato plant and being a tomato plant. We then provided an inductive clause to capture that intuition. Denying the inductive clause is then classically equivalent to asserting its negation, which is classically equivalent to asserting that there is a pair of consecutive members in our series such that the second is a tomato plant and the first is not. Asserting this, however, is both counterintuitive and hard to justify.

It does not seem that our ordinary use of 'tomato plant' so finely discriminates between the very small changes that happen in one second. This intuition can't easily be dismissed by deferring to botanists. They discuss stages of plant establishment, vegetation, flowering, fruiting and ripening. They also discuss more specific processes related to the fertilization of the ovum

and to germination. However, none of these processes seems to give us some sharp cutoff for whether 'is a tomato plant' truly applies. And we can see this even if we take on the controversial assumption that standard use of 'tomato plant' by competent speakers simply carries a meaning equivalent to one of the botanists' definitions or descriptions for 'tomato plant'. This assumption is controversial, as it seems that the term is often used appropriately without the kind of precision exemplified by botanists. But for the sake of argument, let's assume that 'is a tomato plant' functions like other scientific terms that have dual use in natural language. (A similar example would be to assume that 'is water' simply means "is H_2O"[2], even though many competent users of 'is water' do not have an understanding or awareness of oxygen or hydrogen atoms, or of molecules.[3])

So, for our case, take one example: a tomato plant is what results from a certain kind of seed completing the process of germination. We would, of course, need some genetic markers to flesh out 'a certain kind of seed'. Even so, supplanting this for the meaning of 'tomato plant' doesn't remove the sorites-susceptibility. The same is true even when we add in more information about germination, like: "germination begins with water uptake by the seed (imbibition) and ends with the start of elongation by the embryonic axis, usually the radicle".[4] Suppose we had incredibly high-powered observational equipment to watch a seed which was planted hydroponically. Would we all agree that there are two consecutive seconds where we move from having no elongation of the embryonic axis to having elongation? That is dubious.

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[2] Kripke (1972) argues for a causal (external) theory of reference. Putnam (1975), speaking more about meaning, gives the famous Twin Earth thought experiment, to argue for semantic externalism—that the meaning and reference of some of our language is not solely determined by our "internal" mental states. For disagreement, see Boghossian (1997) and Segal (2000). See Lau and Deutsch (2014) for much more detail of the replies and controversies.

[3] This is just an example, as I'm not intending to weigh in on the debate about semantic externalism. Also see VandeWall (2007, esp p. 910), who argues that, in light of some observational findings, even the "purest" water is not accurately identified with H_2O.

[4] See Bewley and Black (1994), p. 1.

Resorting to a more functional description of what germination accomplishes doesn't help us any more. Consider: "[the processes of germination] transform a dehydrated, resting embryo with a barely detectable metabolism into one that has a vigorous metabolism culminating in growth".[5] Here 'vigorous' and 'barely detectable' are ripe with sorites-susceptibility.

And, of course, this is no criticism of botanists! Bewley and Black (1994) say: "no universally useful biochemical marker of the progress of germination has been found. The only stage of germination that we can time *fairly precisely* is its termination! Emergence of the axis (usually the radicle) from the seed normally enables us to recognize when germination has gone to completion, though in those cases where the axis may grow before it penetrates through the surrounding tissues, the completion of germination can be determined as the time when a sustained rise in fresh weight begins" (my emphasis).[6] Now this quote discusses *determining* when the process of germination has terminated, which of course is different from discussing *what it is* for the process to terminate. Nevertheless, such operationalization is still sorites-susceptible, as Bewley and Black seem to indicate. For example, 'sustained rise in fresh weight begins' is sorites-susceptible.

So, even assuming 'is a tomato plant' is synonymous with some respectable botanical descriptions doesn't remove the sorites susceptibility, for they are also sorites-susceptible. These considerations, then, help make the case that denying our (P2) is challenging. We seem to have a tomato plant, and we seem to agree that our standard appropriate use of 'tomato plant' doesn't finely discriminate between such small-scale changes as happen in one second. Yet we still seek to avoid commitment to the conclusion that the mere seed is a tomato plant.

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[5] Ibid, 2.
[6] Ibid, 3.

1.1.2 The Sorites Paradox

So far we have looked at one particular sorites *argument*, but we have yet to see what the sorites *paradox* is. To see this, we need to appreciate a few points.

1.1.2.1 Different language can be used

First, the sorites paradox doesn't stand or fall with an effective response to a particular argument which uses a *particular stretch of natural language* (e.g., 'is a tomato plant'). Perhaps we could discover that some biochemical (or other) marker perfectly allows us to say, of any two temporally distinct stages of a planted seed, that 'is a tomato plant' truly applies to one and not the other. (This would be quite an accomplishment, especially as cameras get faster and faster.[7]) Moreover this continues to rely on some controversial considerations in the philosophy of language, in part, particular externalist conceptions about meaning. Even so, we might imagine something like this happening which could put to rest our puzzlement about effectively escaping from the above *particular sorites argument* (and others) using 'is a tomato plant'.[8]

To respond to the *sorites paradox*, however, requires attending to the fact that most all of our language can be used to formulate a sorites argument, just like we did with 'is a tomato plant'.[9] Predicates like, 'is bald', 'is generous', 'is a butterfly', 'is rich', 'is happy', 'is wooden', 'is a performance of Chopin's Nocturne Op. 9 No. 2 in E-flat major', and 'is alive' are among the many other examples of sorites-susceptible language. This is language that can be used to construct a sorites series. Without giving a definition, we can think of a sorites series as: an ordered series such that competent users of some language agree that some particular word or

[7] Researchers at MIT have developed a laboratory camera with an effective exposure time of 1.85 trillionths-of-a-second per frame. See Velten et al (2013).

[8] If one cannot imagine this, one can imagine our discovering more about botany such as to eventually dispense with 'tomato plant', replacing it with more precise terms and avoiding the above sorites argument.

[9] We need not go so far as Russell (1923)—who maintained that all language including logical vocabulary was sorites-susceptible—to appreciate the point that there is a very wide variety of language for formulating a sorites argument.

phrase of the language applies to some first member, doesn't apply to some last member, but is tolerant with respect to some small incremental changes—that the language doesn't seem to permit us to draw a distinction between the term's true application among two consecutive members of a series ordered by some relevant and repeated small change. Given how ubiquitous this kind of language is, and given our ability to construct such a series with that language, we can see that merely denying our particular (P2) above does not resolve the paradox. We need something more general that provides a response to all of the various presentations, which use different natural language phrases.[10]

1.1.2.2 Different formulations can be used

Second, as many have made clear[11], the sorites paradox doesn't stand or fall with an effective response to a particular *formulation*. For example, the paradox can be formulated without our "inductive premise", our (P2) above. Consider this argument, sometimes called the "line-drawing formulation".

> (**P1**) 7,766,000 is a tomato plant.
> (**P2**) It is false that every member, 1-7,766,000, is a tomato plant.
> (**C**) There is something (n) in our series such that it is a tomato plant, and the thing one second before it (n-1) is not a tomato plant (where $2 \leq n \leq 7{,}766{,}000$).

Here we begin with (P1) as usual. Then we put forth a new (P2): we assert that not all of the members in our series are tomato plants. Reflection on the early members 1, 2, etc. elicits this intuition, an intuition that seems as strong as the intuition supporting (P1). Then, if not all members are tomato plants, there is at least one member that is not a tomato plant. We conclude that there is some pair of consecutive members where one is a tomato plant and the other is not,

[10] Notice that here I do *not* say: using different *predicates*. Here I leave open exactly which pieces of natural language can be used to formulate the paradox, and which syntactic categories are affected. I do follow the mainstream in thinking that the paradox affects more than just predicates. See Hyde (2011a). I also leave open whether the syntactic categories themselves are sorites-susceptible. Nevertheless, the main case-studies I discuss and focus on here are common predicates.

[11] See Williamson (1994), esp pp. 22-31, and Hyde (2011a).

which is in conflict with our original intuition that one second does not make a difference between being a tomato plant and not being a tomato plant.

These line-drawing and induction formulations can be compared to analogous formulations within formal number theory (see below). But we can also dispense with both and substitute something else for premise 2. To start, we can plug in 7,765,999 *conditionals* instead. For example, consider this argument.

(**P1**) 7,766,000 is a tomato plant.
(**P2**) If 7,766,000 is a tomato plant, then 7,765,999 is a tomato plant.
(**P3**) If 7,765,999 is a tomato plant, then 7,765,998 is a tomato plant.
...
(**P7,766,000**) If 2 is a tomato plant, then 1 is a tomato plant.
(**C**) 1 is a tomato plant.

Here by use of any one conditional we would be saying, of some pair of consecutive members in our series, that the latter is a tomato plant if the former is a tomato plant. Many iterations of modus ponens then appear to get us the same unwelcomed conclusion we arrived at above: 1 is a tomato plant. However, we don't need conditionals, as we can provide a similar argument with negations or disjunctions instead.[12] Consider this argument.

(**P1**) 7,766,000 is a tomato plant.
(**P2**) The following is false: 7,766,000 is a tomato plant and 7,765,999 is not a tomato plant.
(**P3**) The following is false: 7,765,999 is a tomato plant, and 7,765,998 is not a tomato plant.
...
(**P7,766,000**) The following is false: 2 is a tomato plant, and 1 is not a tomato plant.
(**C**) 1 is a tomato plant.

Here by use of any one negation we would be saying that the conjunction—that one member is a tomato plant and its preceding member is not—is false. If we have the claim that the one first-mentioned member is a tomato plant, then standard inference rules—use of indirect proof, conjunction introduction, and double negation elimination—get us that its preceding member is a

[12] Note: here all I mean by 'conditionals', 'negations', and 'disjunctions' are *English* sentences using the following *or similar* constructions: "if, … then …", "it is not the case that … ", and "either … or ….", respectively. Of course, we can also formulate the paradox with other replacements, or by using other natural languages.

tomato plant. Repeated use of these steps for all other consecutive pairs appears to get us the same unsavory conclusion: 1 is a tomato plant. The same point can be made with disjunctions. Consider this argument.

> (**P1**) 7,766,000 is a tomato plant.
> (**P2**) Either 7,766,000 is not a tomato plant, or 7,765,999 is a tomato plant.
> (**P3**) Either 7,765,999 is not a tomato plant, or 7,765,998 is a tomato plant.
> ...
> (**P7,766,000**) Either 2 is not a tomato plant, or 1 is a tomato plant.
> (**C**) 1 is a tomato plant.

Here by use of any one disjunction we would be saying that either the first-mentioned member is not a tomato plant or the second-mentioned member is a tomato plant. If we have the claim that the first-mentioned is a tomato plant, then standard inference rules—use of disjunction elimination and reiteration—can get us that the second-mentioned is a tomato plant. Repeated use appears to get us the same seemingly incorrect conclusion yet again, that 1 is a tomato plant.

Even more, both the induction formulation and the line drawing formulation have analogs *within formal number theory*. Imagine that we have the series from 1 (the seed) to 7,766,000 (the mature tomato plant) just as described above. We could then speak, not about the items in our series, but about *the natural numbers*. We could then repurpose our numerals ('1'-'7,766,000') to refer to those numbers. And we could predicate 'is the number of a tomato plant in our series' *of 7,766,000 (the number)*. Then some other sorites arguments may be given. We can do induction on the natural numbers. For example:

> (**P1**) 7,766,000 numbers a tomato plant in our series.
> (**P2**) If some number (*n*) numbers a tomato plant in our series, then its preceding number numbers a tomato plant in our series (where $2 \leq n \leq 7{,}766{,}000$).
>
> (**C**) 1 numbers a tomato plant in our series.[13]

[13] This is English supplemented with some arithmetical symbols. Of course, formal number theory, as a subset of First Order Logic with a standard interpretation, would require different symbols. I avoid these for ease of exposition, and do not intend to imply that the English is a correct translation of the symbols of FOL. I am not

Premise one then says something different from the first premise of any of our previous arguments, that the number 7,766,000 has a property of being the number of a tomato plant in our series. It may then seem that we can perform an induction on the natural numbers to get the result that the number 1 numbers a tomato plant in our series. That is an unsavory result. It also seems that we could employ the least number principle[14], and other provable equivalences in formal number theory, also giving us conclusions in conflict with our original intuitions.

There are also some other candidate formulations for sorites arguments, discussion of which is out of our purview.[15] From what we've seen, though, there are some points we can make about the varieties of formulation. We began with an induction formulation, talking about items in our intuitive series from seed to plant. But we didn't need an inductive clause to formulate a sorites argument. So responding to the sorites paradox is not as simple as denying induction for sorites-susceptible language. We gave the line drawing formulation, which consisted simply in claiming that the last member was a tomato plant and in denying the claim that every member of our series was a tomato plant. A similar point holds of our formulations with conditionals, disjunctions, and negations. Throughout those arguments we employed a variety of seemingly good moves in reasoning: modus ponens, indirect proof, conjunction introduction, double negation elimination, disjunction elimination, and reiteration. So, for example, responding to the sorites paradox is not as simple as denying double negation elimination for sorites-susceptible predicates, or in putting some restrictions on the use of indirect proof or disjunction elimination. More than that needs to be done to respond to the sorites paradox. Finally, our formulation from within formal number theory helps us see a final

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assuming that various forms of formalism are all incorrect, for example.

[14] See Cargile (1969) for a formulation which uses the Least Number Principle as part of formal number theory.

[15] See Priest (1991) and Weber and Colyvan (2010) who purport to give more distinct formulations. Hyde (2011a) very briefly discusses these formulations.

point: abandoning classical logic for sorites-susceptible predicates is also not enough. Intuitionists have formal number theory, with versions of mathematical induction and the least number principle, as well as their provable-equivalences.[16] Again, a complete response to the paradox requires something more.

1.1.2.3 Sorites arguments in thought

Finally, as is commonly suggested but I think is under-explored, the paradox may affect thought as well as language. So long as we can *think* about an ordered group of objects, it appears to follow—from (i) the first object's having some feature, and (ii) one second not making a difference between having that feature and not having it—that the last has that feature. If we agree that the last does not, we appear committed to a contradiction. Our ability to pick out a thing and predicate something of it, whether in thought alone, or by use of a natural language, is then challenged in *very many* ordinary and intuitive cases.[17]

1.1.2.4 The main challenge

Put generally, the main challenge for responding to the sorites paradox is to *both* (**I**) salvage our pre-theoretical intuitions that gave rise to the paradox (e.g., from above: our pre-theoretical intuitions that there are tomato plants, that there are non-tomato-plants, and that one second can't make the difference between being a tomato plant and being a non-tomato-plant), *and* (**II**) avoid the implausible commitments we seem saddled with. For example, with our original formulation at the outset, these implausible commitments were: (C) and what seems to

[16] See Heyting (1956) for an example, and Cargile (1969) for this point.

[17] The idea that sorites arguments may be formulated in thought, without use of a natural language may be challenged. Defenders of the language of thought may chime in. It is out of my purview to wade through that discussion. See Sorensen (1991) for an argument that defenders of the language of thought hypothesis must accept an epistemic view. We will discuss "the epistemic view" Sorensen discusses in Chapter 2.

be a contradiction between (C) and (P3)).[18] Anyone can accomplish (II) by denying some premise or inference (or that there is an argument). For example, one might deny (P2), and admit that there is a "least" tomato plant. However this response seems to preclude accomplishing (I). Remember that our intuitive support for both (P1) and (P2) was strong.

1.2: Problems for Upholding Classical Logic

There are a lot of interconnected problems that arise in the course of responding to the sorites paradox. These involve questions about language and logic. General examples include questions about which formal systems are adequate representations or adequate models or adequate idealizations of our actual reasoning, questions about the correct theory of truth, questions about which of our ordinary statements are true, and questions about what the meanings of our terms are.[19] We will direct our attention to some specific problems raised for upholding classical logic.

1.2.1 Challenges to classical logic

As logic is thought to be the study of the structure of good reasoning, classical logic has been overwhelmingly thought by philosophers and some mathematicians to be the best candidate for that structure. For example, many have asserted all of the following three: the principle of bivalence (PB), the law of excluded middle (LEM), and the law of non-contradiction (LNC). These principles/laws suggest that the things one reasons with (or better, the things that *good*

[18] I am not stacking the deck so that dialethiests (or other alternative or "deviant" logicians) cannot solve the paradox. Some may say that dialethiests cannot accomplish (II), given how I framed it, because dialethiests claim that there are dialethia. I say, (II) is best understood such that it may be accomplished by one's *explaining away* the "implausibilities" they are committed to. I am also not stacking the deck against epistemicists, given how I set up (I). Again, one may work to explain away our pre-theoretical intuition that one second can't make a difference between being a tomato plant and not being a tomato plant. Nor am I stacking the deck against people who deny (P1). Again, the intuition that there are tomato plants would just need to be explained away.

[19] Some even maintain the the sorites paradox should be thought of and discussed as conceptually tied to other semantic paradoxes. See Field (2003) and Hyde (2011b).

reasoning employs), be they sentences or propositions, have certain features.[20] Many people have then clung to formal systems (e.g., first-order logic, second-order logic, and even Aristotelian categorical logic) that preserve these (or some of these) features. Many have further gone on to *use* these formal systems to capture or model our *claims* (in virtue of capturing or modeling the truth-conditions for the relevant sentences) and our *reasoning* (in virtue of capturing or modeling the arguments that are valid). These taken together have constituted something like an orthodoxy.

The sorites paradox appears to challenge at least two parts to this orthodoxy. First, it appears to challenge PB, LEM, and LNC themselves. To see this, consider what we can call a "borderline case" of a tomato plant, from our series above. Imagine a candidate such that, despite our knowing all the facts about the growth of the thing, and despite our having as perfect a linguistic grasp on 'is a tomato plant' as we can get, difficulty persists in determining whether or not 'is a tomato plant' or 'is not a tomato plant' applies to that case (or whether 'is truly a tomato plant' or 'is not truly a tomato plant' applies to that case). Again, we can call this thing a "borderline case"[21] and for ease of discussion, pick the name for an example: 604,800. This is what we would have after about a week of planting the seed, which often results in something that doesn't appear to be correctly termed "not a tomato-plant" or "tomato plant".[22] Then, '604,800 is a tomato plant' might look like a counterexample to PB, as it doesn't appear either

[20] I will not belabor the variety of different ways these "laws" or "principles" may be formulated here. I take these as applying to *propositions*, rather than to sentences which have some seemingly-relevant grammatical or structural forms.

[21] Here I avoid the controversies surrounding whether the having of a "borderline case" is essential for the having of "vagueness". See Sainsbury (1990/1996) for some of this controversy. My use of 'borderline case' here and elsewhere deals just with the described difficulty competent English speakers can encounter, and is not sitting in for a controversial definition of some more metaphysically-minded phenomenon often-termed "being a borderline case". I am *only* looking for a case that brings us the just-mentioned kind of difficulty.

[22] Growing conditions certainly impact how long this takes, of course. And we could use another numeral if one claimed, perhaps on the basis of some expert hydroponics knowledge, that 604,800 couldn't be a borderline case. Obviously, some seeds sprout faster than others.

true or false. Moreover, 'Either 604,800 is a tomato plant, or it is not the case that 604,800 is a tomato plant' might look like a counterexample to LEM, as it doesn't appear true. Finally, it looks like, 'The following is false: 604,800 is a tomato plant, and it is not the case that 604,800 is a tomato plant' might look like a counterexample to LNC. On one way of looking at things, it doesn't seem true, in that the "conjunction" that follows the colon in that sentence doesn't seem false. It looks like (P1) and (P2) from above get us the first "conjunct": '604,800 is a tomato plant'. And we can add another argument, from similarly intuitive premises, beginning by predicating 'is not a tomato plant' of 1, and adding an inductive premise for n+1 members of our series. This gets us the second "conjunct": 'it is not the case that 604,800 is a tomato plant'. We then can conjoin them. Or so the reasoning goes. And so a negation of that "conjunction" looks to be false.

Second, the sorites paradox appears to challenge the claim that classical logic is the "correct logic". One part of this is that the sorites paradox appears to challenge the efficacy of using certain classical logic formal systems (e.g., first-order predicate logic, second-order logic, and Aristotelian categorical logic) to capture or model both our claims and our reasoning. For example, giving a standard interpretation with FOL requires us to specify a domain, and to provide the "meanings" of our constants and predicates in terms of subsets of the domain. This gets difficult for language like, 'is a tomato plant'. Suppose we want to use something in our logic to stand in for 'is a tomato plant'. We could use, 'TP(_)' for the predicate, and then allow all 7,766,000 members of our series into our domain.[23] Which subset of those members should be chosen for 'TP(_)'? Moreover, suppose we number the members of the domain with the constants: 'a_1', 'a_2', … '$a_{7,766,000}$'. Then we could write the following sentences: 'TP(a_1)', TP(a_2)', … 'TP($a_{7,766,000}$)'. The problem is that it seems that 'TP(a_1)' is clearly false,

[23] I abandon the stricter conventional syntax of FOL for ease of exposition.

'TP($a_{7,766,000}$)' is clearly true, and thus some pair of consecutive sentences will be such that the first is false and the second is true. But this is implausible. Given our competent use of 'is a tomato plant', it isn't plausible that we can simply identify a subset of the things 1-7,766,000 that includes all and only the tomato plants, such that everything outside of it will not be a tomato plant.

This (or some similar) point can be made for many other logics, including Aristotelian categorical logic. Unless there is some clear constraint on translating such a long list of sentences into the symbolism of that logic, *either* that logic would expect values for all of the sentences and thus some sharp cutoff in the values of a series of relevantly ordered sentences, *or* some story must be told for why some sentences don't get a value.[24] But if some sentences don't get a value, there is a sharp cutoff in the sentences between *being true or being false* and *being neither* (or between "having been designated" and "not having been designated"), which may also seem implausible in the face of our actual language practices. So, it seems that we *either* abandon the *motivation we had for supporting our original (P2)*—the thought that one second can't make a difference between being a tomato plant and not being a tomato plant—*or* we abandon using these logics to model or capture our arguments which are mostly given with language like, 'is a tomato plant'. Thus one may ask: is classical logic the correct logic?

1.2.2 Complications for responding to the sorites paradox

Having seen that responding to the sorites paradox was difficult, we now see that more difficulty is invited when one attempts the joint-project of responding to the paradox while preserving some commitment to classical logic. For example, it may be tempting to claim that sorites-susceptible language falsifies principles like PB, LEM, and LNC; yet these principles

[24] Perhaps there is a principled explanation detailing when we can translate into the logic and when we can't. I don't know what this would amount to for our case of sorites-susceptibility, but don't want to discount it outright.

have independent intuitive and theoretical appeal. As we will cover in Chapter 2, many—though not all—work towards this joint-project. Before we get to the standard responses in Chapter 2, we can gain more clarity on the subject matter of interest here.

1.3 Vagueness and The Sorites Paradox

It is often said that the sorites paradox exemplifies the problem of "vagueness".[25] Then philosophers give theories of "vagueness" to attempt to respond to the sorites paradox. Using the language of "giving a theory of vagueness" can invite more controversy, though. One can certainly provide a response to the sorites paradox without purporting to give some general theory of some phenomenon termed with, 'vagueness'. Pointing this out is not simply noting the trivial point that it is contingent what the words 'vague' and 'vagueness' have come to mark. In fact, there appears to be disagreement about whether "vagueness" is the same thing as "sorites-susceptibility".[26] This can be puzzling. Such a disagreement requires clarity on the basic notions that candidate theorists purport to disagree about identifying or separating. If we want to disagree about whether "vagueness is sorites-susceptibility", we need clarity on both notions upfront.

Philosophers sometimes speak of "vagueness" as being "linguistic", or "epistemic", or "ontic"; it has been claimed that some theorists writing on the topic can be understood as saying that "all vagueness" is of one of these varieties.[27] This way of speaking could mislead, as the relevant candidate views—views that are glossed as claiming that "all vagueness is linguistic" (or epistemic, or metaphysical)—are usually offered as responses to the *sorites paradox*. It must be observed that one can give an epistemic response to the sorites paradox while primarily taking

[25] See Hyde (2011a).
[26] See Bueno and Colyvan (2012) who discuss a variety of different candidate definitions of "vagueness", only one of which defines "vagueness" in terms of "sorites susceptibility".
[27] See Merricks (2001).

'vague' to be a word that marks a property of language or thought! We have to describe the subject matter that we want to give a theory about. The theory comes in, then, when we all agree on some feature of language or thought, and then disagree in how best to analyze or understand that feature. It is then important to distinguish between uses of the word that purport to mark our subject matter (e.g., "The sorites argument above exemplifies vagueness"), and uses of the word that purport to mark how our theory analyzes the subject matter (e.g. "linguistic vagueness reduces to either epistemic vagueness or metaphysical vagueness"). With such a distinction, clarity and progress can be made adjudicating between positions. Without such a distinction, we may be in danger of not knowing what we are talking about, and are perhaps not in a position to genuinely agree or disagree.

For my purposes here, I aim to discuss candidate solutions to the sorites paradox. The sorites paradox is the set of paradoxical arguments described above. These arguments need to be addressed, and are the primary target here. Were someone to come along and ask for a "more general theory of vagueness", I would request that they identify the "more general" thing they want me to give a theory of.

Given that the sorites paradox can be generated for some cases, and not others, we might still want to use the word 'vague' to pick out a feature that helps us separate the cases that count from those that do not. It is worth figuring out what we could reasonably mean.

1.3.1 Uses of 'vague' to set aside

Like most words in philosophy that have natural language correlates, 'vague' is used in many ways. Here I'll discuss some of these uses, and set them aside.

Theo gives his young sister a normal bag of marbles, all standard size and none broken. She, delighted, responds: wow, how many are in there? Having exhausted his goodwill for the

day, Theo sarcastically responds: less than a million! We can naturally say that Theo's response was "vague". However, the relevant feature of Theo's response, which is highlighted here by 'vague', doesn't generate any kind of sorites paradox. We can take all the marbles from the bag. Again, they are standard size with none broken. One at a time, we can add the marbles back to the bag until we have all the marbles in the bag. Then, between every stage of adding a marble, applying the predicate 'less than a million' will pose us no trouble as we witnessed above. It is, or so it seems, obviously true that there are less than a million marbles in the bag at every stage. We could complicate these considerations by focusing on the words 'marbles' and 'bag' and so on, and work to build a distinct sorites series for each of them. In any case, the use of 'vague' at play *here* is that of *being imprecise*. We can set that use aside.

Regina offers to Rachel that she'll do the grocery shopping for the week, and asks Rachel what she would like picked up. Rachel responds: "food". Among other things, we can call Rachel's response "vague". Yet the salient feature of her response we can mark by 'vague' doesn't generate a paradox. Of course, we could build a sorites series from "is food" to "is not food". However, the operative use of 'vague' in this example is that of *being unspecific*. We shall set that use aside as well.

We might speak about a new friend's intentions as being "vague", where it is difficult to determine what their intentions are. Such a use of 'vague' is equivalent to something like *being generally unclear or hard to determine*. We could imagine a sorites series from "intends to jump in the lake" to "does not intend to jump in the lake". Nevertheless, the uses of 'vague' roughly meaning *generally unclear* or *hard to determine* may also be set aside.

If George has a sense that things aren't going well in his relationship, he might tell his partner that he has a vague sense that things aren't on the right track. Here he might mean that

his sense is *not clearly perceived*. We can also talk about ideas or thoughts or plans about the future as being "vague", where all we mean is that they are *not fully developed or formed*. We can also set those uses aside, as they are neither necessary nor sufficient for building a sorites series.

1.3.2 Vague words and vague statements

It is common in the philosophical literature to describe *words* as being "vague", even when one is giving some response to the sorites paradox that puts emphasis, not on the language, but on our knowledge or the world. Given such a use of 'vague', *we* can say that a word or phrase is vague if it can be used, in accordance with its standard use, to construct a sorites series and a sorites argument. Such a use of 'vague' paints the majority of our words as vague. Supposing that Sam is a paradigm case of being bald, the sentence 'Sam is bald' would then be classified as having a vague word. However, we may also wish to note that the paradigm case-sentence is obviously true; and the scenario the sentence is about can naturally be described as exhibiting *no vagueness.* Trouble doesn't arise with Sam, the clearly bald man. Trouble eventually creeps in within the series, though. There must, then, be another notion of "vagueness" we can clarify. Such a notion must focus on particular cases where trouble arises. We then need a notion of 'vague' that will not apply to the clear cases, but will apply to some other trouble cases. The property, then, cannot be a feature of the mere word, which is univocal throughout the sorites argument.

We may then try to identify a feature *of statements* that we can mark with 'vague'. But what feature? First, let me be clear about 'statement'. The word could be used to mean *proposition*: those things that are either true or false, the things we believe and express by use of sentences. Alternatively, the word could be used to mean: the act of putting forth a sentence with

assertoric force. If the former is meant, then any theorist who wants to claim that some typical cases of vagueness are not cases of expressing propositions will be ruled out by definitional fiat. So that use should not concern us. If the latter is meant, we may try to identify a clear feature of the relevant statements. We may begin by considering those "statements" one can engage in with sentences that contain words like 'bald', 'rich', 'generous', and so on—words that can be used, in accordance with their standard use, to construct a sorites series and a sorites argument. But to identify a relevant feature of *statements* we can mark with 'vague', we cannot mean just *any acts* that are the assertoric putting forth of a sentence. We must talk about a proper subset of those acts, namely those which occur in a situation where a majority of competent speakers of the language will have trouble determining whether the statement is true or false (or something else). This doesn't happen with the clear case use of 'Sam is bald', but does seem to happen at some point in the series.

I mention the *assertoric* use of sentences because someone could put forth an assertable sentence without asserting it, and thus we would not have a "statement" in the relevant sense. Imagine a character in a play, or someone simply reading through a list of declarative English sentences to work on pronunciation.

We can also imagine stating things by use of the interrogative, or by use of other sentences. These cases need not trouble us, for any assertions subtly made by use of interrogative or other sentences can be expressed by assertoric use of a declarative sentence. In cases where one can engage in assertion by use of sentences that aren't declarative, there would be both a conveyed assertion and *something else going on*: the question (or other thing) that is elicited by the sentence being put forth. We need not wade through controversial claims about *grammatical* categories, be they moods or sentence types. We are, then, talking about the sentences that can be

used to say things; and, again, with respect to those sentences, we are talking about putting them forward with a certain force, that of assertion.

Moreover, if 'majority' is understood as "more than half" (or alternatively, "the largest of the groups that respond in one uniform way"), then we could work to identify and poll a representative group of competent speakers of English. Were we to challenge our own grip on 'competent speakers of English', we could sub in some empirical metric like: can currently score at or above some specified value on some particular basic fluency test. We would then need to observe whether the representative sample[28] reflects the relevant kind of difficulty with determining whether the statement says something true or false (or something else). This would be difficult work, in part because great clarity would be needed on what, precisely the difficulty is that we are testing for.

We may notice, however, that this definition (of the "vagueness of a statement") is incomplete. For there are cases of statements used in contexts where competent speakers will have trouble determining the truth-value, but which don't count as "vague" in any relevant sense. These are simple cases where people are straightforwardly unable to know the truth-value. For example, I could talk with my brother about a long-lost antique dish set of our maternal grandmother's, and say: that set had at least 23 separate items. People, my brother included, wouldn't be able to effectively say 'true' or 'false' in that case, because no one has access to the set to count it. So we obviously need more in our definition, to exclude this case from counting as 'vague'.

We may then add this clause to our working definition: 'even if all relevant observations are made'. In the case of the statement, 'The set had at least 23 separate items', it seems there are

[28] Of course there are issues with determining whether a sample is *representative*, and with gaining clarity on what we can mean by 'representative'. There I defer to experts on how precisely they would need to regiment that notion, assuming that *being sufficiently large* and *being randomly chosen* will be part of the conversation.

a number of courses of action we may count as “relevant observations”. We could track down the set and count its members, find an informative picture of the completed set, or talk to someone who can give us reliable testimony about the number of items in the set. The addition of that clause would then, and constructively, exclude the statement from counting as ‘vague’. Such a clause also helps to exclude mathematical statements like Euler's reformulation of Goldbach's conjecture, statements that exceed our current mathematical knowledge; for, presumably, there are observations one might make about positive even integers, and about prime numbers, such that these observations would help us verify or falsify the conjecture, and thus help us settle the question of whether the statement is true or false.

So, after having added in that clause, we have: a statement is vague if it is an act of assertorically putting forth a sentence, where a majority of competent speakers of the language have trouble determining its truth-value, even when all relevant observations have been made (about the object and the term(s)).

This candidate definition is better, but still not good enough to justify the relevant use of ‘vague’ for statements. Suppose my brother I are discussing our grandmother, and come upon a picture of a woman that predates our grandmother’s lifetime. Speaking about our grandmother, he assertorically utters: ‘That is her mother’. He means, of a particular woman we have in mind, our maternal grandmother, that the person in the picture is the mother of our maternal grandmother. Let us add in some more detail, though. Suppose that, at the time, we had no knowledge of any family history prior to our grandmother’s time, and no prior knowledge of this picture. All we have is the picture with a reliable date. Suppose we have no other evidence to go on at that moment. Imagine, then, that we later learn that there were four separate women who each played a role in our grandmother’s development. One woman produced the ovum, one

woman was the host for fertilization, one woman carried the fetus to term, and another woman raised our grandmother from the moment of birth.[29]

Such a story is bizarre, and borders on irreverent. Nevertheless we may notice that in this situation we will have difficulty determining the truth-value of 'That is her mother'. Moreover the difficulty persists even if all relevant observations have been made. Suppose we get pictures of all four of these women, and could then verify that the woman in the original picture was the source of the ovum, or the host for fertilization. In either case, we still would be unable to determine the truth-value of the sentence. And yet, we do not have a case depicting a relevant feature of the *vagueness* of a statement. We do not have the relevant kind of case like with 'bald', where, for example, competent speakers agree on its application for a clear case, disagree on its application for a clear non-case, and then have some difficulty with intermediate applications.

Nor does the above case reveal *ambiguity*, which we also must distance from any relevant candidate notion of vagueness. A sentence is ambiguous if there are at least two distinct candidate meanings that that sentence may be taken to express. More work may be done to sufficiently clarify and delineate the notion of ambiguity, and various types of ambiguity. However we can simply note that 'mother' is not ambiguous between 4 distinct meanings: source of ovum, host for fertilization, host for fetal development, and female overseeing childrearing. We sometimes use 'biological mother' to distinguish the source of the ovum from the female who helped reared. Nevertheless, there are possible cases, like the strange one described above, which reveal that 'mother' is faced with some remote possibilities according to which there is no answer to the question of whether it applies. This can be acknowledged, even though some cases exist (e.g., cases where one woman serves all 4 roles) where the word has definite application.

[29] This particular example comes from adding to Blackburn's (2016) example of *open texture*.

This, then, is the concept of *open texture*.[30] A successful definition of the vagueness of statements must not count cases of open texture.[31] We are then left looking for improvements to our definition of the vagueness of statements.

I have not come across a non-question-begging and uncontroversial definition of a relevant notion of vagueness that may be applied to statements.[32] Perhaps one may be offered. For our purposes here, it is enough to note issues with arriving at one, and then gain clarity on how the term 'vague' can be used here. Again, my primary aim here is to respond to the sorites paradox.

1.3.3 What I will mean by 'vague'

Here I will use 'vague' and 'sorites-susceptible' as interchangeable. We need not paint this as defining one notion (e.g. "vague") in terms of another (e.g. "sorites susceptibility"), or of requiring us to take a stand on the explanatory priority of one of the notions.[33] I am simply saying what I will mean. A term or phrase is sorites-susceptible if it can be used to generate a sorites series and a sorites argument. What, then is a sorites argument? We gave examples above, and discussed many different argument formulations, yet did not settle on a *definition* for 'sorites series'.

Bueno and Colyvan define a sorites argument as "*an argument by degrees with premises that appear to be true, but with a conclusion that appears to be false*."[34] This leaves us wondering what an argument by degrees is. It also doesn't settle the question of *who manifests*

[30] See Waissman (1945) for early discussion, and Shapiro (2003) for more recent discussion. Thanks to Cargile for helpful discussion on open texture.
[31] This is not to say that 'vague' can't be used to mean: open-texture. I am maintaining that, when concerned with responding to the *sorites paradox*, if one wants to define a notion of vagueness that applies to only some—the relevantly unclear—*statements*, cases of open texture should be excluded. There is no series from source of ovum to female overseeing childrearing ordered by some specified incremental change.
[32] See Bueno and Colyvan (2012) who argue that all extant definitions of 'vagueness' fail, and settle on defining 'vagueness' with "sorites-susceptibility".
[33] Ibid, 31-2.
[34] Ibid, 29.

the appearance. There could be a large group of struggling mathematics students who, while observing a sound mathematical induction, recognize the truth of the base case and the truth of the inductive clause, but don't accept the conclusion. Such an example shouldn't count as a sorites argument. Cargile adds more, when defining a sorites *series* as:

> "a series of things numbered 1 through n such that (i) it would be a matter of general agreement (if good social science testing were done) that a predicate P applies truly to entry 1 and equally agreed that P does not apply truly to entry n and (ii) there is no entry k in the series such that it would be generally agreed that P applies truly to k but does not apply truly to k+1."[35]

With such a definition in place, then, a sorites argument can easily be formulated, and can take any of the forms discussed above. One observation about this definition is that it doesn't specify which group's general agreement we are concerned with. Presumably we want to be talking about something like competent speakers of whatever language the predicate is taken from. This can easily be added, and we would then need some clear metric for *counting as a competent speaker.* With this notion clarified, we can begin discussing theories that are put forward to respond to the sorites paradox.

[35] See Cargile (forthcoming). This new definition, unlike our working definition thus far, does not require that what orders the series is a small-scale change along one dimension. It allows *many* different orderings.

Ch. 2: Responses to the Sorites Paradox

2.0: Introduction

This chapter provides an overview of the various candidate solutions to the paradox, and discusses some difficulties that arise for these candidate solutions. In the first section, I lay out the way views will be classified. The second covers epistemicism and its problems; the third takes up both supervaluationism and subvaluationism; the fourth covers a particular manifestation of contextualism, Fara's Contextualism; the fifth discusses nihilism; and the sixth covers views that accept sorites arguments as sound. I conclude with some general remarks about the stakes of the debate.

2.1: Classification for Standard Responses

There has been renewed interest in the sorites paradox recently. Philosophers are increasingly developing new logics.[1] There have been advancements in the epistemicist view credited to Cargile (1969) and developed by Williamson (2000, 1994) and Sorensen (2001, 1988)[2], new work in semantic accounts like supervaluationism once defended by Fine (1975)[3], and more work to better accommodate and defend ontic views.[4] Because of the many responses given, we cannot cover every particular view. We can be content to notice the standard kinds of responses and to see what general region of logical space they occupy. The purpose here is to get a lay of the land.

In order to discuss the different responses to the sorites paradox, it is helpful to have some minimal taxonomy. To do that, we will focus our attention primarily on the original

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[1] Notable three-valued approaches include Halldén (1949), Körner (1960), Tye (1990, 1994), Field (2003), and Ripley (2013). Notable infinitely-valued approaches include Goguen (1969), Lakoff (1973), Sanford (1975), Zadeh (1975), Machina (1972, 1976), King (1979), Forbes (1983), Hyde (2008), MacFarlane (2010), and Simons (2010).

[2] Defenses and conceptual advancements include Hawthorne (2006), Hawthorne and McGonical (2008), Kearns and Magidor (2008, 2012), Rescher (2008, pp. 77-88), Cameron (2010), Benovsky (2011), Breckenridge and Magidor (2012), and Hu (2014). See Cargile (2005) for some critique.

[3] Varzi (2007), Asher, Dever, and Pappas (2009), Keefe (2008, 2010), and García-Carpintero (2010).

[4] See Akiba (2000, 2004), Williams (2008), Barnes (2010), and Barnes and Williams (2011).

induction formulation we looked at, and then divide responses into 4 camps, based on their claims about that formulation. In some cases, we will see how responses differ when we move to alternative formulations. Here is our original induction sorites argument, again.

(**P1**) 7,766,000 is a tomato plant.

(**P2**) If something in our series (*n*) is a tomato plant, then the thing one second before it (*n-1*) is a tomato plant (where $2 \leq n \leq 7{,}766{,}000$).

(**C**) 1 is a tomato plant.

And here are four camps we can recognize.[5]

(**A**) Claim (P1)-(C) is unsound and deny its validity.
(**B**) Claim (P1)-(C) is unsound and deny a premise.
(**C**) Claim (P1)-(C) is sound.
(**D**) Claim (P1)-(C) is neither sound nor unsound.

2.2: Epistemicism

Let's begin with *epistemicism*. The epistemicist responds to the sorites paradox by, to put it intuitively (and roughly), admitting that there are sharp cutoffs, and maintaining that we are ignorant of such cutoffs. Epistemicism is credited to Cargile (1969)[6], and defended in greater detail by Sorensen (2001, 1988) and Williamson (2000, 1994).[7] For purposes of seeing how this view differs from others (and later in Chapter 4, comparing it to the view I will advocate), we need some more detail. A mere intuitive gloss will not do. As there is a lack of clear articulation of the epistemicist *thesis*, we will compare central quotes from two key proponents. We will then take what is in common between the two views.

2.2.1 Williamson's epistemicism

Williamson says,

[5] Given these camps, it is of course possible that some response occupies both camp (A) and camp (B). So these camps are not non-overlapping.
[6] Williamson (1994, p. 300) credits Cargile (1969), while also arguing that epistemicism began and/or had its roots with the Stoics (12-22).
[7] For a more recent advancement, see Hu (2014).

> "At some times, it was unclear whether Rembrandt was old. He was neither clearly old nor clearly not old. The unclarity resulted from vagueness in the statement that Rembrandt was old. We can even use such examples to define the notion of vagueness. An expression or concept is vague if and only if it can result in unclarity of the kind just exemplified."[8]

Williamson then goes on to say,

> "The thesis of this book is that vagueness is an epistemic phenomenon. As such, it constitutes no objection to classical logic or semantics. In cases of unclarity, statements remain true or false, but speakers of the language have no way of knowing which. Higher order vagueness consists in ignorance about ignorance".[9]

Above Williamson said that in cases of "unclarity" statements are either true or false. We were previously given the example of Rembrandt's oldness over time to help us specify the kind of unclarity at stake. Of course, the kind of unclarity that is depicted in a sorites argument is different from ambiguity, imprecision, unspecificity, and other notions (as discussed in Chapter 1). So, on Williamson's view, statements that have the right kind of unclarity—unclarity relevant to discussions of "vagueness" and the sorites paradox—all express truths or falsities. This is then true about assertoric uses of sentences that are about members in a sorites series, sentences that employ sorites-susceptible terms. So, on Williamson's view, when those sentences are used they express something either true or false. For example, if we revisit our formulation of the sorites paradox from above, we remember we could have used a sentence to talk about each of our previously discussed entities. This includes 7,766,000, the fully developed, heavy-with-fruit tomato plant after 90 full days, 1, the mere seed one second after its placement in the ground, and everything in between. We could then predicate 'is a tomato plant' of all the entities, bringing some unclarity at a certain point in moving through the sentences. This would give us many sentences, from $S_{7,766,000}$ - S_1. Then, it would seem that all of those *statements*—cases where we utter those sentences to talk about the entities—are either true or false, from the first to the last.

[8] Williamson (1994), p. 2.
[9] Ibid, 3.

Since we seem to have agreed at the outset that $S_{7,766,000}$ is true and S_1 is false, because we agreed that 7,766,000 was a tomato plant and 1 was not, there is a second at which something— *that* thing— goes from not being a tomato plant to being a tomato plant.

Moving to provide more restrictions on the kind of unclarity at issue, Williamson later on addresses the principle of bivalence. There he says,

> "the principle [of bivalence] is explicitly restricted to occasions where someone uses an utterance to say that something is the case, in brief (if again with a little artificiality), when the utterance says that something is the case".[10]

Williamson then goes on to argue, by reductio, for this principle of bivalence. Then he states:

> "Since, for any vague utterance, the supposition that it does not satisfy bivalence leads to a contradiction, it can hardly be obvious that not every vague utterance satisfies bivalence."[11]

So the picture we have for Williamson is one where *any* "vague" utterance *that is used to say that something is the case* is either true or false. This, importantly, leaves open the question of how many "vague utterances" genuinely say that something is the case. Setting aside clearly non-declarative uses of vague utterances like, questions, commands, etc., we may ask how many of those (declarative) "vague utterances" genuinely *say that something is the case*. This is not a trivial question, for it may be that lots of sentences that are grammatically of the declarative form, sentences with common terms that we treat as contentful, are not routinely used to make genuine assertions. In any case, however, we have a response to the sorites paradox from Williamson. And, because there will be a member in a series such that some property is truly predicated of it but is not of a preceding or proceeding member, we will have at least one false premise in our original argument.

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[10] Ibid, p. 187.
[11] Ibid, p. 193.

We then situate Williamson in camp (B): Claim (P1)-(C) is unsound and deny a premise. In Williamson's case, denying this premise is construed as equivalent to asserting the negation of that premise.[12] So, for our original induction formulation, then, the premise claimed to be false is: (P2). For the formulations with conditionals/disjunctions/negations, there would be at least one false conditional/disjunction/negation premise. We will, however, not know which premise it is.[13]

2.2.2 Sorensen's epistemicism

Sorensen, another proponent of epistemicism, says

> "This [epistemicism] is the view that vagueness is a purely epistemological phenomenon. … the ignorance theory of vagueness denies that there is any objective indeterminacy."[14]

To claim that epistemicism denies that there is any objective indeterminacy is to claim more than Williamson does. This is because it could turn out that there are some terms that are not sorites-susceptible but that exhibit indeterminacy. It could turn out that some empirically supported examples of indeterminacy do not meet the conditions for sorites-susceptibility, but that, a la Williamson, all terms that are sorites-susceptible, when used to say something about a thing, provide statements that are either true or false. In any case, we can set aside more general claims an epistemicist may make about "vague" language, and get clearer on Sorensen's response to the sorites paradox.

Sorensen goes on to say,

> "In this book, I am concerned with standard logic (first order logic with identity) as applied to the consequence relation. I am a logical conservative in that I deny that vagueness provides any reason to reject any theorem or inference rules of standard logic.

[12] More will be said on this in our discussion of supervaluationism in §2.3.1 & §2.3.2.
[13] Even more, for the "line-drawing" formulation, Williamson takes camp (C) as he accepts the argument as sound.
[14] See Sorensen (2001), p. 8.

> The phenomenon of higher order vagueness shows that the basic problem posed by vagueness (sharp boundaries for vague terms) is inescapable."[15]

Just as with our discussion of Williamson above (when we asked which vague uses say that something is the case), we may ask Sorensen for clarity about which phrases of natural language exhibit a genuine sorites series. Sorensen spoke a bit about this.

> "To distinguish a real sorites paradox from a bogus sorites paradox, we must introduce talk about the *correctness* of categorizations. Anyone who applies 'bald barber who shaves all and only those who do not shave themselves' to an individual (whether actual or possible) is making a demonstrable error. In particular, the base step of the barber 'sorites' argument is analytically false. In a genuine sorites argument, there is no demonstrable error. Indeed, each specific step down the slippery slope is obligatory... Knowledge of logic or psychology never puts the sorites sufferer in a position to specify his error and never helps him avoid the mistake in a future sorites. This mis-step is part of our competence, not our performance. It is a forced error and so cannot be traced to inattention, a slip, or confusion."[16]

So here we may ask about which uses of seemingly-soritisable terms are cases of genuine force or obligation, not the results of *incorrect categorizations*. Sorensen's mention of 'bald barber who shaves all and only those who do not shave themselves' suggests the class of "non-bogus" sorites arguments excludes *some* potential members, just as his discussion of 'noonish' suggests the class includes *many* potential members. That formulation he considers is this:

> **P_0**: One second after noon is noonish.
> **P_1**:If 1 second after noon is noonish, then 2 seconds after noon is noonish.
> …
> **$P_{10,000}$**: If 10,000 seconds after noon is noonish, then 10,001 seconds after noon is noonish.
> **C**: Therefore 10,001 seconds after noon (2:36PM) is noonish.[17]

Of this, Sorensen says, "the conclusion is analytically false. Premise 0 is analytically true. Therefore, there must be a conditional in the chain that has an analytically true antecedent and an analytically false consequent. Call this conditional X. … Thus conditional X is the only false

[15] Ibid, p. 11.
[16] Ibid, pp. 33-34.
[17] Ibid, p. 58.

premise. It is an analytic falsehood."[18] On Sorensen's view, just as with Williamson's epistemicism, we do not know *which* conditional it is.

For our original induction formulation, Sorensen too is in camp (B): Claim (P1)-(C) is unsound and deny a premise. He also denies (P2). For the formulations with conditionals/disjunctions/negations, he would maintain that there is at least one one false conditional/disjunction/negation premise. We will, as with Williamson, not know which premise it is.[19]

2.2.3 "Epistemicism"

So in both Williamson and Sorensen's responses to the paradox, we have the denial of either the inductive premise, or one of the conditionals, disjunctions etc., depending on the formulation. They are both in camp (B) for the original induction formulation: claim (P1)-(C) is unsound and deny a premise. This is true of most all the other formulations we looked at as well.[20] They are a subset of camp (B): they deny the "middle stuff", which may be contrasted with denying the base step—that 7,766,000 is a tomato plant. More specifically, with both Williamson and Sorensen, we have a denial of a premise that is construed as equivalent to asserting that premise's negation. This can also be contrasted with meta-linguistic denial, or other non-classical denials, where denying P is not equivalent to asserting not-P.[21] Even more, Williamson and Sorensen say that that particular false premise (whether we know what it is or not) is false because there is a pair of consecutive members in the relevant series where one of

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[18] Ibid, p. 58.
[19] As with Williamson, Sorensen occupies camp (C) for the "line-drawing" formulation.
[20] Again, this is not true of the line-drawing formulation that must be accepted as sound.
[21] See Restall (2013) for a discussion of denial in non-classical systems (including truth-value "gaps" and truth-value "gluts"). See Richard (2008, pp. 47-54) for discussion of metalinguistic denial as applied to a case of sorites-susceptibility, as well as Frege's (1918/1970, pp. 127-130) objections to "denial" being of a different *kind* than assertion.

the two has a particular property, and the other does not. We just may not know which premise is the culprit. Whether we construe this as "forced" belief in analytic falsehoods because of linguistic competence (a la Sorensen[22]), or in principle ignorance about semantic laws and how they take our use and produce meanings (a la Williamson[23]) we have a general kind of response that can be termed 'epistemicism'.[24]

We can also see that epistemicism has some resources to pursue the joint project of responding to the paradox while preserving some commitment to classical logic. This is certainly a chief motivation of the epistemic*ists* we have looked at, as revealed by the quotes above. Epistemicists can then uphold the Principle of Bivalence (PB), the Law of Excluded Middle (LEM), and the Law of Non-contradiction (LNC) fairly straightforwardly. Go back to our example of a sentence about a borderline case: '604,800 is a tomato plant'. On an epistemicist view, when that sentence is used to say something, it either expresses a truth or it expresses a falsity, and it does not do both. Complex disjunctions, conjunctions, and negations built out of that sentence are then either true or false and not both. Those complex sentences we considered above are then not genuine violations of PB, LEM, and LNC. That is, epistemicists need not give up on these principles *as a result of sorites-susceptibility.*[25] The epistemicist's work on the joint-project of responding to the paradox while preserving some commitment to classical logic can then be ironed out fairly neatly. However there are some problems for epistemicists to overcome.

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[22] See Sorensen (2001), pp. 57-67

[23] See Williamson (1994), pp. 205-209.

[24] This would not classify Gene Mills as an epistemicist, though he self-identifies as such. He says that he does not analyze or explain "vagueness" by pointing to ignorance of fully determinate facts. See Mills (2002), esp. p. 404. Mills also does not accept that "every application of a grammatically kosher predicate expresses a property" (manuscript). This separates him from the views of Sorensen and Williamson. I do not think 'epistemicism' is an appropriate tag for his view, and I look forward to learning more about his view

[25] It is still open to the epistemicist to maintain that other considerations give us reason to abandon classical logic, and principles like PB, LEM, and LNC. Considerations about the best explanations for observations of quantum phenomena, embedded conditionals, and others may be cited by epistemicists. One might want to hear more from the epistemicist about why one of their chief motivations for responding to the sorites paradox is to preserve some commitment to classical logic. However, nothing rules out providing such details.

2.2.4 Problems with epistemicism

Above we noted that to respond to the sorites paradox one needed to salvage the pretheoretical intuitions we began with that motivated our premises: for example, the thought that there are tomato plants, that there are non-tomato-plants, and that one second cannot not make the difference. The epistemicist then claims what seems at odds with these intuitions, that one second *does* make the difference between being a tomato plant and not being a tomato plant. More importantly, they are also committed to: one imperceptible part of a hair makes the difference between being bald and not bald, one imperceptible fraction of a nanometer makes the difference between being red and not red, one unit of the weakest currency makes the difference between being rich and not rich, one grain of sand makes the difference between being a heap and not a heap, one millisecond makes the difference between being noonish and not being noonish, and so on. The epistemicist then has the problem of needing to provide some explanation for how we could be so strongly inclined to accept our original intuitions to the contrary.

Moreover, and more specifically, the epistemicist has the problem of explaining away the appearance of an unbelievable asymmetry between our dispositions to use words and the distinctions the words draw. As a matter of actual practical use, no one's appropriate use of 'is a tomato plant' or 'is noonish' seems to cut so fine a distinction. Competent speakers waffle with applying and not applying a predicate (or applying and applying the complement of the predicate), or they change the predicate (e.g., from 'is red' to 'is redish'), or they check some box other than 'the term applies' or 'the term doesn't apply'. With respect to 'is noonish' we can notice that part of the *meaning* of the term includes some undefined tolerance. That is, 'is noonish' *means* something like: is *roughly* around 12:00pm. The appropriateness conditions for

uttering ‘is noonish’ then don’t draw a clear distinction *by virtue of the meaning of the term*. Yet the epistemicists are committed to their being a millisecond that makes a difference in whether the term truly applies.

Were there something like a “natural kind” expressed by all sorites-susceptible terms, one might rely on some theory of “reference magnets”[26] to explain the asymmetry between our dispositions to use words and the distinctions the words draw. For example, many competent speakers do not have particularly nuanced dispositions to use ‘is H_2O’, though it might be thought that use of ‘is H2O’ cuts a fine distinction.[27] The idea is that there are salient natural kinds that our rough uses highlight. One problem with this approach is that paradigm cases of sorites-susceptible terms (e.g. ‘bald’, ‘rich’, ‘heap’, etc.) do not seem to denote natural kinds of this sort; and certainly it is far from obvious that *all* sorites-susceptible terms denote natural kinds. More generally, then, if the meanings of our terms supervene on or determine our use, the epistemicist has the problem of explaining how our terms could have such precise reference classes and meanings when it seems our uses don’t discriminate so finely. It seems that, at least for many of these terms, there isn’t going to be such a natural sharp cutoff unless we decide what it is and use our words accordingly.[28]

2.3: Supervaluationism and Subvaluationism

[26] See Sider (2011, ch. 3) for discussion of the idea of reference magnets, and Lewis (1983, 1984) and Merrill (1980, pp. 75-6) for early groundwork.

[27] This example is just a placeholder for an example of a reference magnet, one more plausible than for paradigm sorites-susceptible terms. If the example can’t be relied upon, then I think the paradigm sorites-susceptible examples can’t be relied upon either.

[28] No doubt there are other problems for epistemicists to overcome. I flag these problems as they are some of the most central.

Supervaluationism is alleged to be the most popular response to the sorites paradox.[29] It also has a kind of structurally similar cousin, subvaluationism that has gotten less attention. We can take each view in turn, beginning with supervaluationism.

2.3.1 Supervaluationism

The *supervaluationist* responds to the sorites paradox by applying the method of supervaluations[30] to sorites-susceptible language.[31] She says *first* that there are many different "admissible precisifications" for a statement-making sentence.[32] For example, for a sentence that predicates 'is a tomato plant' of something, there would be a number of different ways of making it precise, each of which would be perfectly precise and draw a line in our (and any) imagined series of entities between the things that count as "tomato plants" and the things that don't. Intuitively, a precisification for 'tomato plant' is *one* way of making 'tomato plant' precise, which would count the intuitive cases we all call "tomato plants", not count the intuitive cases we all don't call "tomato plants", and decide where to draw the line between the rest. As there would be many potential places to draw the line, there would then be many ways of making the sentence precise, many precisifications. A core supervaluational gloss on the claim that some sentences have many precisifications is: vagueness is semantic indecision. The idea is that our language patterns and use simply are undefined with respect to a range of actual and possible uses.

A second claim the supervaluationist makes is: truth *is* supertruth (truth on all admissible precisifications) and falsity *is* superfalsity (falsity on all admissible precisifications). Put

[29] See Bueno and Colyvan (2012).
[30] See Mehlberg (1958) and van Fraassen (1966).
[31] Though the accolade "the first supervaluationist" is difficult to award, Fine (1975) is often credited. Keefe (2000) calls Fine's paper "the locus classicus of the supervaluationist theory of vagueness" (166).
[32] See Keefe (2000), pp. 154-155.

intuitively, a sentence is true just in case all of the ways of making it precise are true.[33] So, for our 7,766,000 *sentences* from above, each predicating 'is a tomato plant' of our imagined entities, from our heavy-with-fruit tomato plant, 7,766,000, to our mere seed, 1, we would have three classifications for the sentences. The sentence, '7,766,000 is a tomato plant', would be *true*, because all precisifications of 'is a tomato plant' would count 7,766,000, a tomato plant. The sentence, '1 is a tomato plant', would be *false*, because no precisifications of 'is a tomato plant' would count 1, a mere seed. But importantly, for some sentence(s) in the series, there will be some precisifications of 'is a tomato plant' that count the relevant entity, and some that don't. Such a sentence will be *neither supertrue nor superfalse (read: neither true nor false)*.

Looking back at our original sorites argument, we can now illustrate the supervaluationist's response.

> (**P1**) 7,766,000 is a tomato plant.
> (**P2**) If something in our series (*n*) is a tomato plant, then the thing one second before it (*n-1*) is a tomato plant (where $2 \leq n \leq 7{,}766{,}000$).
> (**C**) 1 is a tomato plant.

The supervaluationist can accept (P1), as, on her view, it is supertrue and thus true. She denies (C), as, on her view, it is superfalse and thus false. Her criticism of the argument, then, is that (P2) *isn't true*. In this case she can even say—and does say—that (P2) is false! Every precisification of 'is a tomato plant' will provide some breakpoint in our series. So every precisification of (P2) is false. So (P2) is superfalse (i.e., it is false). So the argument is unsound!

Moreover, for *most all other sorites arguments*, there will be some premise, some

[33] True non-vague sentences are treated as a special case, where they are their own precisification. Questions arise here, no doubt. Take the claim that the number three is prime. This is true. Metaphysical disputes about what the number three *is* aside, there is no unclarity about what is picked out by 'the number three'. Nor is there unclarity about what 'is prime' says. So we say that 'The number three is prime' is true. On supervaluationist theory, that means that every way of making it more precise generates a true sentence. But there are no ways of making it more precise. We can see, then, that some care is needed to precisely specify what it is to be "supertrue". See Linnebo (2009) for discussion of the individuation of numbers and its impact on the metaphysics of number.

premise of the "middle stuff" that she may deny because it is *not true*, not always in cases where she can say it is false. For example, for the formulation with the long series of conditionals, there will be at least one premise that is not true, but that is not false. There will be some conditional of the form 'If n is a tomato plant, then n-1 is a tomato plant' that is *neither* supertrue nor superfalse, and thus neither true nor false. So the supervaluationist can reject some premise because it is not true (though they may not be able to point to it). Though the premise may not be false, the argument wouldn't count as sound.

Supervaluationists, on our induction formulation above, are then also in camp (B). They deny the inductive premise, (P2). It is false, and so we have an unsound argument. It is tempting to say that they are also in camp (B) for the other formulations where they reject the argument. Part of the reason for this temptation is the fact that supervaluationists always deny some premise when they reject a sorites argument. However classifying them as full-time camp (B)'ers is too hasty, as supervaluationists cannot always say that there is an *unsound argument*. If an unsound argument just is an argument that is either invalid or has a false premise, then supervaluationists are not always in this camp; for they do not always say that a premise is *false*. Valid arguments, on their view, would either have a false premise or will have a non-true premise (or will be sound). So then, depending on the formulation and any alternative explication of 'sound' and 'unsound'[34], the supervaluationist's rejection of sorites arguments will waver between camp (B) on one hand, and, on the other, camp (D): claim (P1)-(C) is neither sound nor unsound.[35] We can compare them to other occupants of camp (D) when we discuss nihilism

[34] Of course supervaluationists can develop a notion of soundness that is different. For example, they can say that an argument is unsound just in case it is either invalid or has a non-true premise. For our classification purposes, we can certainly decide what *we* mean by 'unsound', and stick with: either being invalid or having a false premise.
[35] Like epistemicists, supervaluationists do not always reject a sorites argument. They too accept the line-drawing formulation as sound, occupying camp (C).

below. For now, we can see what supervaluationists do by way of pursuing the joint-project of salvaging classical logic.

On the supervaluationists view, then, PB is rejected, as there are premises that are neither true nor false. LEM can be preserved, though not all supervaluationists desire to work towards this.[36] The preservation depends, in part, on the treatment of disjunction in the given logic. On standard accounts, LEM is preserved fairly intuitively as every instance of 'P or not-P' will be supertrue. Consider the sentence about our "borderline case" of a tomato plant: 'Either 604,800 is a tomato plant or it is not the case that 604,800 is a tomato plant'. Every precisification of this sentence will draw a line in the sorites series and thus render the precisified disjunction true.[37] It is thus supertrue/true. LNC can also be preserved. For example, every precisification of a sorites susceptible 'not: P and not-P' will again draw a line in the sorites series, rendering the whole sentence true. Given this and other observations, many questions about the suitability of the resulting supervaluationist logics then ensue, which are out of our purview here. We can observe, however, that this new general response to the sorites paradox does makes some moves to preserve commitment to classical logic, though falling shorter than Epistemicism.

Unsurprisingly supervaluationism inherits its own problems.

2.3.2 Problems with Supervaluationism

As supervaluatists disagree with how best to—and to what extent to—pursue the joint project of responding to the sorites paradox while preserving some commitment to classical logic, different problems arise for different theorists. Generalized problems with "supervaluationism" can be found, though. Here I'll point to a few.

[36] See Burgess and Humberstone (1987), who preserve LNC but abandon LEM.
[37] Disjunctions are odd on standard supervaluationism. More on this in §2.3.2.

To begin with, one may balk at the claim that sorites-susceptible sentences are theoretically precisif*iable* in the way needed. The thought that there seems to be a 'penumbra'[38] of cases for which a predicate doesn't discriminate whether it applies or not, that is set apart from a class of cases that the predicate applies to and a class of cases the predicate doesn't apply to seems to posit more precision than is present with our actual sorites-susceptible language. In short, we then appear to have a trifurcation of cases. This point can be seen from a different angle, from the perspective of the "truth-values" of the sentences containing the predicate. The claim that a sorites-susceptible sentence is either true or false or neither then appears to create a trifurcation and some sharp cutoffs. The series of sentences we have discussed, $S_1 \ldots S_{7,766,000}$, then appears to have some sharp cutoffs in values. This may be thought to fly in the face of one of our original intuition, that we glossed as: one second cannot make the difference between being a tomato plant and not. If that original thought can be similarly expressed as the thought that sorites-susceptible language is tolerant with respect to some particular small-scale changes—that some small scale changes will not make a difference in whether the sentence is true—then the supervaluationist has a problem to overcome. In short, two sharp cutoffs (e.g., between T and N, & N and F) seem just as bad as one (e.g., between T and F).

I have just said a few times that, on the supervaluationist view, it *appears* we have a sharp cutoff or a trifurcation of cases: T, N, and F. The reason I focus on the *appearance* is because the appearance can be and has been challenged. Many think that the description of supertruth is itself sorites-susceptible, which complicates a simplistic picture of a clear trifurcation between T and N and F.[39] For example, a sentence is said to be supertrue if it is true on all admissible precisifications. If 'admissible precisification' has admissible precisifications,

[38] This language goes back to Fine (1975).
[39] See Keefe (2000), p. 202.

then we then have worries about what is often called "higher order vagueness". We then wouldn't appear to have a simple trifurcation between the clear cases, the clear non-cases, and the clear neither-a-case-nor-a-non-case-cases. Metaphorically, there wouldn't be sharp boundaries between the T and N and between the N and F. And so it might be thought that the supervaluationist's discussion of "higher order vagueness" can allow them to avoid the problem that they appear to posit more precision than our sorites-susceptible language has.

Discussions of "higher order vagueness" can result in a quagmire. The point to appreciate now is that, were it true that there isn't a clear trifurcation between T and N and F, we would still end up with *some kind of a trifurcation*. Call it, loosely: a trifurcation of "values". Think of it this way: for our original English sentences, *some* would be definitely true (say the first sentence about the starting clear case), *some* would be definitely false (say the last member about the final clear non-case), and some would be *something else* (where that does not mean "definitely neither true nor false"). Many things may perhaps be said to make this more palatable.[40] The point of this section is just that it is an issue in need of addressing, as it appears to fly in the appearance that many of our sorites-susceptible terms do not discriminate in that way.[41]

There is another problem we can see. The supervaluationist claims exactly what we wanted at the very beginning to deny: that there is a pair of consecutive members in our series such that one is a tomato plant and the other is not. This is the conclusion of the line-drawing formulation, an argument the supervaluationist claims is *sound*. Again, the argument is here:

(**P1**) 7,766,000 is a tomato plant.

(**P2**) It is false that every member, 1-7,766,000, is a tomato plant.

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[40] See Keefe (2000), pp. 202-208 for her discussion.

[41] Higher order vagueness has even been thought by some to be a misnomer. See Wright (2010) who argues that the perception of the "phenomenon" of higher order vagueness results from confusion about the basic phenomenon we begin with. See also Raffman (2010) who argues for de-emphasizing the theoretical importance of discussing "higher-order vagueness".

> (**C**) There is something (n) in our series such that it is a tomato plant, and the thing one second before it (n-1) is not a tomato plant (where $2 \leq n \leq 7{,}766{,}000$).

According to standard supervaluationists, it is a valid argument will all true premises. Now, of course, the principles of supervaluationism do not require treating this argument as valid. However, this is something all supervaluationists have consistently done for any sorites arguments. It does appear to be a valid argument, just as it appears to have a valid argument *form*. In any case, supervaluationists then end up asserting the claim that there is a pair of consecutive members where one is a tomato plant and the other is not (call this a *least tomato plant*). This is something the epistemicist does, as we saw above. However things get worse for the supervaluationist.

On the supervaluationist picture, they assert an existential claim about a "least tomato plant". On their theory, however, there is no one *particular* least tomato plant. According to their theory, if we go through all of the items in our series and ask 'is *this* the least tomato plant?', we will find that none of them is a suitable candidate. So they allow true "existentials" without any members of the domain that satisfy them.[42] This is a major deviation from standard quantification theory and from standard intuitions about existentials. Many think that if there is a true existential, then there must be something that satisfies it. For example, suppose it is true that there is some non-poisonous spider qualitatively indistinguishable in appearance from black widow spiders. If that is true, then by going through all of the spiders there are, we would run into at least one example of a non-poisonous near-duplicate to the black widow. We might run into many, but we would need to run into at least one!

The supervaluationist is apt to respond to this by continuing to assert allegiance to classical logic. For example, when taking validity to be necessary preservation of supertruth,

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[42] See Keefe (2000), pp. 181-8.

supervaluationists can remark that though they abandon PB, every theorem of classical First Order Logic (FOL) is also a theorem of standard supervaluationist logic; and every theorem of standard supervalutationist logic is also a theorem of classical FOL (in the absence of adding any operators, like the 'definitely' operator).[43] The deviations from classical logic then come in the semantics and meta-theory of the logic, which warrants some supervaluationists to claim that their logic is still "fully classical".[44] Figuring out whether a logic is 'classical' can be slippery, and so claiming that a logic does this can be misleading. Enough for our purposes here is to notice the deviations from standard quantificational theory and from ordinary intuitions about what we can call "existentials".[45]

One final problem for the supervaluationist comes when paying attention to an instance of LEM. Take our example of a borderline tomato plant: 604,800. Then consider the sentence: 'Either 604,800 is a tomato plant, or it is not the case that 604,800 is a tomato plant'. On standard supervaluationist theory, this sentence is *true*. Every precisification will draw a precise line in our series, and so is supertrue/true. The sentence is a disjunction. We then have a true disjunction that does not have a true disjunct. Neither '604,800 is a tomato plant' nor 'it is not the case that 604,800 is a tomato plant' are supertrue on supervaluationist theory. Supervaluationists thus reject truth-functionality for disjunction.

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[43] See Cobreros (2011) for discussion. See also Keefe (2000, pp. 175-6) for discussion of the coincidence of supervaluationally-valid and classically-valid theorems (again, in the absence of any new operators).

[44] See Varzi (2007) for some discussion.

[45] This objection is ubiquitous in the literature on supervaluationism. There are challenges to it, which are somewhat beyond our purview here. For example, Keefe argues that the failure to fit intuitive judgments "on certain sentences involving 'there is'" does not show that the treatment is a misrepresentation—if it provides the best general account of "our use of 'there is'" (2000, pp. 182-3). Moreover, one may deny that the intuitive premises motivating the sorites paradox, when understood supervaluationally, genuinely amount to "true existentials" without something satisfying them. Those debates cannot be sustained here.

2.3.3 Subvaluationism

A significantly less popular cousin to supervaluationism is *subvaluationism*. Subvaluationism has a structural similarity to supervaluationism, in two ways. First, it treats vagueness as semantic indecision—maintaining, as does the supervaluationist, that all vague sentences have admissible precisifications. Second, it frames the standardly ordered sorites sentences as starting out true, ending false, and requiring a non-standard treatment for some middle sentence.

A prominent development is Hyde's (1997) subvaluationism[46]. Unlike on supervaluationist theory, truth is not defined as *supertruth*—being true on all admissible precisifications; nor is falsity defined as superfalsity—being false on all admissible precisifications. Rather, a sentence is true just in case it is true on *some* admissible precisification; and a sentence is false just in case it is false on *some* admissible precisification.[47] For subvaluationism, then, the sentences about "borderline cases" are not treated as instances of truth-value gaps, as the supervaluationist has it. They are treated as cases of truth-value *gluts*—they are both true and false. A form of paraconsistent logic may then be developed; the logic that is developed is non-trivially inconsistent. It allows some sentences to be both true and false, though not all sentences are both true and false. The question is: how is this used to respond to the sorites paradox?

Return to our original sorites series from seed to tomato plant. From this we generated our original induction argument.

(**P1**) 7,766,000 is a tomato plant.

[46] Hyde (1997) is careful not to fully endorse the view he discusses and developed. Here and elsewhere I drop qualifying phrases such as, 'the account developed by'. This is for ease of exposition.
[47] See Hyde (1997), p. 647.

(**P2**) If something in our series (*n*) is a tomato plant, then the thing one second before it (*n-1*) is a tomato plant (where $2 \leq n \leq 7{,}766{,}000$).
(**C**) 1 is a tomato plant.

First we must note that, on Hyde's account, validity is necessary preservation of (what the subvaluationist calls) truth. That is to say, an argument is subvaluationally-valid just in case anytime the premises are true in some admissible precisification, the conclusion must also be true in some admissible precisification.[48] This "global validity" is different from what is often termed "local validity". On subvaluationist theory, an argument is locally valid just in case every precisification that counts the premises as true also counts the conclusion as true.[49]

Then, on this account, it is possible that there is more than one precisification that allows the individual premises to be "true". This has motivated some subvaluationists to classify their response as a type (A) response: Claim (P1)-(C) is unsound and deny its validity. This is exactly what Hyde does. He says:

> "It is nothing more or less than a fallacy of equivocation. The rule of modus ponens is only valid if both the conditional premise and the separate supposition of its antecedent can be established as true with uniform disambiguation throughout the premise set. Yet all that is required for their truth in SbV [subvaluationist theory] is that each premise be true on some (not necessarily the the same) disambiguation, and this is enough to guarantee the truth of the conditional's consequent. In the case to hand, the sorites paradox, it is precisely because one equivocates on the disambiguation of the vague predicate (e.g. "heap") involved in the predication to borderline cases that one can claim both premises of the contested inference as true. Modus ponens applied to equivocal premises fails to be truth-preserving, but this is hardly news."[50]

2.3.4 Problems with Subvaluationism

Much can be said about the suitability of subvaluational logic[51], and of paraconsistent logic more generally[52]. Because the subvaluationist is straightforwardly not working to solve the

[48] Ibid, 647.
[49] Ibid, 647, n. 8.
[50] Ibid, 650.
[51] See Varzi (1995). See also Hyde (1997), who discusses the sub-valuational roots in Jáskowski (1969). For recent discussion, see Ripley (2013).

dual-project of responding to the sorites paradox while preserving commitment to classical logic, it can be difficult to know what observations may be justly marshalled as "problems". Taking shots at paraconsistent logics may not effectively frame agreed-upon "problems". There are, however, some features worth pointing to, such that we can move past the discussion of the overall merits of paraconsistent logic as compared with classical FOL with identity.

For example, Hyde's diagnosis of the error in sorites reasoning has a troubling feature that has been discussed by Keefe (2000). Remember that truth for the subvaluationist is simply: truth on some admissible precisifications. Validity was then the necessary preservation of this "truth", without the requirement that there was one and only one precisification that made all of the premises true. Assume every premise of a sorites argument has some precisification or other that is true (for the subvaluationist, that it has all "true" premises). In addition, assume that so long as all of the premises have some precisification or other that is true, the conclusion must have some some precisification or other that is true (for the subvaluationist, that it is "valid"). Given this picture, it would *follow* that the conclusion has some precisification or other that makes it true. So, on subvaluationist theory, the paradoxical conclusion must also be true. If truth *really is* having some (or other) precisification that is true, then a sorites argument that necessarily preserves this feature will *guarantee* that its conclusion is true. Any charge of equivocation, as interesting as it may be, cannot change this. The need then arises for the subvaluationist to alter their theory of truth, or to abandon their diagnosis of the argument as a case of equivocation.[53]

One further feature is worth noticing. Both the supervaluationist and the subvaluationist share the claim that vague sentences have admissible precisifications. Precisifications are

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[52] See Smiley (1993) and Priest (1993, 2008).
[53] See Keefe (2000), p. 199.

admissible if they count the intuitive cases we all call "tomato plants", do not count the intuitive cases we all don't call "tomato plants", and decide where to draw the line between any of the remaining members. For a predicate like, 'is a tomato plant' each precisification will give a determinate cut-off. Then *every* precisification of (P2) above is false. This would make it superfalse, and thus—on supervaluationist theory— "false". It would also make it false on subvaluationist theory, since some precisification is false. But, more importantly, *it would not be made true on subvaluationist theory*. It would not be a "glut". Thus, regardless of their discussions of equivocation and invalidity, the subvaluationist would have the inductive premise being both false and not true—just like the supervaluationist and the epistemicist. On the induction formulation, they would not have a case of a premise that is both true and false, such that they could say something novel about that "glutty" sentence. So, for this formulation, they must take a (B) response: Claim (P1)-(C) is unsound and deny a premise.[54] Thus subvaluationists must, like supervaluationists and epistemicists, make palatable the denying of this premise that had very strong pre-theoretical pull.[55]

2.4: Contextualism

Some theorists who respond to the sorites paradox focus on shifts in *context*. The central idea is that when we are moving through a sorites series, we shift our context for use and thought about the terms, such that we are unable to clearly distinguish between any two consecutive

[54] This of course assumes that all propositions that are both false and not true are to be denied. Of course, this could be denied by the subvaluationist. In that case, our classifying camps could be reformulated, such that camp (B) is: claim (P1)-(C) is unsound because not all premises are true. The subvaluationist would be forced to occupy that camp for the induction formulation; and that is still distinct from the charge of invalidity.

[55] Standard subvaluationists who define validity as necessary preservation of their notion of "truth" are also committed to the conclusion of the line-drawing formulation. Even if they want to take some alternative route and claim that the argument is invalid, they are still left committed to that conclusion as true and not false. That is, the conclusion would not be a glut.

members.[56] So, for our example, our use of 'is a tomato plant' has a different context when we are at the beginning of the series than it does when we are in the middle. This idea, close as it may seem to framing sorites-susceptibility as a case of ambiguity, has been almost unanimously distanced from discussions of ambiguity.[57] The contextualist's thesis is not that sorites susceptibility of a sentence is simply unclarity as to which of a number of distinct propositions that sentence may be used to express. The idea is that the extensions of sorites-susceptible terms are not fully determined by the linguistic meaning of the term, the "standard" contextual features (eg. time, location, who is speaking, who is being spoken to, etc.), and any relevant non-linguistic facts (e.g. facts about what, if any, natural kinds are being picked out).[58] There are then non-standard contextual features that come into play, including, for example, particular psychological states of speakers, interests and purposes the speakers have, and judgmental dispositions of speakers.[59] These non-standard contextual features may change as we move through a sorites series or a sorites argument. Because of these changes, according to the contextualist, we then have changes to either the boundary or to the extension of sorites susceptible terms. We then have either a boundary-shifting contextualism, or an extension-shifting contextualism.[60] On boundary-shifting contextualism, there is a determinate extension for every context of utterance of sorites-susceptible language. This extension shifts its boundary as the contextual features change from context to context. On extension-shifting contextualism, there is no context of utterance of sorites-susceptible language where there is a determinate extension. As more discussion has been given to boundary-shifting contextualism, I will look at a

[56] The contextualist response to the sorites paradox goes back to Kamp (1981).
[57] For discussion, see Åkerman (2012), pp. 471-2.
[58] Ibid, 472.
[59] Ibid, 473-4.
[60] See Åkerman and Greenough (2010) for the coining of these terms, and this distinction. See Raffman (1994, 1996) and Shapiro (2003, 2006) for defenses of extension-shifting contextualism, and Graff (2000) and Soames (1999) for defenses of boundary-shifting contextualism.

particular manifestation of that view to give some more detail on how the contextualist can respond to the sorites paradox. In particular, I will look at Fara's contextualism, which has garnered considerable serious discussion.

2.4.1 Fara's Contextualism

Fara's contextualism points to our *interests* as those non-standard contextual features that come into play. They are what is needed—in conjunction with the linguistic meaning, the standard contextual features, and the relevant non-linguistic facts—to fix the reference class of sorites-susceptible expressions. On this view, for every context, and for every sorites series, there will be a point at which some predicate goes from truly applying to not truly applying. For example, there will be one second such that something goes from not being a tomato plant to being a tomato plant, one cent such that someone goes from being rich to not rich, and so on for all the other examples. As our interests change, which they ever so slightly do, the non-standard contextual features help to determine a different reference class. There is, then, for every context of utterance of some sorites-susceptible sentence, a clear truth-value: true or false.[61]

Returning to our induction formulation, Fara then denies (P2). It is denied because it is false. Given that our basic taxonomy classifies views in virtue of their response to the induction formulation, this puts Fara in camp (B) with many others: Claim (P1)-(C) is unsound and deny a premise. Fara's general response gets more interesting with the series of conditionals formulation, which is worth noticing. Here it is again:

> (**P1**) 7,766,000 is a tomato plant.
> (**P2**) If 7,766,000 is a tomato plant, then 7,765,999 is a tomato plant.
> (**P3**) If 7,765,999 is a tomato plant, then 7,765,998 is a tomato plant.
> ...
> (**P7,766,000**) If 2 is a tomato plant, then 1 is a tomato plant.

[61] See Fara's work, published under Graff (2000), p. 75.

(**C**) 1 is a tomato plant.

Of course, a premise or inference must be denied, if the argument is going to count as unsound. Because there is a cutoff for every context, every context will have some premise or other that is false—the antecedent will be true while the consequent is false. It might be tempting to call this a "sharp cutoff", though Fara doesn't. As Fara puts it:

> "On any sorites series for any vague expression, I believe that somewhere in the series (not where we're looking) there is an object that possesses the property expressed by an utterance involving a vague expression right next to an object that lacks that property. I am reluctant, however, to call the proposed boundary between the property possessor and the property lacker a sharp boundary, since as I have stressed, this is but a metaphor and I have as much right to the metaphor as does the proponent of gaps or degrees. I would cash out the metaphor in the following way: the boundary between the possessors and the lackers in a sorites series is not sharp in the sense that we can never bring it into focus; any attempt to bring it into focus causes it to shift somewhere else."[62]

The thought, then, is that there are changes in the context and in particular, changes to our *interests*. Our interests are changing as we move to find the boundary for the last or first X in a sorites series; and that last or first X will always evade us when we try to locate it. There will, for every context, be a boundary between the predicate's truly applying and not truly applying (and between the sentence's being true and being false). So "the false premise" for the conditional formulation (and for a few other formulations) will be moving around on us.

The response to this conditional formulation also lands Fara in camp (B): Claim (P1)-(C) is unsound and deny a premise. Like the epistemicists we looked at, Fara denies some premise for all sorites arguments; and, like epistemicists, her denying them is construed as asserting that they are false.[63] Even more like the epistemicists we discussed, for the conditional and disjunction and negation formulations, we simply do not know which premise is false. There is

[62] Ibid, 75-6.
[63] Ibid, 75.

always some false premise, because, for every context, there is a consecutive pair of items in a sorites series, such that the relevant property expressed by the predicate holds of one but not the other of two consecutive members of the series. Fara's view is then *very* similar to the epistemicisms we looked at. One central difference is that, instead of claiming that our collective uses of a predicate—taken together, and with the help of semantic laws—determine a meaning and *one* precise extension for sorites-susceptible terms, Fara claims that non-standard contextual factors (like, our interests) can ever so slightly shift from context to context; and this shifts the boundary delineating the extension of our sorites-susceptible terms. This results in the possibility of many different boundaries and thus many different extensions for a sorites-susceptible term, though there is no more than one for each context of use. These are the shifting sands that inspire her paper's title.[64]

Given such a close similarity to epistemicism, the problems for which we discussed above, contextualism faces similar problems.

2.4.2 Problems with Contextualism

Above we discussed the problem for epistemicism that there seems to be an unbelievable asymmetry between our dispositions to use words and the distinctions the words draw. Our dispositions are not so finely tuned to such small-scale changes, as happen in a sorites-series; yet the epistemicist claims that our sorites-susceptible terms draw precise boundaries for every occasion of use. The boundary-shifting contextualist inherits this problem; and the manifestation of the problem takes on more detail, as the contextualist develops their respective theory of the non-standard contextual features allegedly accounting for the variations in boundary and

[64] Like many other views we've seen, Fara's contextualism must accept that, in every context, the line-drawing formulation is sound.

extension. For Fara, the non-standard contextual features are our *interests*. So the objection becomes: there seems to be an unbelievable asymmetry between our interests and the fine distinctions our words draw.

Among Fara's examples is that of driving through Iowa and remarking, "wow, that's a lot of corn". Fara then goes on to "analyze" 'a lot' to mean: "significantly more than some norm".[65] She then notes that norms may shift such that what is typical when I utter the sentence in Iowa is different from what is typical when I speak somewhere else. We then have a purported example of contextual shifts resulting in a boundary shift.

Given this example, one might wonder whether a shift from driving through Iowa to driving through say, Virginia, could result in either a sufficiently fine-grained *context* or a sufficiently fine grained *context-shift*. Let's start with thinking about the context. It may be salient to the conversational partners in Iowa that Iowa is a rich climate and an extremely popular location to cultivate corn, and that Virginia is less so. Much more detail about the agricultural prowess of these states may be salient as well. The issue is whether, even in specific cases of contexts that we can carefully detail, there remains an unbelievable asymmetry between our dispositions to use words and the distinctions the words draw. It seems that our Iowa-context-dispositions to use 'a lot of corn'—even in the Iowa-context where we have the "typical Iowa field" as a comparison class—are less discriminating than what is needed for 'a lot of corn' to render a cut-off for members in a large sorites series. We could, of course, imagine a 9-million member sorites series, that begins with a 300-acre field with only one corn stalk in that field, and ends with that 300-acre field full with 9 million stalks.

[65] Ibid, 66.

Moreover, it doesn't seem that the changes that account for the *shift* from a particular field in Iowa to a particular field in Virginia could alter the context enough to *re*-establish such a fine-grained distinction. Surely what counts as "a lot of corn" for an average farm in Virginia pales in comparison to what counts as "a lot of corn" for an average farm in Iowa. There are, of course, clear candidates of farms that would count as large relative to the average Virginia farm and not large relative to the average Iowa farm. The issue is whether driving to a new place, mentioning the comparison class of "the average Virginia corn field", recalling the USDA publications on corn production, and so on, could change the conversational record enough to result in our manifesting a sufficiently rich set of new dispositions to use 'a lot of corn'. Adding to the conversational record in this way can surely change whether we assent to apply the predicate to some particular corn field; however those changes do not seem to have the finesse needed to *re-draw* such a fine distinction among our 9-million member series. At least, this doesn't seem to fit with any changes to our dispositions to use the words; and, as discussed with epistemicism above, it doesn't seem plausible that all sorites-susceptible terms pick out a natural kind that our uses highlight.

In fact, this problem of the asymmetry between our dispositions to use words and the distinctions the words draw is more difficult for the boundary-shifting contextualist than it is for the epistemicist. The epistemicist has the option of saying that *all* of our varied uses—taken together—gets us sufficiently detailed input for semantic laws to generate a precise extension for 'a lot of corn'. It may be thought that many speakers using the phrase over a number of different occasions might—taken together—be sufficiently rich input for a semantic law to somehow generate such a fine distinction. However, if one is forced to rely on particular changes in the

interests of a speaker (or other non-standard contextual features) as the driving force for the relevant context shifts, the changes *there alone* must re-draw the cutoff.[66]

2.5: Nihilism

On one definition, semantic nihilism[67] (henceforth, nihilism) is the thesis that "vagueness must be eliminated before semantic notions (truth, implication, and so on) can be applied".[68] This thesis fits with the idea that a logically perfect language may be developed and used in place of natural languages—at least, for cases of what we might call "serious inquiry". More will be said about this view and its roots in Chapter 3, where I argue that nihilism merits serious consideration. For now, we can see what a nihilist solution to the sorites paradox is.

2.5.1 Semantic Nihilism

Going forward with the definition of nihilism above, we can see how the nihilist responds to the paradox. If cases of sorites-susceptibility exemplify "vagueness", then semantic properties (e.g. being true, being false, being valid, being sound, being an implication, and so on) do not apply to the sentences used. Since *being invalid* and *being unsound* are also semantic properties, a straightforward response may be given. Nihilists are then in camp D: Claim (P1)-(C) is neither sound nor unsound.

The nihilist is then quite different from other occupants of camp (D). We remember that—given *our* use of 'unsound'—supervaluationists, on some formulations of the sorites paradox, occupy camp (D). On the conditional formulation, not all premises are true. However,

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[66] The objection I discuss here is about the relation between our *dispositions to use words* in a context, and *the distinctions the words draw* in that context. It is closely related to the objection that, if you hold a particular context fixed, you still have sorites-susceptibility. See Åkerman and Greenough (2010) for discussion.
[67] For examples of contemporary defenses of nihilism see Braun and Sider (2007) and Ludwig and Ray (2002).
[68] See Braun and Sider (2007), p. 133.

no premises are false. This is because there is no premise that is false on all precisifications. The conditional sorites argument (given our definition of an unsound argument as one that is as either invalid or has a false premise) would count as neither sound nor unsound for the supervaluationist. However, the supervaluationist doesn't think that classical first order logic with identity, for example, fails to apply to sorites-susceptible language. They simply take a tricky way out of the argument. Given our definition, they must say it is *non*-sound, just like the nihilist. However, and unlike the nihilist, they can also say that the conclusion is false and the base premise is true. So they clearly apply semantic notions to sorites arguments.

Nihilists are different. They refuse to apply semantic notions to cases of sorites-susceptibility. This includes all premises and the conclusion, and the argument taken as a whole. As most of our natural language is sorites-susceptible, there are some problems that may be discussed.

2.5.2 Problems with Nihilism

There are a variety of objections to nihilism that I will discuss in detail in Chapter 3. Here I will flag two central concerns.

First, it may be objected that by refusing to apply notions like 'true' and 'false' to the use of some sentences, the nihilist is failing to recognize the pre-theoretical phenomenon we began with. For example, when we formulated a sorites argument, we made the claim 7,766,000 is a tomato plant. We then denied the conclusion that 1 is a tomato plant. While working to appreciate these points, some simply gloss the first premise as "true", and the conclusion as "false". The mere seed does not count as "being a tomato plant", and the fully developed plant does count as "being a tomato plant". Predicating 'is a tomato plant' of these paradigm cases

surely gets it right (for the clear cases) and gets it wrong (for the clear non-cases). Then, the objection goes, the nihilist needs to account for the aptness and in-aptness of the use of many sorites-susceptible sentences. It seems—or at least, it seems to many—difficult to capture the aptness without relying on *truth-aptness* and *being true* and *being false*.

Second, it seems that applying semantic notions (e.g. 'is valid', 'is true', and so on) is necessary for using a logic to model or represent our reasoning. Since a very large portion of natural language is sorites-susceptible, it may be objected that a consequence of nihilism is that logic is irrelevant to most of our reasoning. This may appear at odds with our actual practice. We seem to give genuine arguments with sorites-susceptible language. We also seem to be able to distinguish good and bad arguments carried out with sorites-susceptible language. The nihilist then needs to do justice to these appearances, or to explain them away.

2.6: General Type (C) Responses

So far, as we've discussed different formulations, we've seen occupants of camps (A)-(D). The camp most neglected is camp (C). We noted that for many theorists, they have to accept the line-drawing formulation as sound. This is to occupy camp (C), but only transiently. It is transient because they may occupy other camps for other formulations, including our main induction formulation. One could work to occupy camp (C) for our induction formulation as well. This kind of response to the paradox is worth a few words.

2.6.1 An Example of a General Type (C) Response?

It is difficult to find a type (C) response clearly advocated for the induction formulation. In Hyde's discussion of responses to the sorites paradox that "embrace the paradox" and "accept

it as sound", he classifies Dummett (1975) and Wright (1975) as examples.[69] Much can be said about classifying theorists who respond to the sorites paradox as "accepting it as sound". For an example, we can look at Dummett. One of the central conclusions Dummett (1975) comes to is:

> "What is in error is not the principles of reasoning involved, nor, as on our earlier diagnosis, the induction step. The induction step is correct, according to the rules of use governing vague predicates such as 'small': but these rules are themselves inconsistent, and hence the paradox. Our earlier model for the logic of vague expressions thus becomes useless: there can be no coherent such logic."[70]

I say that this does not so easily fit the mold of a type (C) response to the induction formulation, a response that classifies our induction argument above as sound. Dummett provides some clarity when using 'vague predicates'; he notes that he is discussing "observational predicates where non-discriminable difference is non-transitive".[71] Dummett then suggests that the rules of use for vague predicates run into inconsistency, and that this is made salient when we consider a sorites argument. The induction step is justified by reflecting on the rules of use. The rules of use also justify the base step. We end with a member of the series where the rules of use require applying and not applying a predicate—seemingly without any context shift. So, as he frames it, the rules of use for vague predicates are inconsistent. Pointing this out, however, is a far cry from claiming that, for any particular sorites argument, the base step expresses a true claim, the induction step expresses a true claim, and the argument is valid. In fact, given that Dummett concludes by saying that there can be no coherent logic for vague expressions, we might be apt to put him in camp (D) with the nihilist.

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[69] See Hyde (2011a). There Hyde also mentions Unger (1979b) and Wheeler (1979). Unger (1979b, pp. 119-122) and Wheeler (1979, pp. 164-172) focus on sorites arguments for the existence of "ordinary things" and "middle-size physical objects", respectively.
[70] See Dummett (1975), pp. 319-320.
[71] Ibid, 319.

We would want to ask some follow up questions, though. For example, we might ask: if there is no coherent logic for vague expressions, then may we coherently apply semantic notions like 'valid' and 'true' to formulations of the sorites paradox? It could easily be responded that we cannot apply those notions to our formulations. It could be responded that when we focus on the rules of our language practices, and—in light of those practices—we put forth the base step and an induction step of a sorites argument, we are engaging in *idealization* of our language practices, part of which is to assume that there are semantic notions present, and that the practices can be made coherent. Such a response, then, would be that these practices *cannot* be made coherent, and that the reason there is no coherent logic for vague language is because semantic notions do *not* apply. Such a view is clearly nihilist and fits in camp (D).[72]

Nevertheless, a view could be developed that is genuinely an instance of camp (C) for the induction formulation. On such a view, the following argument is sound. That is, both premises are true, and the argument is valid. Thus the conclusion is true.

(**P1**) 7,766,000 is a tomato plant.
(**P2**) If something in our series (*n*) is a tomato plant, then the thing one second before it (*n-1*) is a tomato plant (where $2 \leq n \leq 7{,}766{,}000$).
(**C**) 1 is a tomato plant.

2.6.2 Problems with a General Type (C) Response

It is a trivial point that we could start with the same sorites series, and formulate a second argument, distinct from the one just seen above.[73] Consider this argument.

(**P1**) 1 is not a tomato plant.
(**P2**) If something in our series (*n*) is not a tomato plant, then the thing one second after it

[72] This classifying is difficult, and to forge ahead we might want greater clarity on what it is for rules of use to be "inconsistent". Surely there is a use of 'inconsistent', such that we would only apply it to sets of claims. Claims seem to have semantic properties like being true and being false.
[73] Hyde (2011a) makes this point.

($n+1$) is not a tomato plant (where $1 \leq n \leq 7{,}765{,}999$).
(**C**) 7,766,000 is not a tomato plant.

The problem is that occupying camp (C) for any induction formulation requires considering both the first and second arguments above as sound. Yet the first premise of the first argument is inconsistent with the conclusion of the second argument, and so too with the first premise of the second argument and the conclusion of the first argument.

There are options to try to mitigate this. They are, however, pretty dismal. The first option would be to attempt to avoid the contradictions. One way to work to avoid the contradictions is to only count one of the two arguments as sound. Of course, a principled reason must be given for why one of the two arguments is sound and the other is not. Both arguments from the pair above seem to be well-motivated by our practice for using sorites-susceptible terms. Moreover, one would still be committed to the implausible conclusion of the one sound argument! The conclusion of that sound argument would seem very much at odds with our language practices. Suppose we took the first of the two above as the one sound argument. In that case, '1 is not a tomato plant' is clearly condoned by our language practice and by my description of 1; and this is so even if we don't want to call the second argument sound. Even more, and with fear of piling on too much, such a generic camp (C)'er would still need to take another response for the not sound argument.

Another way to attempt to avoid the contradiction is to claim that assertorically uttering, '1 is a tomato plant' is not contradictory to assertorically uttering, '1 is not a tomato plant'. Perhaps ambiguity may be appealed to, or variation in context. Then both arguments are sound, but we have a shift in meaning. This strategy, however, is not so promising. It is hard to imagine a context and disambiguation for 'is not a tomato plant' such that 'is not a tomato plant' may be

applied to *all* items in our series. This is even less plausible when—simultaneously, and seemingly within the same context—there is a disambiguation for ‘is a tomato plant’ that also applies to *all* members as well.

The second option for mitigating the baggage of occupying camp (C) for the induction formulation is to accept the many contradictions. This strategy seems quite implausible as it flies in the face of our original intuitions we used to motivate a sorites argument. When we began our formulation of the sorites paradox, we noted the plausibility of the base step and of the induction step; we then noted the absurd conclusion. It is unclear how one can account for the seeming-absurdity of the conclusion and the plausibility of the base step if both genuinely count as true. The problem, then, is to do justice to the pre-theoretical intuitions that we used to formulate a sorites argument.

2.7: Conclusion

One striking feature of all responses to the sorites paradox is that they have significant problems to overcome. The commitments taken on bring major costs. This is the real mark of a paradox. As all responses have their problems, and as the claims needed to resolve the paradox require sometimes drastic revision to ordinary intuition, it can be difficult to marshal arguments in favor of one position over others.

The concern of this dissertation is with responses that preserve classical logic together with its standard semantics and meta-theory. This provides us with a focus on comparing views that do not share widely different commitments, and with an ability to adjudicate between positions without getting bogged down in more general amounts for or against the use of a particular logic. Our comparison class of competing views then consists primarily of

epistemicism and nihilism.[74] As nihilism has received considerably less serious treatment, it is worth seeing some benefits of the view. We may now turn to that.

[74] I say "primarily", because boundary-shifting contextualists can also be discussed under this umbrella. Some of the arguments given against epistemicism (in Chapter 4) may also be extended to boundary shifting contextualism.

Chapter 3: Nihilism Merits More Consideration

3.0 Introduction

Nihilism has been attributed to Frege, and considered by some to be an "old and attractive view".[1] However, its supporters are in the minority. Despite there being many volumes released on vagueness and the sorites paradox, there is little discussion of nihilism.[2] Philosophers writing on vagueness often either dismiss nihilism or simply fail to discuss it when considering candidate solutions to the sorites paradox. Williamson's widely influential defense of the epistemic view does devote a chapter to what he calls "nihilism". Yet he calls it a "desperate view" saying that "[t]o classify all vague expressions as empty may amount to intellectual suicide"[3], while failing to consider serious responses a nihilist could make to such cavalier claims. Keefe and Smith's (1996) seminal reader on vagueness has no articles systematically defending nihilism.[4] Keefe and Smith allot space for articles discussing ontic vagueness and vague identity, the defenders of which are very much in the minority. Hyde's (2011a) SEP article, "The Sorites Paradox," mentions the "Ideal Language Approach", which he glosses as "denying that logic applies to soritical expressions". Yet he quickly dismisses the position, saying only, "[i]f logic is to have teeth it must be applicable to natural language as it stands. Soritical expressions are unavoidable and the paradox must be squarely faced," which confusingly suggests that the approach isn't a way to clearly face the problem. More recently,

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[1] See Braun and Sider (2007), p. 133.
[2] See Keefe and Smith (1996), Graff and Williamson (2002), Beall (2003), Dietz and Moruzzi (2010), Cintula, Fermüller, Godo, and Hájek (2011), Ronzitti (2011) Abasnezhad and Akiba (2014), and Abasnezhad and Bueno (forthcoming).
[3] Williamson (1994, p. 165).
[4] There are two noteworthy papers relevant to nihilism in this volume. The first is Russell's (1923) piece that I say flirts with semantic nihilism, though doesn't state it clearly or defend it. The second is Sainsbury's (1996/1990) piece that is a far cry from stating or defending semantic nihilism; yet it does provide some discussion of the idea of "boundarylessness" that may be adapted by the nihilist. See Ludwig and Ray (2002) for use of Sainsbury's idea of "boundarylessness" in the development of a nihilist view.

Rosenkranz (2010) —when discussing "the *nihilists*"—says: "[n]either nihilist position seems the least attractive, as our everyday vocabulary is shot through with vague terms, and there are aspects of how reality strikes us that we could not talk about at all if we were denied the use of such terms".[5] This assumes that the nihilist must say that we cannot effectively use vague terms. This is something a nihilist need not maintain. Finally, and more generally, nihilism has very little presence in the literature on the sorites paradox.[6]

I think this overall silence on nihilism is undeserved. Here I argue that nihilism merits serious consideration. In the first section, I give more details on the nihilist's response to sorites arguments. Its coherence with classical logic and platonist interpretations of number truths is discussed in the second, as are advantages it gains over supervaluationism on these fronts. The third discusses major objections to nihilism, and surveys responses open to the nihilist. These are the objections (i) that we do say true things with vague language, (ii) that nihilism is itself either not true or incomprehensible, (iii) that we do mean things with vague language, (iv) that the nihilist fails to set a standard for the application of logic, and (v) that nihilism renders logic irrelevant to our actual reasoning. In the course of responding to these objections, I draw out advantages the nihilist has over other contender views.

This chapter enables me to show how the nihilist may face the main challenge for responding to the paradox (previously discussed in §1.1.2.4). This was the challenge of: (I) upholding the pre-theoretical intuitions that drive the paradoxical arguments, and (II) avoiding

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[5] See Rosenkranz (2010), pp. 167. There Rosenkranz focuses on the line-drawing formulation, and just on Dummett (1978) and (Unger (1979).

[6] There are *no* book-length defenses of nihilism, and the examples of serious discussions of nihilism are few. Serious discussions of nihilism (or, at least, serious discussions of views that are in some way importantly similar to nihilism) include the following: Dummett (1978), Unger (1979a, 1979b, and 1979c), Quine (1981, esp. pp. 91-92), Heller (1990), Ludwig and Ray (2002), Braun and Sider (2007), Beall (2010), and Gomez-Torrente (2010). As for more historical cases, nihilism has been attributed to Frege's work, especially his (1997/1903). Yet I think Frege's work is not so easy to pin down as nihilist. And moreover Russell (1923, esp. pp. 88-89) also flirts with nihilism, though does not systematically defend it.

the implausible commitments of the conclusion and its seeming-contradiction to other plausible claims. I conclude that nihilism merits some serious consideration. Though I do not argue for nihilism's truth, one important upshot of this chapter is that it allows me to explain some important nihilist tools, tools that will be employed in my response to the paradox in Chapter 4.

3.1: More detail on semantic nihilism

3.1.1 What is semantic nihilism?

I said in Chapter 2 that, according to one definition of nihilism: "vagueness must be eliminated before semantic notions (truth, implication, and so on) can be applied". Braun and Sider (2007) put it that way.[7] Many claim that the phenomenon driving the sorites paradox is that of vagueness.[8] So, when responding to the sorites paradox, many provide some thesis or theory "about vagueness" that helps them give a response to the sorites paradox. One might thus expect or require 'vague' or some synonym to show up in a thesis or theory that is used to respond to the sorites paradox. We need not accommodate the idea that there is a phenomenon clearly exemplified by the minimally enumerated cases that are called 'vague'. What we can do is take 'vague' to pick out the relevant candidates we wish to discuss when talking about sorites-susceptibility. This should be of little controversy, since those giving theories of "vagueness" — those who take it to be an underlying phenomenon—would take it to be present in cases of sorites-susceptibility. As discussed earlier (§1.3.3) I am simply using 'vague' to mean sorites-susceptible.

We can then say that nihilism is the thesis that if some discourse or thought is vague, then, strictly speaking, semantic properties like *being true*, *being false*, *being valid*, *being*

[7] Braun and Sider (2007) p. 133.
[8] See Hyde (2011a).

invalid, and *being an implication* do not apply to the discourse or thought.[9] This removes 'before semantic notions *can* be applied' in favor of 'do not apply'. This is an improvement in expression, as one can certainly apply semantic properties to things that do not have them. The crucial claim of the nihilist is that they *do not apply*. Given Bob as a borderline case of baldness, the nihilist would say that the sentence 'Bob is bald' does not have the property *true* or the property *false.* Applying it, which we can do (say, with: 'Bob is bald' is true) gets us falsity—so long as 'true' is not vague. Moreover, I use 'strictly speaking' to highlight that the nihilist isn't and (I say) shouldn't be committed to the claim that we must not *speak* as though such properties applied. Nihilists need not take a revolutionary approach to how we speak.

Nihilism was the classical response to the sorites paradox around the advent of the modern logic of the late 19th century. Although the sorites paradox was discussed in ancient Greece and in later antiquity, the advent and rise of the modern formal logic of the late 1800's provided the tools for a clearer articulation of the problems the sorites paradox gives rise to.[10] And moreover, as I'll explain and argue for in Ch. 4, the classical nihilist response provides part of the foundation for a good response to the sorites paradox and its related problems.

3.1.2 More detail on the nihilist's response

Consider the argument.

(**P1**) 7,766,000 is a tomato plant.

(**P2**) If something in our series (*n*) is a tomato plant, then the thing one second before it (*n-1*) is a tomato plant (where $2 \leq n \leq 7{,}766{,}000$).

(**C**) 1 is a tomato plant.

To better understand the nihilist response, we can begin by looking at a common and

[9] Compare this to Braun and Sider (2007) p. 133, Frege (1997/1903) p. 259, and Ludwig and Ray (2002), p. 446.
[10] See Williamson (1994, pp. 8-35) for the history of discussions of the paradox. See also Moline (1969) for more substantive discussion of its early development.

intuitive response to the following.

(**premise 1**) Turn off the back lights.

(**premise 2**) Why are the deer eating all the tomatoes?

(**conclusion**) Please drape that tarp over the goat house.

If someone were to ask if (premise 1)-(conclusion) is a good argument, we should balk. Clearly that is not the kind of thing with properties like *being invalid* or *being unsound*. Neither (premise 1) nor (premise 2) is true (or false). It is then not possible for (premise 1) and (premise 2) to both be true while (conclusion) is false. So (premise 1)-(conclusion) is neither invalid nor unsound (and neither valid nor sound). This easily illustrates that the using of *sentences alone* does not constitute the presentation of an argument, even if one also uses: '(premise 1)', '(premise 2)' and '(conclusion)'.

Similarly to our response to (premise 1)-(conclusion) above, the nihilist doesn't charge the argument (e.g., (P1)-(C)) with being invalid or being unsound. That is, she doesn't claim that either (P1) or (P2) is false; and she doesn't claim that it is possible for (P1) and (P2) to both be true while (C) is false. She claims that the properties of *being true*, *being false*, *being valid*, *being invalid*, *being sound*, *being unsound*, and *being an implication* do not apply. So on the nihilist view, (P1)-(C) does not constitute an argument, since arguments are either valid or invalid.

The nihilist does say that what we do have with (P1)-(C) is a group of non-truth apt *sentences*, some of which may be *appropriately used*. So when we focus back on what looked to be a contradiction between (P3) and (C), we can make two points. The first point is that, with arguments, the acknowledgment that the argument is valid and has true premises commits us, on pain of irrationality, to accepting the conclusion. But because we have no argument with that group, we aren't compelled in this way to accept (C). Put another way, (P1)-(P2) do not *imply*

anything. Even more, accepting the *appropriateness* of (P1)-(P2) does not even in some broader sense *commit* us to agreeing that such typical uses of (C)—'1 is a tomato plant', are appropriate. The second point is that, setting aside whether we are rationally compelled to accept (C) (or more generally, somehow committed to the appropriateness of (C)), we wouldn't have a genuine contradiction between (C) and (P3). Only propositions (or truth-apt sentences) can contradict one another.

Further, in response to the point that there are many different stretches of natural language that may be used to formulate the paradox, the nihilist can claim that, in those cases too, *being true* and *being valid* (and so on) wouldn't apply, and that there wouldn't be an argument. That is, the same is true for sentences including 'is bald', 'is a butterfly', 'is generous', etc. So the nihilist would be able to respond to all presentations of the paradox that focus on different stretches of natural language, rather than just the one with 'is a tomato plant' above.

Even more, in response to the variety of different *formulations*, the nihilist may say that *all such formulations* wouldn't exhibit properties like *being true* and *being valid*, and wouldn't exhibit arguments. This holds whether we have the induction fomulation, the conditional formulation, the line drawing formulation, or others. So the nihilist would be able to respond to all of the various formulations that seem to rely on different logical moves.

Finally, in response to the point that it seems possible that the paradox can be *thought*, the nihilist may say that such *thoughts* (or any kind of mental state of "belief" thereof) wouldn't be truth-apt. Any relevant collection of thoughts wouldn't amount to the entertaining of or the thinking about a genuine argument. So the nihilist would be able to reply to both linguistic and mental presentations of the paradox.

Thus nihilists can work to accomplish (II)—avoiding commitment to the implausible conclusions and any contradictions between them and other plausible claims. So far, though, we have *not* yet seen how the nihilist can accomplish (I)—salvaging our pre-theoretical intuitions that drive the paradoxical arguments. I think the best way to see this is by observing how the nihilist may respond to some of the major objections to their view. This will be seen below in §3. Before we consider those major objections to nihilism, let us consider some benefits of the view.

3.2: Some benefits of nihilism

As we will see, nihilism coheres well with classical logic and with platonist readings of formal number theory. This counts in its favor, especially since—again, as we will see—not all of the competing responses to the paradox do.

3.2.1 Cohering with platonist readings of number truths

The Least Number Principle (LNP) is provable in formal number theory. The LNP tells us that if some natural *number* has a *property*, then there is a least or smallest *number* that has that property.[11] So, if we say that *the number 7,766,000* has the property of *being the number of a tomato plant in our ordered series*, then it would follow that there is a least *number* that has this property. This is something a platonist may wish to say about any member of an ordered series, and any alleged property. So there would be a cutoff in the series of natural numbers, *and* in our series between something that isn't a tomato plant and something that is, corresponding to

[11] Some formalists about the philosophy of mathematics may reject this, saying that formal number theory doesn't tell us this, but only allows us to write: '$\exists xB(x) \Rightarrow \{\exists m(B(m) \wedge \forall x(x < m \Rightarrow \neg B(x)))\}$'. That is, one might say that formal number theory only gives us rules and axioms to generate formulas that do not *mean* the things we standardly use natural languages like English to explain them with. Such a response would avoid the problem I am currently explaining. Formalism has its own costs, though.

the *least number* that has the property.[12] But this seems to contradict (P2), which we have already motivated. So *if* we agree that the phrase 'numbers a tomato plant in our ordered series' expresses a property that is held by the number 7,766,000, *and* we uphold our pre-theoretical intuitions driving (P2) above, *then* we appear pushed to reject the LNP.

It would be very surprising if considerations about stretches of natural language like, 'numbers a tomato plant in our series' and 'numbers a bald member in our series' genuinely challenged or undermined our good mathematics. So something must be said about this mere appearance; And, I say, seeing how succinct a nihilist's response to this challenge goes provides an important comparison for another response, the supervaluationist.

3.2.1.1 How nihilism coheres

To begin to see how nihilism fares here, we can notice that the LNP doesn't come with a corresponding exhaustive list of properties of numbers (nor do its provable equivalences). Even more, formal number theory is not committed to: our typical uses of 'numbers a tomato plant' express a property of numbers—the kind of thing that all numbers either have or lack but don't both have and lack. Why would it be committed to that empirical claim? Thus the nihilist can say that phrases like 'numbers a tomato plant in our series' *don't* express properties of numbers. We can now go on to see how this response relates to the formulation of the thesis of semantic nihilism that we've considered so far.

We've already seen that the nihilist thesis says that semantic notions don't apply when there is vagueness. So if we are speaking or writing (or thinking), the relevant groups of sentences (or thoughts) aren't truth-apt, and don't reflect or constitute arguments. Thus '7,766,000 numbers a tomato plant in our series', given its vagueness, doesn't state a truth or

[12] The first person to draw this connection to formal number theory was Cargile (1969), though there he simply framed the sorites paradox *in terms of* formal number theory. Here I frame the paradox more generally, though do point out some ways in which the paradox can be used to challenge interpretations of formal number theory.

contribute to an argument. But why? The nihilist may say that to express something truth-apt about a number, one needs to say of some number that it has some property. '7,766,000 numbers a tomato plant in our series' doesn't do this. Another way to see this is: for a semantic nihilist, the notion of expressing a property *just is a semantic notion*. So the nihilist has a very straightforward response to the above challenge to the LNP. Other responses to the paradox have a straightforward response as well (e.g., epistemicism). However, things are not so smooth with the supervaluationist. As supervaluationism is alleged to be the most popular response to the paradox[13], pointing this out provides more reason to give nihilism serious treatment. We may now turn to this.

3.2.1.2 Supervaluationism incur a cost

As we saw in Chapter 2, the core commitments of supervaluationism are (i) that there are many different "admissible precisifications" for a statement-making sentence, and (ii) that truth *is* supertruth (truth for all admissible precisifications) and falsity *is* superfalsity (falsity for all admissible precisifications).[14]

Supervaluationists can respond the same way that the nihilist does, by denying that the predicate expresses a property. They can say: *if* a predicate has many different admissible extensions, *then* that predicate does *not* express *a property* of numbers. But I say, such a response, given their view, incurs extra costs. Namely, they must incur the cost of abandoning a platonic readings of formal number theory, for example: thinking that the numbering of things elicits properties of *numbers*.

[13] See Bueno and Colyvan (2012).
[14] See Keefe (2000), pp. 154-155.

To see this, let's revisit the LNP. Above we said that the LNP tells us that if some natural number has a property, then there is a least or smallest number that has that property. Here is a formal expression of it.

(LNP) $\exists xB(x) \Rightarrow \{\exists y(B(y) \wedge \forall z(z < y \Rightarrow \neg B(z)))\}$

Now suppose '7,766,000 numbers a tomato plant in our ordered series' expresses a truth. Pre-theoretically, this seems true. The last member of our sorites series—the fully developed plant—is a *paradigm* case of a tomato plant. We have ordered the series with the numbers 1-7,766,000. So it seems true that the number 7,766,000 numbers a tomato plant in our ordered series.

One platonic interpretation of such a case is that the sentence does say something about *the number 7,766,000*. The idea is that, when we are ordering and counting the items in our ordered series 1-7,766,000, there are then properties that the *numbers* themselves have. Accepting that counting requires properties of numbers may be thought essential to the foundation for the application of mathematics.

Now if we have grasped a property about some number, we should be able to apply the LNP. That is, we should be able to let the wff 'B(x)' (from the antecedent of the formalized LNP above) capture that truth. The LNP is a sentence-schema, so if we "replace" the placeholder 'B(x)' with a predicate capturing that first truth (about 7,766,000), we get, again on their view, a *true* conditional:

$\exists xNTP(x) \Rightarrow \{\exists y(NTP(y) \wedge \forall z(z < y \Rightarrow \neg NTP(z)))\}$.[15]

If the supervaluationist wanted to uphold this truth, they would then have a true conditional with a true antecedent, the consequent of which is then true. So they would get this as true: $\exists y(NTP(y) \wedge \forall z(z < y \Rightarrow \neg NTP(z)))$. Yet as we know, on the supervaluationist view

[15] Here 'NTP' just stands for "numbers a tomato plant in our ordered series". I use this for ease of exposition.

there is no particular number that is the least number. There is no particular number, y, such that it numbers a tomato plant and every number less than y doesn't number a tomato plant. So they get a least number but no particular least number.

The fact that the supervaluationist says that there is some true "existential" without a true instance is in a way old hat. We already knew that supervaluationists had to embrace non-traditional quantification. The supervaluationist denies the induction step of the mathematical induction formulations of the sorites paradox (so for our formulation, they deny (P2)). They say that it is false. It is false because it is superfalse—on every admissible precisification it is false. On every precisification, some consecutive pair of our series will be such that the second is a tomato plant and the first is not. So the universal—all members in our ordered series are such that if they are tomato plants, then the member right before them is a tomato plant—is false on every precisification. Supervaluationists thus have some non-traditional quantification: false universals without a falsifying case. Moreover, the existential claim—there is some member of our ordered series such that it is a tomato plant and the member right before it is not a tomato plant—is then true on every precisification. This is then a true existential without a particular instance, some more non-traditional quantification.[16] Again, this sort of thing is old hat.

In fact we know that the supervaluationist (given a *quantified* formulation of the paradox), gets strange quantificational behavior with *any* interpretation of FOL that makes use of language that functions like 'is a tomato plant'. So, since the language of formal number theory just is a proper subset of the language of FOL with a standard interpretation, one might then think that the point that the supervaluationist is committed to a least number without a particular least number is just a rehashing of an already discussed point that supervaluationists must embrace odd quantificational behavior for FOL. Yet I say, this particular commitment to a true

[16] See Keefe (2000, pp. 182-6) who embraces this.

existential without a true instance brings them another cost. It isn't *just* old hat. On a platonic reading of the case above, we looked to be claiming that there is a truth about a *number*, that one *number* has a property. The LNP tells us that there is then a least number that has that property. So the platonist reading together with the math gets us a least number.

When we are just dealing with other interpretations of FOL that try to interpret vague language, and not just the subset of FOL that is formal number theory, I think we can at least try to massage the result away (however successfully). We can say that we are giving a logic and semantics for common and ordinary language, and so may want to make some alterations to a well-respected logic to account for ordinary reasoning. For example, we may want to allow true existentials without instances. This alone seems quite bad to me, and enough to get off the boat. Nevertheless one might take something of a pragmatic line and admit that we are doing our best to provide a logic for reasoning in vague language, and that we should be happy to have *some* treatment of vague language. I see some of the motivation for this. But I add that with formal number theory, such a pragmatic line is much less palatable, if we prefer a platonic reading. For the supervaluationist to take a platonic reading, they must say that it is true that some number is the least number. There are 7,766,000 numbers that are the candidates. There are also *no other* candidates. Then we can ask about each individual number, tirelessly. And we are told that no one of them is it. This sounds to me like bad math.

The supervaluationist is then left to either (i) claim that '$\exists$xNTP(x) $\Rightarrow$ {$\exists$y(NTP(y) $\wedge$ $\forall$z(z < y $\Rightarrow$ $\neg$NTP(z)))}', though true, is *not* a truth *about numbers* and so not properly used as part of formal number theory, or (ii) admit that it is a truth about numbers, but claim that we need to revise quantificational theory for arithmetic mathematics. Put in another way, supervaluationists must either (i) deny a standard platonic interpretation of "number truths", or

(ii) revise what looks to be a priori number theory. Now, the supervaluationists might of course report their acceptance of (i). And more debate could go on about the foundations for the application of arithmetic. My point here is just that nihilists are not forced into accepting non-traditional quantification theory for formal number theory, or denying a standard platonic interpretation of number truths. Therefore nihilism has an important benefit, an advantage over the supervaluationist.

3.2.2 Cohering with classical logic

As we have seen (in §1.2.1) the sorites paradox appears to challenge classical logic. In particular it appears to challenge the principle of bivalence (PB), the law of excluded middle (LEM), and the law of non-contradiction (LNC). Moreover, it appears to challenge claims to the effect that classical logic is the correct logic.

We may now go on to see that nihilism has another important benefit: cohering with classical logic.

3.2.2.1 Endorsing PB, LEM, and LNC

To begin to see how nihilism coheres, we can see that the nihilist need not give up PB, LEM, or LNC. She may say that these principles/laws are correct, and do indeed reflect properties of the things good reasoning employs. As sentences like 'pass the mash' are not counterexamples to bivalence, similarly, vague sentences like, '604,800 is not a tomato plant' are not counterexamples. One salient difference between the former and latter sentences is that sentences like '604,800 is a tomato plant' *seem* to be candidates for being truth-apt, for we often say that such sentences are used in the *indicative mood*. Even so, the nihilist will deny that all sentences used in the indicative mood are truth-apt. Many others will deny this too, for there are cases of sentences uttered as part of a play (or under some other type of pretense) where we seem

to have the mood but no straightforward truth-value. The nihilist just takes the additional step and says that, even with what we thought of as more standard and straightforward cases of truth-apt sentences, we still don't have truth or falsity. The nihilist is just adding some more grist to that mill. So the relevant sentences (or claims) like '604,800 is a tomato plant' are not suitable candidates, and so don't help supply counterexamples to PB, LEM, or LNC.

3.2.2.2 Endorsing classical logic as "correct"

Moving forward, there is the question of whether some classical two-valued logic, or some logic that upholds PB, LNC, and LEM, is the correct logic for us. I say that the nihilist may just as easily side with the mainstream on the point that some classical two-valued logic is the *correct* logic *for capturing truth and truth preservation*. The nihilist may be a strong proponent of some classical two-valued logic for *these purposes*. They just maintain that our sorites-susceptible language does not manifest these features. Endorsing classical logic as the correct logic does not require the claim that all of our appropriate language manifests these features. Perhaps it may be thought that this response renders classical logic irrelevant. This objection will be considered in detail in §3.3.5.

3.2.2.3 Benefits over supervaluationism

In fact, the nihilist's endorsement of classical logic has clear advantages over the supervaluationist's. We remember (from §2.3.1) that supervaluationists give up PB because of some declarative natural language sentences. On the supervaluationist view, these sentences are neither supertrue nor superfalse (read: neither true nor false), as there are items in the series for which some precisifications of the predicate count that item, and some do not.

The supervaluationist is able to uphold LEM. Yet, as we have seen (§2.3.2), they allow true disjunctions without a true disjunct. The nihilist is able to say that any genuine instance of

excluded middle has a true disjunct, or that any true disjunction has a true disjunct—something given to us by classical FOL with its standard semantics and meta-theory. The supervaluationist can't say that.

We need not get into disagreement about whether 'classical logic' is more apt as a phrase applied to a language *together with a standard semantics and metatheory*. What we can do is see that supervaluationists give up PB, and the ability to say many intuitive things held strongly by proponents of classical logic. Many classical logicians will acknowledge the counter-intuitiveness of having true disjunctions without a true disjunct. The nihilist doesn't have this counter-intuitive baggage.

Moreover, again as Williamson argues, supervaluationists lose certain argument forms when supplementing their logic with a 'definitely' operator. This includes contraposition, conditional proof, disjunction elimination, and negation introduction.[17] The nihilist doesn't lose these forms. Keeping to the side disputes about whether 'classical logic' should pick out something together with a standard semantics and meta-theory, I say that it is a cost to lose these forms—forms that have historically been a part of the practice of so-called "classical logic" logicians. Even more, these forms have great intuitive pull. Thus the nihilist's endorsement of classical logic as the correct logic has advantages over a much more seriously considered view.

3.2.2.4 Classical logic as a principal motivation

Taking classical logic seriously, and endorsing it as something like the "correct logic" can be a *principal motivation* for endorsing nihilism. This is likely part of what was going on with Frege and Russell, who have been categorized as nihilists.[18] We can see that a proponent of classical logic could put forth the following argument.

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[17] Ibid, pp. 151-152.
[18] See Braun and Sider (2007, p. 133), and Keefe and Smith (1996, p. 11), respectively.

1) Classical FOL—say, first order logic with identity together with its standard semantics and meta-theory—is a/the logic for effectively capturing truth and truth-preservation.

2) So, if our typical sorites-susceptible thought and language use functioned such as to uniformly exhibit truth (or falsity) and validity (or invalidity), then FOL can adequately model our typical thought and language use.

3) If FOL can adequately model our typical thought and language use, then our typical thought and language use is adequately modeled as possessing sharp cutoffs for our terms.

4) Our typical thought and language use is not adequately modeled as possessing sharp cutoffs for our terms.

5) Thus, our typical thought and language use does not exhibit truth or falsity and validity or invalidity.

This sort of argument starts from a serious endorsement of FOL and concludes with a nihilist's statement.

3.2.3 Summary of benefits

So far in this section I've acknowledged two main benefits of nihilism: (i) nihilism coheres with platonic interpretations of number truths, and (ii) nihilism coheres with classical logic. Along the way, I've pointed out that nihilism achieves some of this in a way that is superior to supervaluationism. So I think we can pause here and appreciate how these observations help support the main conclusion of this chapter—that nihilism deserves more serious consideration. Given that many pursue the joint project of providing a response to the sorites paradox while preserving classical logic, it would seem that if a response to the sorites paradox can achieve this—and does so in a way superior to other standard views—it merits serious consideration. Certainly our discussion so far can advance nihilism past being deemed "desperate", and past being seen as failing to "squarely face" the sorites paradox.

Yet even acknowledging such perks, there may still be lingering doubts about nihilism's merits. One salient objection comes from the question: doesn't nihilism achieve some of these merits by, for example, making classical logic irrelevant to most of our actual sentences and reasoning? So, the objection goes, might we still prefer to side with an admittedly problematic view like supervaluationism that does purport to apply to many more of our actual sentences and reasoning? I will respond to this big objection below (in §3.3.5). We have begun to see some reason to take nihilism more seriously. We may strengthen this by considering some major objections to nihilism, and seeing the resources the nihilist has to respond.

3.3: The big objections to nihilism

In this section I'll consider some central objections to nihilism. In the course of considering these central objections, and in seeing how the nihilist can respond, we shall see how the nihilist can accomplish (I)—salvaging our pre-theoretical intuitions that gave rise to the paradox (e.g. from above: our pre-theoretical intuitions that there are tomato plants, that there are non-tomato-plants, and that one second can't make the difference between being a tomato plant and being a non-tomato-plant).

3.3.1 Objection One: but of course we say true things!

3.3.1.1 Objection One at first blush

It wouldn't be surprising to hear an initial scoffing at the nihilist thesis. Scoffers might seek to justify their derision by objecting that nihilism is simply a *non-starter*. Everybody knows that we say true things with language like 'is bald' and 'is a tomato plant', so the objection goes. Just remember again the clear cases, a man with no hairs and the lovely plant 7,766,000 from above. Then, according to the objection, nihilism is a non-starter because it can't account for our

strong pre-theoretical commitments. Put another way, given how the main challenge was framed above, nihilism *can't* help us to accomplish (I).

3.3.1.2 The nihilists response

There is a lot to say about why this non-starter objection may be more akin to an incredulous stare than to a real objection. But let us point to one thing first. If it is considered a real objection, such a formulation is question-begging. Remember how the paradox was framed above. Nothing was said about how some sentence like, 'something is a tomato plant' (or some corresponding thought) *is true*. The pre-theoretical commitments I acknowledged are the strong tendencies to use certain *language*, and to *think* in certain ways. We appropriately utter '1 is not a tomato plant', just as we appropriately think thoughts like "some people are bald".[19] Everyone agrees to this! If we framed the intuitions motiving the paradox as requiring that (i) it is *true* that some things are tomato plants, (ii) it is *true* that some aren't, and (iii) it is *true* that one second can't make a difference between being a tomato plant and not being a tomato plant, then nihilism couldn't be coherently formulated![20] If nihilism is not the correct response to the sorites paradox, it is not because it is incoherent. By making this "non-starter objection", the objector would be *assuming* that the relevant portions of language used (and the relevant thoughts) are truth-apt. That is to assume that nihilism is false.

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[19] From here on out, I'll focus on the appropriate use of sentences. Talking in this way is of course different than talking about the norms governing thought. (For one, a public language requires conventions constrained by the utility of communication, while thought is not always constrained in that way.) Yet similar points about what makes uttering '7,766,000 is a tomato plant' appropriate can easily be made in terms of what makes thinking the thought '7,766,000 is a tomato plant' appropriate.

[20] More specifically, there is *one kind* of nihilist view that couldn't be formulated if the pre-theoretical intuitions were framed as (i)-(iii). If the paradox were presented that way, one would be forced to say that it is part of the pre-theoretical phenomena that sentences like, '1 is not a tomato plant' are *true*. And so, if such sentences exhibit vagueness, then, given nihilism, they are neither true nor false. Thus the nihilist would be *forced to deny* the pre-theoretical phenomena that it seems we need to recognize. That is, she would be forced to say that, despite appearances, our pre-theoretical intuitions are seriously misguided. And so there would be no room for a nihilist view according to which vague sentences are *both* neither true nor false *and* straightforwardly appropriate to utter. So *this kind* of nihilist view could not be formulated. A different kind of "nihilist" view that *denies* the pre-theoretical phenomena could still be formulated. Discussion of such a view is not my concern here, however, as we are interested in a view that accomplishes (I).

3.3.1.3 Objection One reformulated

Now someone may still push an objection along these lines by disagreeing with the nihilist, and by asserting that we do say true things with vague language. The objection, then, would be that our intuitive tendencies to think or say in what might be called "clear cases" that something is a tomato plant or that someone is bald have a kind of aptness that can *only* be effectively captured as *truth-aptness*.

3.3.1.4 The nihilist's response to the reformulation

This objection is better, not being question-begging. This is also something like the most pressing objection, in the sense that at first blush nihilism seems to fail to account for the aptness of a very large class of our talk and thought, yet I think this objection is no major hurdle.

To start with, why should we think that such utterances and thoughts must be characterized as truth-apt for them to be counted as apt more generally? It doesn't follow from the nihilist thesis that typical speakers can't successfully *communicate* with uses of so-called vague language. I hope I am succeeding in doing just that right now. (More on communicating with and succeeding with vague language in §3.3.3 below.) It also doesn't follow that typical speakers don't or can't successfully *navigate the world* by use of vague language. Consider: 'Hand me the large seeds' and 'Don't eat the berries that have fur'. Nor does it follow that speakers can't, as we might say, *get things right* with uses of so-called vague language. Suppose we are asked: which traffic light am I prohibited from driving through in this locale? We could get it right by responding with: the red one! In common practice, such aptness (communicating effectively, successfully navigating the world, and getting things right) happens all of the time. The nihilist need not say that "vague" language use and the associated practices partaking of

such uses are bankrupt, or much less, that they are not often simply correct and effective.[21] For a thorough defense of nihilism, one may want some explanation of *how* vague language succeeds in those ways, if, say, the uniform expression of properties is not part of the explanation. But I say, there is no reason to think that in principle, such an explanation cannot be given. Such an explanation may even require empirical work to support our philosophical argument. One may study the dispositions that particular groups have to use vague words across a number of different items in a sorites series, or some mechanisms involved with individual people's language acquisition. How my utterance of certain sounds allows me to accomplish specific aims is not a philosophical question. There are nevertheless philosophical questions in the neighborhood. So, pace Williamson, nihilism does *not* amount to "intellectual suicide".[22]

Even more, it is not hard to see *how* the nihilist can say that we aptly utter certain "statement-making" sentences that are not true. Take a simple example. On one common and straightforward way of speaking, the banana in my hand is yellow. Similarly straightforward is: 'it is true that the banana is yellow'. However, we need to be clear on what we are talking about. We all agree that we often use 'yellow' and 'banana' in ways that allow bananas to merit the title 'yellow'.[23] 'This banana is yellow' is often aptly uttered, when speaking what we might call

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[21] One need not take such a drastic line as Unger (1979b, p. 150), who took sorites reasoning to show that common sense was badly in error, that "simple positive sentences containing these [ordinary object and sorites-susceptible] terms will never, given their current meanings, express anything true, correct, accurate, etc., or even anything which is anywhere close to being any of those things."

[22] See Williamson (1994, p. 165).

[23] One may worry that the vagueness of 'this banana' poses problems. That is, one might say that there are many different regions of space-time that could equally serve as the referent. I'll say two quick things about this. The first point is that the controversies surrounding the vagueness of subject terms constitutes a separate issue, with more demanding assumptions. For our example here, the objector's claim would be something like: *there are* a number of banana candidates, no one of which is privileged as the referent. I say: this is not so obvious. And secondly, surely that is not the same claim as the less controversial: we can point to different yet overlapping regions of space-time and may be puzzled about which is the referent or even, whether it is plausible that something so tightly outlined is the referent of a natural language term.

So one may say that, regardless of the different ways we can carve up space-time, we can't simply *assume* that there is more than one *banana-thing* there. That assumption is more metaphysically loaded. And as for the second point, I

"assertorically" and "literally" about a ripe Cavendish banana. We can notice that many of the relevant utterances about bananas are apt, and that we are in some way warranted in uttering sentences like, 'this banana is yellow' and even 'it is true that this banana is yellow'. Such utterances are certainly apt, in great part because common terms (like 'banana' and 'yellow') typically come about due to purposes we need them to serve, and since classifying some bananas by 'yellow' serves some of our purposes quite well. Insofar as this is the main thing we are committing ourselves to when we reflect upon the aptness of common use, then there is no disagreement the nihilist need have with someone concerning, as we might put it, whether 'bananas are yellow' is true.[24] It is just that, for the nihilist, both 'bananas are yellow' and 'it is true that bananas are yellow' are *not truth-apt*, despite being *aptly used*.[25] So common endorsements to the effect of "this banana is yellow", "it is true that this banana is yellow", etc. can be upheld on the nihilist view. And such endorsements need not be read as inconsistent with nihilism. We just need to be clear on what people are committing themselves to by their use of

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say that the nihilist can, if reasonably pressed, drop the pretense that there is one precisely outlined thing there that we indisputably refer to that we later say merits the label 'banana'. The bigger point is that the language uses and thoughts are apt. As with the nihilist claim that we need not assume that some *property* is uniformly attached to our words or thoughts for the relevant occasions of language use to be apt, so too we can't assume that we need such precise *reference* for the occasions to be apt.

[24] It is important to keep in mind that this is a contingent fact that could change, given that natural language terms can change their typical effects with enough divergences in use.

[25] There are more wrinkles with more complicated sentences, including: 'The sentence, 'bananas are yellow' is true'. This sentence can be appropriate to utter in a context where we are simply remarking about a common way of speaking. A non-philosopher who hasn't thought about the sorites paradox might utter this. And their utterance of it, in such an ordinary context, could be *apt* and could *not* incur commitment to a falsity. However, were some philosopher to come along and ask about the truth-value of the same sentence, 'The sentence 'bananas are yellow' is true', I say we may have to say something different. The nihilist may say that that use of that sentence is *not apt*, and *may* even say that it is *false*. Their rationale could begin as follows. We may ask: is the phrase 'the sentence, 'bananas are yellow'' vague? Does the phrase refer? If it isn't vague and does refer, is 'is true' vague? If not, then it looks like we have the grasping of one thing, one sentence (i.e., the sentence, 'bananas are yellow'), and the saying about that thing that it has some property (i.e., *being true*). So it looks like the larger sentence (i.e., 'The sentence 'bananas are yellow' is true') would be truth-apt. (Though, one could deny this too, on account of some alleged "vagueness" of 'sentence'.) But since, as the nihilist says, 'bananas are yellow' is not truth-apt, 'The sentence 'bananas are yellow' is true' could be counted as false. Thus, the same sentence uttered by a philosopher could give us something inapt and false, where it was apt and did not incur commitment to a falsity when uttered under more ordinary circumstances. This could happen if such speakers are doing something very different when they utter 'true'.

the language, for example, by their use of 'true'. The details of that will require empirical work.

A final point here is that the nihilist's response we just considered does not amount to accepting a pragmatic *analysis* of *truth*—something roughly of the spirit that truth is acceptability for the relevant purposes. The nihilist need not accept such a view, and is able to take many options seriously for an account of truth, just as she is able to deny that "truth" can be given an analysis. She can uphold some orthodoxy and (as we saw in §3.2.2) say that classical logic (with classical meta-theory) applies to truth-apt discourse and truth-preserving arguments.

3.3.2 Objection Two: nihilism is not true or incomprehensible

The nihilist says, broadly and roughly, when there is vagueness, semantic notions don't apply. Thus one thing that a nihilist says, as we saw above, is: vague language is not truth-apt. A second thing a nihilist may say is: vague language doesn't have *semantic content*. A nihilist may even use the second to explain the first, to explain why vague language is not truth-apt. Or they may say that the two claims come to the same thing. The thesis is *semantic* nihilism, after all. But, regardless of the alleged relationship between the two, the nihilist commitment to there being no *truth-apt content* with vague language gives rise to an important objection.

3.3.2.1 The objection

Most or all of the language used in this paper to describe and discuss the thesis of nihilism appears vague. It then seems that such vagueness should problematize the *nihilist thesis itself*. So, the objection goes, if nihilism is *true*, then the nihilist can't have genuinely *said anything* when asserting her thesis.[26] Moreover, if the nihilist hasn't said anything, she couldn't have been comprehensible. Thus nihilism is either not true or incomprehensible.

[26] A similar objection was discussed by Ludwig and Ray (2002, p. 448) that they note was posed against their view by Gene Mills. What Ludwig and Ray discuss wasn't framed as a dilemma in the way this objection is.

This objection is a dilemma with three parts: (1) Either the nihilist thesis says something or it doesn't; (2) if the nihilist thesis says something, then the thesis is not true; and (3) if the nihilist thesis doesn't say anything, then it is incomprehensible. Let's take each in turn.

3.3.2.2 The nihilist's response

I say, just as we needed to be clear on what we are committing ourselves to by use of 'true', so too we need to be clear about our use of 'says something' (and its relatives). This gives us a dilemma. Either the objector's use of 'says something' requires *expressing something truth apt*, or it doesn't.

As for (1), suppose by 'says something' we intend to require that it *expresses something truth-apt*. If that is what we intend, then the nihilist can agree to: either the nihilist thesis has this property or it doesn't. For the nihilist can of course agree that there is a property of *being truth apt*, and one of *expressing something truth-apt*. Moreover, the nihilist can be happy with (1) if the objector intends *something else* by use of 'says something'. If it expresses some other property, then the nihilist thesis either has that property or it doesn't. Thus the nihilist can agree with (1).

As for (2) and (3), we may continue with our dilemma. Again, either the objector's use of 'says something' requires the expressing of something truth apt, or it doesn't.

To start, suppose the objector's "saying something" *requires* the expressing of something truth apt. The response begins by noting that the nihilist *may not* have said many things *in the sense of expressing things that are truth-apt* when articulating, defending, and discussing the nihilist thesis. Nevertheless, were that the case, she *would have* said many things in the sense of communicating information, getting things right, and using language to serve a variety of different purposes. What is above is not gibberish. That this *objection* is comprehensible reflects

that the view is not gibberish.[27] So the nihilist may deny (3) —that her having failed to succeed in "saying things" in the sense of expressing something truth-apt renders her view incomprehensible.

Alternatively, we may suppose the objector's "saying something" does not *require* the expressing of something truth-apt. And, were that the case, the nihilist may deny (2)—that if nihilism says anything, it is not true. The nihilist may do this in two different ways. First, she may say that the vocabulary sufficient to state the nihilist thesis is not vague of necessity. And so, the response goes, the nihilist may state her thesis in such a way that, in addition to being *apt*, it is *truth*-apt (but more on this in §3.3.4). As for the second way, the nihilist may say that, even if nihilism can't be expressed without using vague language, the thesis can still be more *apt* than the rivals, supporting understandable and appropriate uses of 'nihilism is true'.

3.3.3 Objection Three: but we do mean things

3.3.3.1 The objection

One may push back against this nihilist response to the previous objection, suggesting that for the nihilist thesis to be either comprehensible or apt or truth-apt, the nihilist thesis must *have semantic content*. It must have a meaning. And so the objection goes, *if the nihilist thesis is vague*, semantic nihilism is neither comprehensible nor apt nor truth-apt.

Even more generally, so the objection goes, *all other language and thought* (not just the language and thought necessary to consider or formulate the nihilist thesis) is like this. That is, such language looks like it needs to have semantic content for it to be either comprehensible or apt. If we reflect upon our use of vague language, it appears that much vague language is comprehensible or apt. So, the objection goes, the nihilist's thesis (whether self-undermining or

[27] The point that the objector clearly understands the view being criticized was made by Ludwig and Ray (2002, p. 448).

not) is incorrect about vagueness.

3.3.3.2 The nihilist's response

We can thus see that Objection Three, if it is not a restatement of earlier objections, can be more generally put: we do *mean* things with vague language. This objection is quite different from Objection One—that we do say true things with vague language. And this objection may appear to put the nihilist in a strange spot, for she wants to deny that strictly speaking there is *any semantic content* when there is vagueness. Nevertheless, the nihilist doesn't want to say that we don't communicate, get around, and so on. When I hear on the news that today is Sunday, I am reminded that no U.S. mail will come. The nihilist *shouldn't* be forced to say that hearing 'Today is Sunday' on the news didn't help me to coordinate about whether I was going to walk outside to check the mailbox. So the task becomes one of accounting for such aptness (like communicating, navigating the world, and getting things right) without strict meaning.

One clear way for the nihilist to proceed is to give or align with a "theory of meaning" that doesn't centrally draw on truth-apt propositions as the meanings of our ordinary statings. The idea would be that we do *in some sense* mean things when our thought or language is vague; we just aren't usually getting at truth or falsity. So we would have to be careful about what we mean by 'mean' when we say "we do mean things". An alternative way of going is to say that strictly speaking we don't mean anything at all, and to identify a theory of *communication* that is aimed to answer the question of how we can get around in the world if our utterances aren't "meaningful". A rough slogan would be: vague words only mean things in the sense that they help us to communicate, navigate the world, and get things right. We look to the uses and to the various effects of vague language use, and that gives us the closest thing to meaning we can get—something that can explain our aptness.

In order to do this, the nihilist can speak of dispositions to use words that vary from speaker to speaker and even for one speaker over some small or large period of time. People will have inclinations to use words in particular cases. We can use 'disposition' to try and grasp what is going on there, and exactly how these "dispositions" are explained is a complex empirical question. Some speakers have similar enough dispositions to use a word so that when one says 'please grab the yellow-handled shovel', they are able to help direct the attention of a gardening friend to the correct item. For the nihilist, even though there is no meaning in the strict sense, there are things like dispositions that often overlap between speakers. This is *not* strictly speaking *meaning*. That is, it is not a content acting univocally across a variety of syntactically similar use of languages, or structurally similar thoughts. But that we do not have something strictly counting as *meaning* (in this sense) does *not* imply that there aren't effective dispositions to have to help along communication. We seem to be able to learn of parts of other people's dispositions to use a word. And it may even turn out that we are responding to noticing certain genuine *properties* in the course of doing this, but failing to make reference to them or to adequately and uniformly express them with our language.

Surely properties—logically respectable properties—impinge on us. The nihilist doesn't deny that properties could be *part* of the enterprise that helps explain our successes, our successful navigating and getting things right. The nihilist's point is just that our common language practices (or our common patterns of thought) don't reliably track such properties. It is one thing for a property to impinge on us, to affect our judgment and actions. It is quite another thing for an agent to be able to pinpoint such a property, to make successful reference to it, and even more, to capture it either by use of our ever-changing language practices or in thought.

3.3.3.3 A parallel to supervaluationism

There is one last thing to point out about the "we do mean things" objection. The intuitive basis for this objection comes from the many instances where in common use we are apt to say that we mean things. These are instances where we successfully communicate, solve problems, and get things right. One might think that the nihilist is in an especially difficult place here, for she must explain how we can succeed in, for example, getting people to hand us a yellow-handled shovel from use of 'Please, hand me the yellow-handled shovel', that is, *if* 'yellow-handled', and 'shovel' don't uniformly signify things. 'Please' is powerful, but not *that* powerful!

I say she is not in an especially difficult place. It is difficult for *most anyone* to explain how we coordinate and communicate to solve problems, even if they are believers in truth-apt things as the meanings of our vague statings. We can see this with both epistemicism and supervaluationism. Let's take them in turn.

First consider the epistemicist, who thinks that vague sentences that are used to mean things both (i) express truths and (ii) exhibit sharp cutoffs for the meanings of our terms. The epistemicist is forced to say that we aren't familiar with the exact cutoffs for most of our terms. So there is a sense in which we don't quite know their meanings, though we may know in specific cases that 'yellow' applies to certain things. Now if, on the epistemicist's view, people don't know the full meanings of our terms, then the question still pops up: how do we successfully communicate?[28] How would this meaning, which we would only have partial grasp of, help to successfully direct behavior?

As a second example, remember the supervaluationist who asserts that sentences are true when there is a class of precisifications for that sentence (or ways of making that sentence

[28] We could formulate a sorites series for 'knows the meaning of our terms', and then ask: would there be a cutoff?

precise) which all come out true. So the meaning of a sentence is something that can be associated with (or perhaps *identified* with) a class of genuine propositions. Now, again, the speaker doesn't know what this set is, that is, which among the possible precisifications are actual or "admissible" precisifications. So the question also arises: how do we achieve the purpose of getting the yellow shovel by use of that sentence?

To be clear, I am not suggesting that this is an insurmountable problem for anyone, just that it is as difficult a problem for others as it is for the nihilist. Of course, a whole lot more can be said here. The point is, whatever the story, the nihilist is not prima facie in any more trouble to offer an explanation.

3.3.4 Objection Four: setting a standard for applying logic

3.3.4.1 Sorensen's Argument that 'vague' is vague.

I said in the previous section (§3.3.2.2) that perhaps nihilism can be stated without using vague terms. Sorensen has given us a compelling argument for the conclusion that 'vague' is vague.[29] There he also claimed that any term synonymous with 'vague' is vague as well. So he draws two conclusions. First he concludes that any view that seeks to claim that vague language is defective or incoherent will inherit this, and thus be self-undermined.[30]

His second conclusion is that any view that seeks to circumvent the problems of vagueness by a demarcation between the vague and the non-vague is also in trouble. Sorensen gives a particular example of such a view, saying,

> "Thus the vagueness of 'vague' presents a dilemma for those who wish to restrict logic to non-vague terms. The statement of the restriction must contain a vague term. If logic applies to the statement, the statement is incorrect. If logic does not apply to the statement, then the 'restriction' is without force; for it has no implications as to what is ruled in or ruled out. Since a restriction must rule something out, the 'restriction'

[29] See Sorensen (1985).
[30] Ibid, p. 136.

would not be a genuine restriction."[31]

3.3.4.2 The nihilist's response to the first part

To begin to respond to this two-part objection, we can remember the discussion from the previous section. There I said that even if the nihilist thesis is neither precisely statable nor genuinely true, the nihilist thesis could still be more apt than its rivals, supporting understandable and appropriate uses of 'nihilism is true'. Moreover, the nihilist need not say that vague language is defective or incoherent.[32] The nihilist just claims that the relevant language use and thoughts aren't truth-apt. Now, such a commitment may be somewhat unpalatable. Yet I say it is hardly an endgame when you consider other problems with rival theses, like epistemicism and supervaluationism. Some more of the heavy-lifting is done for the nihilist when she works to explain how competent speakers achieve successes and get things right, such as to allow utterances like "it is true that the banana is yellow" to be apt; and we've already flagged both that concern and an outline of an avenue for a nihilist response (§3.3.3.2). Now, and moving forward, we can highlight what is more threatening about Sorensen's "self-undermining objection", the second part.

3.3.4.3 The nihilist's response to the second part of Sorensen's argument

The semantic nihilist does want to say something along the lines of: we don't achieve genuine semantic properties (like *being valid*, *being true*, *being an implication*, and so on) when there is vagueness. And since a sorites series may be posed for the use of 'vague', it looks like the nihilist is somehow operating under incorrect pretenses: assuming that there is a distinction between the vague and the not vague. Though Sorensen doesn't put it this way, we can frame his

[31] Ibid, pp. 136-7.
[32] Sorensen's main target as described at the outset of his paper included folks like Unger (1979) who claim that vague language is in some way incoherent (134). Sorensen also mentions Dummett (1975), Quine (1981), and Wheeler (1979) as targets too.

objection: it looks like the nihilist *needs* a genuine distinction between the "vague" and the "non-vague" (or between the sorites susceptible and the not sorites susceptible). Sorensen says, "[f]or the vagueness of 'vague' ensures the impossibility of exactly determining which predicates are suitable for logical evaluation".[33] So, the objection goes: the nihilist can't rely on a genuine distinction they need. Again, as Sorensen does say, any substitution of 'vague' will pose the same problems if it expresses the same thesis.

This objection is troubling for the nihilist, in a way that both the objection from the previous two sections and the "but we do say true things!" objection are not. For, if we say that the nihilist thesis may be appropriately labeled "true" without being truth-apt, we are left committed to something implausible. Suppose the nihilist is posed with the question: which uses of language reflect reasoning that logic applies to? The nihilist is left saying that, in order to answer the question, we must attend to whether the particular language uses are apt more generally, help us to get things right, help us to navigate the world, and serve a variety of different communicative purposes. But that seems to be a fairly poor foundation for being able to discriminate whether logic applies. Some would say it is no foundation. In fact, commitment to such a procedure for determining the applicability of logic seems to abandon part of the *motivation* for semantic nihilism, which involves commitment to *being valid, being true, being an implication* as genuine properties, logically respectable properties. It looks like whatever candidates there are, they should either have such logically respectable properties or not, and it looks like those candidates are such that logic should either apply or not apply.

Strategy 1

[33] Ibid, p. 136.

Braun and Sider have responded to a similar objection that their thesis of nihilism is troubled because of vagueness, and in particular, the vagueness of semantic terms. Their response is that, though their paper doesn't present a true thesis, it still gestures at a number of true theses.[34] And they claim that the differences between the different theses their paper gestures at are insignificant. This response, however, doesn't quite point out what to say about the *application of logic*. We might ask them: do all of the various theses your paper gestures at commit to the same restriction of logic? Despite the problems this might involve, such a response is perhaps a first strategy a nihilist could continue to pursue.

Strategy 2

But I say that, in response to Sorensen's more pointed objection about the application of logic, there is a second thing a nihilist may want to say instead. I say the nihilist may take the route of denying that any *relevant* "statement of nihilism" (scare-quotes explained below) must contain a vague term. The idea is: we can agree that if we take the nihilist thesis and substitute a "synonymous" expression for 'vague', there could be a compelling sorites series posed to trouble that thesis. Nevertheless, we need not aim to find a nihilist thesis with a different synonymous word or phrase thrown in.

To begin with, remember that vagueness in terminology helps us to solve problems. Though an underdeveloped point, it is clear that we *couldn't* have non-vague natural language. And we *couldn't* have non-vague natural language that allows us to coordinate and solve problems, whether such problems are about building a boat or getting clear on the application of logic. So when the nihilist says "logic doesn't apply to vague language", they may not be saying

[34] See Braun and Sider (2007), p. 140.

something true or providing a clear boundary for the application of logic by strict use of the sentence. But moreover, so the response goes, one may work to provide a *different* non-synonymous thesis that still captures the *spirit* of nihilism. The general point is that a logic we want to employ has certain requirements, and that clarity on this can be achieved. For example, if we want to introduce a predicate into FOL through the extensional method, the predicate must denote a set of things, the things that have some property. Surely I just used natural language to say that, and such terms may be used in the formulation of a sorites argument. What is important, however, is whether I can find some language that helps me to point out something, to get clear on general boundaries for the application of some feature. The response to Sorensen is that this *can* be done without a thesis using 'vague' or other synonymous words.

So Sorensen's claim that "[t]he statement of the restriction must contain a vague term" is then denied. We can say something relevant that is *relevant to* a "statement of nihilism", and that amounts to getting clear on some restrictions for the application of logic. Yet it wouldn't be a synonymous statement of nihilism, because we would have given up on saying something about all "vague" sentences. We need not say "all vague sentences" have some feature, or that "all sorites-susceptible language" has a certain feature. We can put informative and, I think, helpful sentences in a paper, like, "vagueness must be eliminated before logic applies". If one asks about the "vagueness of 'vague'", we start explaining. And the hope is that we can explain the conditions for when logic applies, without recourse to assuming that 'vague' commonly captures some one feature across all of its uses—even on the topic of the sorites paradox. We would be using 'vague' as a rough gesture at the kinds of sorites "arguments" that may be posed. And we may be able to provide a way to respond to the sorites paradox, which is the aim from the outset. This gives us general guidelines for response to particular sorites arguments that may be

formulated. The upshot may look unpalatable: abandoning giving a general theory of some phenomenon termed by ‘vagueness’. However, if we can solve the sorites paradox, in virtue of identifying clear and plausible routes to take for response to particular sorites arguments, why cry out for a theory of some univocal subject matter in addition, especially when Sorensen has given a compelling argument for the vagueness of ‘vague’?

Strategy 3

A final and third thing a nihilist may want to say, instead of the first two, is to maintain that there is a true nihilist thesis that captures a property common to all “sorites arguments”, and that we can use ‘vague’ to mark that property. Doing this may look quite difficult, and we may cry out for a clear explanation of what feature that is, an explanation that doesn’t seem to allow the feature to be sorites-susceptible. We already know that solving the sorites paradox is difficult.

3.3.4.4 Summary of the nihilist’s response

This objection from Sorensen is not straightforwardly easy to overcome. Nevertheless there are some routes to response, some that I’ve flagged here and in the previous section. So I say, even acknowledging the difficulties those routes face, and the work needed to make the routes more passable, the problems the nihilist is saddled with do not make their view a non-starter. This objection does not render nihilism untenable or indefensible when compared with its major competitors, views we know have their own serious difficulties.

3.3.5 Objection Five: nihilism makes classical logic irrelevant

3.3.5.1 The Objection

In discussing the benefits of nihilism, I said the nihilist can say that vagueness doesn’t

give them reason to give up on a particular classical logic. They can say that, for discourses that have semantic properties, classical logic can help capture and model truth and truth-preservation. A large proportion of our natural language is sorites-susceptible. So then it seems that classical logic is irrelevant to most of our reasoning. Put more forcefully, the objection is: we need some response to the sorites paradox that allows us to capture a significant portion of our language with our logic. Nihilism doesn't do this. So nihilism is out.

3.3.5.2 The Nihilist's Response

Here I'll flag a path the nihilist can take to respond to this objection. First, going back to our earlier discussion, she can maintain: PB, LEM, and LNC. Moreover, as previously argued, she can uphold a classical logic as the best logic for crucial purposes. We can also see something more. Suppose someone gives the following argument.

> (P1) Purple is the color most associated with royalty.
>
> (P2) If some color is the color most associated with royalty, then it is reasonable to discuss that color in a course on "Popular Conceptions of Royalty".
>
> (C) It is reasonable to discuss purple in a course on "Popular Conceptions of Royalty".

We can look at this argument and see that it exhibits something like a good structure for being valid. We don't have modus ponens in form. Yet we could remark that if (P1) is true, then the antecedent of (P2) is true. If purple has a property, *P*, then *something* has property, P. If (P2) is a true conditional, then its having a true antecedent requires the consequent to be true. Then, because of (P1)—that is, if we could substitute 'purple' for 'that color'—we would get the conclusion.

Notice that nothing barred us from making these observations about the above argument. And in doing so we may have appealed to similarities to modus ponens, and talked about

existential generalization, principles of identity and substitution, and so on. We, if so inclined, could appeal to some truth-tables for particular varieties of conditionals, and features of the satisfaction-conditions for sentences used as part of an existential generalization. By doing this, we could engage in great disagreement with others about the logic, semantics, and meta-theory suitable. We could also engage in disagreement about translation from the natural language into the logical language. For example, we could disagree about whether a natural reading of that argument pins it down as having a truth-functional conditional or some other conditional or no conditional. In short, there is a lot we could consider and disagree about, with some players in the debate holding strong commitment to FOL.

If someone comes along and exclaims that ‘purple’ is vague, we need not abandon our previous discussion of the argument. We were assuming that the premises were true when asking about validity. And we could still maintain this assumption while continuing to engage in disagreement about the correct logic and logical principles needed to understand why that argument is valid. We can assert that in order to state a truth about a thing, one needs to predicate a property of a thing, and that properties are such that everything either has them, lacks them, and doesn’t both have them and lack them. We could also have dissent there. We could even accept that the argument doesn’t uniformly denote a property by ‘purple’. Yet none of that wrecks our explanation for why there is something like a kind of good form. None of that wrecks our ability to maintain allegiance to classical logic when working to explain what it is about that form that is kind of good. Importantly, we would still be talking about *that particular argument*. Although, the nihilist might do better to consider it as a set of sentence uses.

For another example, imagine that we are discussing the following.

(P1) All modern railroad tracks are made of a steel alloy.

(P2) All modern railroad tracks can withstand very high stresses.

(C) All steel alloy can withstand very high stresses.

We can read this argument, and see that it is not very good, for it is of course possible that some steel alloy be produced and composed of a lot more iron, or in such a way that it cannot withstand the relevant high stresses. We can then begin to consider the form: All A's are B's; All A's are C's; All B's are C's. We can then use FOL and give a model where the premises are true and the conclusion is false. And this model can feature prominently in our explanation of why the argument above—*that* argument—is not so good.

Now, if someone comes along and focuses on 'high stresses', suggesting that a sorites series of particular force distributions can be constructed, *again* we need not abandon our previous discussion. We can understand these remarks under the assumption that the parts that fill in 'A', 'B' and 'C' function either as class terms, or to express properties. If they don't our observations about the sentence forms are still good observations. And they can be informed by classical logic. The same is true for a purported sorites series for 'steel alloy', though more care is needed in the construction of such a series.

Finally, when we are not assessing some reasoning, but formulating our reasoning, we can then rely on similar considerations to improve the structure of our reasoning. We can work to avoid forms like denying the antecedent, affirming the consequent, and so on, forms that do not guarantee that uniform substitutions with meaningful parts results in a valid argument.

So, I say, none of this renders classical logic "irrelevant".

3.3.6 Summary: how the nihilist accomplishes (I)

We've seen so far that the nihilist has some routes to respond to the major objections to

her view. In the course of doing this, we noticed that a nihilist can put forth things like the following: ‘bananas are yellow’ and ‘it is true that bananas are yellow’. They can be apt even if not truth-apt. We can also see that other sentences like, ‘1 is not a tomato plant’ and ‘1 second can’t make the difference between being a tomato plant and not being a tomato plant’ are really no different. The nihilist can uphold these as apt as well, in virtue of their use helping us to get things right, successfully communicate, and successfully navigate the world. If we look at the various dispositions people have when using a common term, we can even see how such terms are effective at assisting us with these goals. Moreover, the nihilist can accept that properties of objects are part of the enterprise of explaining our successes. The larger moral is of course that the nihilist can work to accomplish (I)—salvaging our pre-theoretical intuitions that give rise to things like (P1) and (P2).

3.4: Conclusion

Many have treated nihilism as a non-starter. I’ve argued that it is not. I showed how the nihilist has a straightforward response to the paradox in §3.1. In §3.2 I explained some benefits of nihilism. We saw that there are a few senses such that the nihilist can say that classical logic is the correct logic, and that nihilism fares better than supervaluationism on that score. We also saw that nihilism does not incur the cost of being unable to take a platonist reading of number truths—that counting objects gives us properties of numbers. Supervaluationism does. In §3.3 I went on to show that there are clear responses a nihilist has to the most pressing objections: (i) that we do say true things with vague language, (ii) that nihilism is incomprehensible, (iii) that we do mean things, (iv) that nihilism cannot provide a principled distinction needed for clarity on the application of logic, and (v) that nihilism renders classical logic irrelevant. All of this together is sufficient for nihilism to merit serious treatment.

Chapter 4: Quasi-nihilism

4.0: Introduction

Here I argue that the sorites paradox doesn't pose a direct threat to the use of classical two-valued logics, like FOL with identity together with its standard semantics and meta-theory. Many others have argued that they can preserve classical logic in the face of the sorites paradox. As discussed in Chapter 2 and Chapter 3, some epistemicists and nihilists have worked to respond to the sorites paradox while preserving commitment to classical logic together with its standard semantics and meta-theory.[1] And some supervaluationists, as we have seen, have responded to the sorites paradox by making some changes to the semantics and meta-theory.[2] Responses to the sorites paradox that uphold classical logic are abundant. Mine follows suit.[3] However, I will provide a new alternative to these standard responses, a view I call quasi-nihilism. This view is worth considering, as it has some benefits not offered by the standard views.

In the first section I describe the quasi-nihilist response to the sorites paradox. In the second, I explain how the quasi-nihilist can respond to the problems the sorites paradox poses for endorsing classical logic. I argue for some important benefits of the view in the third ssection. In particular, quasi-nihilism (i) avoids commitment to widespread sharp cutoffs, (i) helps with self-undermining worries, (iii) fits better with our ordinary intuitions about natural language, and (iv) better allows us to supplement our knowledge of our terms. I respond to some central objections to quasi-nihilism in the fourth section. These include the objections that quasi-nihilism is not a solution, that epistemicism is more elegant, that quasi-nihilists have no reason to prefer their

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[1] See Cargile (1969), Williamson (1994), and Sorensen (1988, 2001). For nihilists, see Ludwig and Ray (2002).
[2] See Keefe (2000).
[3] To be clear, arguing that the sorites paradox doesn't pose a direct threat is consistent with agreeing that some other phenomena (embedded conditionals, considerations about quantum theory, and so on) do pose a direct threat. I am silent on those other considerations here.

view to rival views, and that ‘express a property’ is sorites-susceptible. In the fifth and final section, I conclude by discussing some of the dialectical pressure quasi-nihilism puts on both epistemicism and nihilism.

4.1: What is quasi-nihilism?

4.1.1 The bare thesis

Here is the bare thesis of quasi-nihilism: when we are employing sorites-susceptible language we are, as such, ignorant as to whether or not we are referring and expressing properties. Let me now add a few more details.

To begin with, when I speak of employing, I mean to include what is happening in both of the sentences (a) and (b) below. Suppose we have a color, such that competent speakers would have difficulty in determining whether that color was red or not red, where that difficulty would persist, even if all relevant observations were made about the color and its relations to other colors. Call this color: color314. Now consider the sentences (a) and (b).

(**a**) Color314 is red.

(**b**) ‘Red’ applies to color314.

In both (a) and (b), we are employing ‘red’. And in both cases we may have difficulty determining whether the sentence is true or not, even if all possible and relevant observations have been made. So, intuitively, one may employ words in both cases of using and cases of mentioning.

Moreover, when I speak of properties, I mean to speak about those things such that, for every existent, that existent either has it or lacks it and doesn’t both have it and lack it.

And when I speak of sorites-susceptible language, I am speaking of language like ‘is red’, ‘is bald’, ‘is generous’, ‘is tall’, ‘is a performance of Chopin’s Nocturne Number 7 in C# Minor’,

and so on. I am talking about the language that may be employed in the formulation of a sorites argument, with the caveat that the language is used in accordance with typical use. Then 'is prime', 'is square', 'is a natural number', and some other technical terms do not count as sorites-susceptible, for they cannot be used to formulate a sorites argument, given their typical technical uses.[4] On this use of 'sorites susceptible language', sentences that can be used when discussing so-called "clear cases", do still count as sorites-susceptible. So 'is bald' is a piece of sorites susceptible language, even though it can be used to (seemingly) say something true about a "clear case" of someone with no hair. The justification for this is simple: we can still situate that "clear case" in a sorites series. We can then partake *of that same use* of language as it was in the clear case, and purport to be saying the *same thing* for all members in the entire sorites series. We would then have a sorites argument, putting pressure, at least in part, on our original assumptions. Put intuitively: the clear cases can become less clear once we start moving through the series. Of course, as natural language changes over time, and typical uses change over time, so too may the class of sorites-susceptible language.

Finally, when I say that when we employ sorites susceptible language, we are *as such* ignorant, I mean: competent use of and reflection on sorites-susceptible language does not *on its own* enable us to know whether we are referring and expressing properties with some use of that language. The mere discussion of a sorites series and the formulating of a sorites "argument", no matter how competent the speaker, does not on its own enable us to know. It is consistent with

[4] There is always ambiguity. For example, when looking for a good spot to eat lunch, I one might utter 'the clearing on the hill is prime'. Sometimes context can help us determine which meaning is the one intended or most useful. I set those issues aside. Exactly how *ambiguity* affects our ability to use classical logic is a separate question.

this that we are able to overcome this ignorance in particular cases. So gaining that knowledge is not ruled out.[5]

4.1.2 Quasi-nihilism compared to other views

The quasi-nihilist does not maintain, along with the standard epistemicist, that all statements that employ sorites-susceptible language, where something is said to be the case, are either true or false (and that we have some unknown and/or unknowable breakpoint in a sorites series). The quasi-nihilist remains silent there. Moreover, the quasi-nihilist does not maintain, along with the nihilist, that all statements that employ sorites-susceptible language, where something is said to be the case, are cases where semantic notions do not apply. The quasi-nihilist is also silent there. So, what do they say?

The quasi-nihilist can take a position that is consistent with both epistemicism and nihilism, on the question of what is required to state a truth about a thing. The quasi-nihilist can assert a necessary condition: in order to state a truth (or falsity) about a thing, one must predicate a property of that thing, where that thing has that property (or does not).

I say that someone who asserts the bare quasi-nihilist thesis from above *can* but is not forced to assert this. In all of what follows, I shall use 'quasi-nihilism' to refer to the conjunction of the bare thesis above and this necessary condition. So I will be defending a particular manifestation of bare quasi-nihilism. This manifestation has important benefits.

[5] A view with one important similarity to mine is Rosenkranz (2010), who argues that we lack the knowledge and background conditions necessary to determine whether for each vague predicate, some property is expressed. This claim is importantly similar to the bare thesis of quasi-nihilism. However Rosenkranz goes on to theorise about "borderline cases", and to suggest a non-classical logic that does not uphold LEM and LNC as logical principles (185). As his primary target is epistemicism, he does not discuss what is shared in common between the nihilist and epistemicist. He also does not make use of nihilist tools—tools I use to explain how our language can be apt without being truth-apt.

The nihilist says that, for sorites arguments, all such sentences fail to express properties, and so none give us sharp cutoffs. The standard epistemicist says that all succeed, and so all give us sharp cutoffs. The quasi-nihilist says that, by virtue of our linguistic competence and ability to formulate a sorites argument, we are not thereby in a position to know whether our use of the sentences enables us to refer or to express properties. We are, *as such*, ignorant about which formulations express properties. So we are, as such, ignorant about whether there are sharp cutoffs. We do not know which of our various uses is achieving this, *as a general claim* about sorites-susceptible language.

More specifically, the quasi-nihilist says, we are, as such, ignorant about which formulations of the sorites paradox *uniformly* express properties. Let us remember the 7,766,000 statements we can have about our original sorites series. That is, let us remember the ability we have to assertorically put forward each of the sentences from the following list.

$\mathbf{S_1}$: 1 is a tomato plant.
$\mathbf{S_2}$: 2 is a tomato plant
…
$\mathbf{S_{7,766,000}}$: 7,766,000 is a tomato plant.

We cannot from the outset rule out that with every single statement there is a property being expressed, but that there is not one *particular* property being expressed across all of these statements. This would be a case of consistent, but non-uniform property expression. It is *consistent* because *all* sentences put forward are used to express some particular property (or other); it is *non-uniform* because the statements that express properties do not all express the *same* particular property. If a sorites argument had consistent but non-uniform property expression, the sorites argument would genuinely count as an argument, composed only of things that are truth-apt. It would, however, be equivocal.

So the quasi-nihilist claims ignorance about whether or not we are uniformly expressing properties when we employ sorites-susceptible language. We employ sorites-susceptible language in the course of presenting sorites arguments. So, for sorites arguments, either we have something *non-sound*[6], or we have an argument with semantic properties like *being sound* or *being unsound*. This view may seem to merely break up the logical space. It provides more, however. More detail needs to be given for what a quasi-nihilist may say about particular sorites arguments.

4.1.3 Quasi-nihilism on particular sorites arguments

Suppose that 'is a tomato plant' does uniformly express a property across all relevant occasions of its having been competently used.[7,8] In such a case, the above argument (P1)-(C) would be composed of truth-apt things, and it would be valid. It seems quite likely, in that case, that (P2) would be false. Presumably, if our common use of 'is a tomato plant' uniformly expresses a property, such as to divide the group of things that have it from everything else, there would be two consecutive members of our series such that one has the property and the other does not. This assumes that if our competent use of 'is a tomato plant' uniformly expressed a property, it would hold of the clear case (e.g., 7,766,000), and not hold of a clear non-case (e.g., 1).

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[6] Here by 'non-sound' I mean something that is neither sound nor unsound. A tennis shoe is another example of something non-sound. We would have something non-sound if the premises of our original "argument" were not composed of or expressing propositions. This would happen—given the necessary condition accepted—if properties were not being predicated.

[7] No doubt there would still be uses of 'is a tomato plant' that count as competent, but which are not about tomato plants. There is always ambiguity, metaphor, and parasitic uses which can have very different meanings from some more standard use. So, then, here we would be talking about a proper *subset* of occasions of competent use of 'is a tomato plant'. Even more, in this case, because we are concerned with the *sorites paradox*, we are concerned with competent use exemplified by the putting forth of a sorites argument. For example, for the argument above, we are talking about the uses: (P1), (P2), and (C).

[8] Henceforth, 'competent' and 'relevant' will be dropped for ease of exposition.

Of course it is possible that this assumption is false. It is possible that, unbeknown to us, our use of 'is a tomato plant' picks out a property that holds of *all* the items in our series. Such a case would give us a sound argument, counter to intuition. Alternatively, we can imagine that the property picked out holds of *none* of the items in our series. This would give us an unsound argument, again counter to intuition. Quasi-nihilism does not rule out such cases. However, given that most or all take there to be a very tight connection between the ways our words are appropriately used and what they mean and pick out, it is unlikely that one would want to embrace those possibilities. It is, again, part of our pre-theoretical phenomenon that 'is a tomato plant' and 'is not a tomato plant' have appropriate uses. The former clearly applies to 7,766,000, while the latter clearly does not. It would be difficult for someone to account for this while maintaining such a cleavage between the appropriateness of those statements and their predicating properties that either hold of all the members or hold of none of the members. So, though quasi-nihilism leaves those possibilities open, some actual quasi-nihilist may, of their own accord and for good independent reasons, wish to close them off.

Thus the quasi-nihilist may assert a conditional.

(**Conditional 1**): *if* a predicate uniformly expresses a property across the occasions of use in a sorites argument, *then* we have a valid argument, likely with a false premise.[9]

Were we to have formulated this sorites argument with a series of conditionals, then the false premise would be the one that asserts, of some *particular* member, that if that member (call it *n*) is a tomato plant, then the preceding member (call it *n-1*) is also a tomato plant, where those

[9] Of course, as explained above: it is a logical possibility that we have a sound argument. This, as argued, may be thought quite implausible. So here the manifestation of quasi-nihilism that I am defending ignores the possibility that, given a sorites argument, we could be predicating a property that holds of all or no members of a sorites series. A different quasi-nihilist view may leave this possibility open.

particular members are situated along the breakpoint line. The quasi-nihilist, like the epistemicist, would not have to say what the breakpoint is, and so would not have to say which premise is the culprit. Again, on their view, merely being competent with the language does not on its own enable us to know if we are genuinely referring and uniformly expressing properties. So of course our competent use does not, on its own, enable us to know *where any breakpoints are*.

Now suppose, on the other hand, that 'is a tomato plant' does *not* uniformly express a property throughout the argument. In such a case, one of two things could be happening. Either there is consistent but non-uniform property expression, or there is not consistent property expression. We can take each in turn. If the former is our situation[10], then we have an equivocal argument: 'is a tomato plant' doesn't mean the same thing throughout the premises and the conclusion. So the argument is unsound because it is invalid.

If the latter is our situation, then we do not have the putting forth of only truth-apt things, and so we cannot have all true premises. So the argument is non-sound, but is neither valid or invalid nor sound or unsound.[11] In such a case, the quasi-nihilist, like the nihilist, would remark that we may have appropriate use of language, but we do not have the asserting of truth-apt things. So, we have moved incorrectly—though perhaps understandably—from reading the aptness of our use as truth-aptness.

Thus the quasi-nihilist may assert a second conditional.

(**Conditional 2**): *if* a predicate does *not* uniformly express a property across its occasions of use, then we have either an invalid argument, or something non-sound.

[10] Boundary-shifting contextualists like Fara argue for such a position. See Graff (2000).
[11] In this case, just as with nihilism, the quasi-nihilist would say that because we do not have truth-apt things expressed by all the premises and the conclusion, there is a sense in which we can only loosely call it an "argument".

The standard epistemicist and the nihilist can also assert both (Conditional 1) and (Conditional 2). However, they assert more, which the quasi-nihilist does not. The standard epistemicist asserts: (A) all genuine sorites arguments are such that the operative sorites-susceptible term uniformly expresses a property, rendering all of those arguments (except the line-drawing formulation) unsound because of a false premise. And the nihilist asserts: (B) no genuine sorites arguments are such that the operative sorites-susceptible term expresses a property, rendering all of those arguments non-sound.

Crucial to the quasi-nihilist's stance is that they *do not assert* either (A) or (B). Their silence enables them to allow that our language could uniformly expresses properties on some but not all occasions. It enables them to use a major tool of nihilism: to assert that the aptness of our language can swing (somewhat) independently of its truth-aptness. That is, we can explain the successes we have with our language without positing either consistent or uniform property-expression among the uses of our predicates. This was discussed and explained in §3.3.3 Thus we need not assume (A) or (B) in order to respond to the sorites paradox. Now, of course, both (A) and (B) are consistent with quasi-nihilism. However, the quasi-nihilists' silence on their truth provides them with some benefits, which we turn to in §4.3.

4.1.4 Diagnosing the error in sorites reasoning

When discussing the sorites paradox in Chapter 1, I noted that a solution to it must both (I) salvage our pre-theoretical intuitions that gave rise to the paradox, and (II) avoid the implausible commitments we seem saddled with (e.g., the "absurd" conclusions and some implausible contradictions). So far, we have seen the quasi-nihilist may do (II). A quasi-nihilist's assertion of the first and second conditionals above helps them to avoid the implausible commitments; for with every argument we come across, we have some (or other) response ready.

We may now see how the quasi-nihilist accomplishes (I). To do so, we need to understand what motivates our assertion of the premises of sorites arguments; but this must be done in a way that still allows us to escape the arguments. So we need to *diagnose the error* in sorites reasoning, while still acknowledging the strong pre-theoretical intuitions.

As noted above, quasi-nihilism allows the aptness of our language practices to swing (somewhat) independently of its truth-aptness. So we may look to our natural language practices to see how we get committed to accepting the premises of a sorites argument. Among our language practices we find the *aims* we have when using words, and our *using* of the words—the many applications of terms we can survey. It is surely a part of our everyday language practices that a majority would apply 'tomato plant' to the mature and heavy-with-fruit plant. These are often called "paradigm cases" or "base cases". We could prove this by studying a large random sample of competent speakers, and sample their linguistic behavior. With this same method, we could also work to understand why we deem the conclusion of a sorites argument "absurd". Our language practices include both strong propensities to apply, *and* strong propensities to withhold a predicate or to apply the "negation" of a predicate (e.g., to apply 'is *not* a tomato plant'). A majority of competent speakers of English would not apply 'tomato plant' to the ungerminated seed. These terms have an appropriate use, in great part because they are needed to allow us to draw our attention to some things and not others. So far, so good. We have seen that looking to our language practices helps us to see how we are motivated to assert the premise about a base case, and to deny the conclusion.

Things get more complicated when we move past the base case, and try to understand what motivates asserting the middle stuff—either an inductive clause, a long series of conditionals, disjunctions, or negations, etc. What motivates this, and where is our error? Here, I

follow some of Ludwig and Ray's (2002) diagnosis of the error in sorites reasoning.[12] Ludwig and Ray are nihilists, who argue that no sentences containing "vague" expressions are truth-evaluable.[13] Yet they provide a nice meta-linguistic diagnosis of what leads us into the quagmire of sorites reasoning, which can be co-opted by the quasi-nihilist.

On the Ludwig and Ray diagnosis, the error in sorites reasoning *stems from* the assumption that the predicates which we use in sorites reasoning are semantically complete—that they have complete senses, and determine for all possible cases whether the predicate applies or not.[14] I think Ludwig and Ray's observation is good, though I prefer a slightly different claim: competent speakers have the unwitting assumption that terms—including sorites-susceptible terms—when used appropriately, refer and uniformly express properties.[15] I say: that unwitting assumption is part of the pretense for when we think about and use sorites-susceptible terms.

Ludwig and Ray then discuss the error in sorites reasoning as the "confusing" of two claims:

> (**i**) our language practices for a term (e.g., 'bald') *are silent* with respect to the application of the term after incremental changes along one dimension (e.g., number, length, thickness of hair), &

[12] Moreover, I discuss one possible diagnosis of the error in sorites reasoning, one which is consistent with quasi-nihilism. It is not the only option; yet it does nicely dovetail with the two main tenets of quasi-nihilism.
[13] Ludwig and Ray (2002), p. 421. The authors also explain their use of 'vague', saying: "a vague predicate admits of at least one dimension of variation (and typically, more than one) in its intended range along which we are at a loss to say when the predicate ceases to apply, though we start out confident that it does" (420).
[14] Ibid, pp. 433-4. Similarly, Gómez-Torrente (2010) discusses and rejects what he calls a "tempting" thesis. He says, "It may be tempting to assume, additionally, that successful communication with grammatically declarative sentences must nearly always use utterances with truth conditions" (231).
[15] The main difference here is that the assumption I discuss gives us generality across all sorites-susceptible language, and not just predicates. So we may countenance any candidate sorites arguments using singular terms. It also isn't an assumption just for sorites reasoning. I posit a general assumption that our language practice could manifest by our engagement with practices for both vague and non-vague language.

> (**ii**) our language practices *affirm* that if a term (or its "negated" cousin) applies in a case (e.g., of *n* hair(s)), then it (or its negated cousin) applies in a case after small incremental change (e.g., adding or losing a hair).[16]

I follow Ludwig and Ray in painting our practice as running together these two; and I follow them in stating that, for a specified case of sorites-susceptibility, a competent speaker has reason to endorse the relevant instance of (i), but not the relevant instance of (ii). Our language practices are certainly silent for many cases, and silent with respect to whether some small incremental change makes the difference for the appropriate application of many predicates. Yet, as Ludwig and Ray note, this is a far cry from our language practices including rules to the effect that if some particular term applies in one case, then it applies when we have some small specified incremental change. Ludwig and Ray claim that our practices do not sanction any such rules. I agree, and think that some discussion is needed on this.

What we discover when we reflect on our linguistic practice is a kind of *tolerance* in applying terms. But we need to be clear on what this tolerance is. A brief caricature of the practices undergirding our linguistic learning can help us here. We as children first learn to apply 'red' to standard firetrucks, to some apples, to some stoplights, and so on. We learn not to apply 'red' to some police cars, to key limes, to other stoplights, and so on. Very sophisticated recognitional capacities are at play here. We can recognize enough about the things we were told to apply 'red' to so that we learn that 'red' can be applied to some cases we haven't considered, and that it can't be applied to other cases we haven't considered. Yet we also can come to recognize that there is not a hard-and-fast rulebook organized by precise ranges of nanometer

[16] See Ludwig and Ray (2002), p. 432-4. There Ludwig and Ray are only using the case of the predicate 'bald' as an example. Here, with (i) and (ii), I make overt the requisite generality assumed for all predicates; and again I allow the discussion of the sorites-susceptibility of other grammatical categories besides predicates.

that can class the color of any object into camps for the appropriate application of our ordinary terms ‘red’, ‘orange’, and so on.

We learn by participating in a linguistic practice where we use terms in the company of other people, such that we are open to correction, and to altering our use to fit in with commonly accepted attributions. We recognize that we can often get away with applying a term to a slightly different case, or to extending the term to a novel, otherwise unconsidered case. We also recognize, in part because there are so many different speakers we can interact with, that we can get away with some applications *but not others*. We are corrected in some cases. So we become sensitive to more contextual features and nuance. Depending on our purposes, we may broaden our bank of, for example, color terms to include ‘fuchsia’, ‘periwinkle’, and ‘mauve’. And this can help us better navigate the practice of adjusting our use to particular communities.

This intuitive, albeit caricatured picture shows us that our linguistic practice allows some tolerance in whether or not we apply a predicate. We are not given instructions on how to apply terms for some cases and for some ranges of cases. So, I say, the kind of tolerance we have is that our practices are *silent* in some respects. This, however, is different from our practices including a rule to the effect that small incremental changes do not make a difference. So, again, I agree that competent speakers have reason to endorse instances of (i) (call these “(i)-claims”), but not instances of (ii) (call these “(ii)-claims”). As (ii)-claims are needed to justify the middle stuff of a sorites argument, the quasi-nihilist can at once accept the pre-theoretical intuitions giving rise to the paradox (they can accept (i)-claims), and point to an error in sorites reasoning (they can reject the conflating of (i)-claims with (ii)-claims, and reject (ii)-claims).

Ludwig and Ray go on to say that the assumption that predicates are semantically complete is *inconsistent* with (i), keeping its difference from (ii) obscured, and allowing us to

confuse (i) with (ii).[17] This, then, is part of the main mechanism they posit for how competent speakers confuse (i) with (ii). I do not follow suit here, because I think that (i) *is consistent* with the unwitting assumption that I discuss, which was: competent appropriate use of terms—including sorites susceptible terms—refer and uniformly express properties.[18]

I do, however, think that the relevant assumption they discuss—and in particular, the assumption I point to—can help us to more specifically diagnose the error with sorites arguments; and I follow Ludwig and Ray in another part of their discussion on this. They claim that, having confused (i) with (ii), people in the grip of sorites reasoning then move between the formal and material modes.[19]

For example, we often talk about the word 'tomato plant', reflecting impressions we have concerning the practices for its appropriate use. Consider the sentence: If 'tomato plant' applies to a member, n, in a sorites series, then it applies to member *n-1* of that series. That is said to be in the *formal mode*. Alternatively, we often use those words to make statements about things. Consider the sentence: If some member, *n*, of our series is a tomato plant, then member *n-1* is a tomato plant. That is said to be in the *material mode*. Then, Ludwig and Ray suggest that people in the grip of sorites reasoning move between formal mode claims and material mode claims.[20] For an example, take a particular instance of (ii) above for 'tomato plant'. Then drop reference to

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[17] Ibid, 433.

[18] Incidentally, I think (i) is also consistent with the assumption that Ludwig and Ray discuss, the assumption of semantic completeness. The assumption of semantic completeness is about some of our predicates having a complete sense. The claim (i) is about our *practices* not giving us guidance about the application of the term when faced with some incremental change. I say it is possible that our practices could be silent, while predicates do express a complete sense. That is to say, there is more to expressing a complete sense than is manifested in our practices of use. More detailed discussion of this is beyond our purview here, though.

[19] Ludwig and Ray (2002), p. 433-4. See Carnap (1937) for early discussion of the distinction between the formal and material modes.

[20] See Ludwig and Ray (2002), p. 434.

our language practices, and simply discuss the term's *truly applying*. Call this (iii_T) (with the subscript 'T' for "tomato plant").[21]

> **(iii_T)** If 'tomato plant' truly applies to member, n, in a sorites series, then 'tomato plant' truly applies to member *n-1*.
>
> **(iv_T)** If some member, n, in a sorites series is a tomato plant, then member n-1 is a tomato plant.

Ludwig and Ray note that, when the predicate is not semantically complete, problems arise for moving between formal mode claims like (iii_T) and material mode claims like (iv_T). They claim that, with sorites susceptible language, we cannot so freely move between those two modes. I agree; and this kind of fleshing out of the error in sorites reasoning can also be co-opted by the quasi-nihilist.

Suppose that 'tomato plant' *does not* express a property when used in a sorites argument. In such a case, the quasi-nihilist can say that use of 'tomato plant' does not truly apply to anything; they assert that to state a truth about a thing, one needs to pick out a thing and predicate a property which that thing has. So (iii_T), as a claim about a word and its semantic properties, can itself have semantic properties, like being true or being false. If the sentence was used appropriately, we would have a conditional with a false antecedent and a false consequent. This is a conditional which is *truth-apt*. It may also be taken to be true; for we can understand the claim as saying that, were 'tomato plant' to truly apply to n, it would also truly apply to n-1. But, independent of more controversial readings of these claims and this toy example of the conditional, the conditional (iii_T) would be truth-apt and could be thought plausible. However,

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[21] Ludwig and Ray (2002) discuss the move from claims like (ii) to claims like (iii) as something we "express more precisely" (433). However, the move from (ii) to (iii) is arguably *not* simply a matter of more precise expression. Claim (ii) is about what our language *practices* affirm, while claim (iii) is about the relation between a predicates truly applying of one member and its truly applying of a preceding member. If we think, as the quasi-nihilist does, that reflection on our language practices does not give us an infallible guide into the uniform property-expression of our terms, then an instance of (ii) could be well supported by our practices while its partner instance in (iii) could be false. Thorough criticism of Ludwig and Ray's (2002) nihilism is out of my purview here, though.

(iv_T) would be different. Since 'tomato plant' does not express a property, its use does not enable (iv_T) to have semantic properties and thus be true or false. So, were (iv_T) the inductive premise of a sorites argument, it would be neither true nor false, rendering the argument non-sound.

Alternatively, suppose that 'tomato plant' *does* uniformly express a property.[22] Then, given our standard series, (iii_T) would be truth-apt and false. Translating into (iv_T) would enable the resulting sentence to also have semantic properties; and it would be false. Then the argument is unsound because it has a false premise.

We can see that moving between (iii)-claims and (iv)-claims can get us into trouble when we are dealing with sorites reasoning. We get a different verdict, depending on the property-expression of the predicate. If the predicate expresses a property, we may freely move from (iii)-claims to (iv)-claims. If it does not, then we may not. The quasi-nihilist may then allege that our unwitting pretense that our appropriately used terms refer and uniformly express properties can mask any problems that arise for moving between (iii)-claims and (iv)-claims. So we may say that the error in sorites reasoning stems from this general pretense. The fleshing out of this error then bifurcates into two main cases, depending on whether the terms refer and uniformly express properties.[23] Ludwig and Ray do not bifurcate these cases, for they assume that all sorites-susceptible predicates do not have complete senses and—when used in sentences—render all the relevant sentences not truth-evaluable.

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[22] By discussing these two alternatives, I ignore the possibility that 'tomato plant' consistently but non-uniformly expresses a property throughout a sorites argument. Ignoring this case is done for ease of exposition; the possibility may still be live for the quasi-nihilist.

[23] So far I have only discussed sentences that would be used in the induction formulation. However the same diagnosis may be given for the conditionals formulation, the disjunction formulation, and so on. All diagnoses would share particular (i)-claims and (ii)-claims. And then, for the diagnosis of formulations that are not inductive, we would not have particular instances akin to (iii_T) and (iv_T); we would have a variety of different sentences, all of which could be represented as a pair, with one in the formal mode and one in material mode.

4.2: Cohering with Classical Logic

So far we have only discussed the quasi-nihilist's handling of paradoxical sorites arguments, but have not seen how the quasi-nihilist can handle challenges to upholding classical logic. The quasi-nihilist has the ability to meet these challenges, which provides their view with some benefits.

4.2.1 Review of the problems for upholding classical logic

Previously (in §1.2.1) I discussed some of the issues the sorites paradox poses for upholding classical logic. I shall simply review them here. There were two parts to this challenge. The first part is that the principle of bivalence (PB), the law of excluded middle (LEM), and the law of non-contradiction (LNC) may be doubted in light of considering sorites-susceptible language. The second challenge is that sorites-susceptible language might undermine claims that classical logic is "the correct logic".

4.2.2 The quasi-nihilist's response

Quasi-nihilism has a response to these issues, and a response that differs from the nihilist and the epistemicist. The epistemicist will admit sharp cutoffs, and say that all sentences used to say that something is the case are either true or false, and that there is a clear set for 'is a tomato plant', though we may not know of particular items in a series whether they are in the set. They will then uphold PB, LEM, and LNC. The nihilist will also work to uphold PB, LEM, and LNC, but by claiming that sorites-susceptible language is not in the business of truth or falsity, and thus doesn't *falsify* the principles. The idea would be that classical logic only strictly applies to items that are in the business of truth or falsity, and thus doesn't strictly apply to our sorites-susceptible language.

The quasi-nihilist, on the other hand, remains silent on the question of whether as a general rule, classical logic strictly applies to some particular reasoning done with sorites-susceptible language. To take the example of 'tomato plant', the quasi-nihilist may say: either an argument that consists of uses of 'is a tomato plant' uniformly expresses a property or it doesn't. If the argument doesn't have uniform property expression, then *either* it doesn't have consistent property expression and thus classical logic doesn't strictly apply (and we have something non-sound), *or* it does have consistent property expression and thus classical logic does strictly apply (and we have an equivocal unsound argument). If the argument does have uniform property expression, then classical logic does apply and we very likely have an unsound argument.[24] In either case we have a response to the original sorites argument. And in neither case do we have a reason to undermine PB, LEM, and LNC. Because our competent use doesn't enable us to know whether we have uniform property expression or not, we are, as such, not able to determine whether classical logic strictly applies. This is consistent with us learning about a particular sorites-susceptible predicate that it uniformly expresses a property. It is also consistent with us learning that a predicate doesn't uniformly express a property. The point, again, is that our appropriate use doesn't *on its own* enable us to know.

On one way of thinking about the quasi-nihilist's response, it seems the quasi-nihilist is saying that we don't know whether classical logic is the correct logic or not. So it may be thought a poor case of "salvaging" classical logic. This, however, slightly misses the mark. The quasi-nihilist can fully uphold PB, LEM, and LNC, just as the epistemicist and the nihilist purport to do. And the quasi-nihilist can also remark that in order to state a truth (or falsity) about a thing one needs to predicate a property that that thing has (or doesn't have). They just

[24] I say 'very likely' because it is still possible that there is a property uniformly expressed that applies to all the members of a sorites series, thus rendering our argument sound. This has been argued as implausible. Again a particular theorist accepting quasi-nihilism may also accept this implausible view.

remain silent on a semantic question: how often does our appropriate language use exhibit this? And remaining silent on this is no challenge to classical logic! It is more a form of logical conservatism. Nor does this silence require that we fail to try to exhibit some features of classical logic in our sorites-susceptible reasoning. For example, using a valid argument form like the least number principle and the provably equivalent mathematical induction is then a *good thing* for helping the structure of our natural language reasoning. Then, in cases where our language use uniformly tracks a property, we are in business. If our language use for many sorites-susceptible predicates doesn't do this, no problem. We often see scientific inquiry proceed by the sharpening of terms, and often by the replacing of observational terms with more theoretical terms. This is all part of the hard work of trying to say true things about the world.

Thus the quasi-nihilist can echo what the nihilist says about the relevance of classical logic to our actual reasoning, even if classical logic doesn't strictly apply to that reasoning. This was discussed in §3.2.5. Furthermore, they also allow there to be cases where classical logic strictly applies to sorites reasoning.

4.3: More Benefits of Quasi-nihilism

Here when discussing benefits that quasi-nihilism has, I discuss benefits quasi-nihilism has when compared to nihilism and epistemicism. I do not discuss supervaluationism. This is for two reasons. First, supervaluationists do not purport to salvage classical logic (together with its standard semantics and meta-theory) from the sorites paradox. Again, they allow deviant moves, like true disjunctions that do not have a true disjunct, true "existentials" that are not satisfied by any particular member of the domain, and so on.[25] Because I am arguing for the salvaging of classical logic *together with its standard semantics and meta-theory*, supervaluationism isn't in

[25] See Keefe (2000, pp. 162-165) and Williamson (1994, pp. 145-154)

the comparison class. Secondly, there is such a divergence in particular views on truth between the supervaluationist on the one hand, and the epistemicist, nihilist and quasi-nihilist on the other. So it is quite difficult to put supervaluationist responses in direct conversation with these others.

4.3.1 Avoiding commitment to widespread sharp cutoffs

When we formulated the paradox above, we noted that 'is a tomato plant' can be replaced by many other words or phrases that are also sorites-susceptible. So we concluded that responding to the sorites paradox requires more than giving some verdict about tomato plants; it requires some kind of verdict on sorites-susceptible language overall. The epistemicists give a verdict, which commits them to sharp cutoffs for *all of our sorites-susceptible language*, and this is one aspect to their view that many find unbelievable. It commits them to saying that a single penny makes the difference between being rich and not rich, that a single grain makes the difference between being a heap and not a heap, that a fraction of a nanometer (even when imperceptible by the human eye) makes the difference between being red and not being red, and so on through the long list of sorites-susceptible language. This is then a cost to the epistemicist.

The quasi-nihilist need not embrace this. Yes, to state a truth we would have needed to express a property, and thus would have a sharp cutoff. However because the quasi-nihilist doesn't think that our competent use of sorites-susceptible language enables us to know whether we are uniformly expressing a property, we are thus not in a position to know this. We thus do not take on such a large commitment. Because the quasi-nihilist thinks that we may embrace the aptness of our language use without positing truth-aptness, we are not forced to require the uniform expression of a property throughout all sorites arguments. So we do not need to posit widespread sharp cutoffs. This is then a benefit of quasi-nihilism.

Of course, for all the quasi-nihilist may say, the epistemicist may be correct that all uses of sentences with sorites-susceptible terms are either true or false, and that there are always sharp cutoffs for the meanings of these terms. The quasi-nihilist point is that we can reap some benefits by not asserting this. In particular, we can avoid being committed to widespread sharp cutoffs.

4.3.2 Avoiding self-undermining worries

When we discussed nihilism, we said the nihilist claims that all genuine sorites arguments are cases where we have a *non*-sound argument, because at least one premise or the conclusion uses sorites-susceptible language, and thus doesn't express a property. Some have argued, quite convincingly, that notions like *sorites-susceptibility* are also sorites-susceptible.[26] To borrow an interesting example from Sorensen[27], consider the following list of predicates of whole numbers: 'one-small', 'two-small', … 'one-quintillion-small', where we stipulate the schema that the predicate '*n*-small' means is either small or less than *n*. So 4-small means: is either small or less than 4. We can then consider the following argument.

(**P1**) '1-small' is sorites susceptible.
(**P2**) If some predicate 'n-small' is sorites-susceptible, then the predicate '*n+1*-small' is sorites susceptible.
(**C**) 'one-quintillion-small' is sorites susceptible.

Surely '1-small' is sorites-susceptible, as it applies to 1, and all other numbers that are small, which is a sorites susceptible matter. However 'one-quintillion-small' is not sorites-susceptible, as it clearly applies to one-quintillion and all whole numbers less than it, and nothing else. Given that these predicates were understandable, and that we can make clear reference to them, it seems we have a genuine sorites series *for sorites-susceptibility*. So then the nihilist

[26] Sorensen's (1985) argument that 'vague' is vague is one example. There he adds that any other term that is supposed to do the same work as 'vague' has the same problems (136).
[27] Ibid, 135.

thesis that employs the notion of sorites-susceptibility *cannot be true*, which looks like a cost to the nihilist.[28] We saw in §3.2.4 that this is a difficult objection for the nihilist to overcome.

The quasi-nihilist need not overcome this objection, even though they use the notion of sorites-susceptibility as well. On the quasi-nihilist view it doesn't follow that no truth is expressed from some use of sorites-susceptible language. That is, the putting forth of a *true* quasi-nihilist thesis is not ruled out, by virtue of the thesis having terms that are sorites-susceptible. This is because it is consistent with quasi-nihilism that a property is uniformly expressed. We are simply, by virtue of competent use alone, not in a position to know. We can, however, work on trying to overcome this situation. We may work to regiment clarity into the thesis, and work to more precisely define 'sorites series', as we have done in Chapter 1. This is a difficult task, and one that may be met with less than satisfactory results, for we are using a vague language to talk about vague language. The important point is that even though the quasi-nihilist may struggle to succeed with a compelling and successful definition of 'sorites-susceptibility', they can at least be hopeful that a property is grasped by *some particular* clear competent use of it. Moreover, pointing this out does not require the quasi-nihilist to change their thesis and replace it with something that is merely *in the spirit of their view*. The nihilist cannot say all of this. This is then a major benefit of quasi-nihilism.

Of course, for all the quasi-nihilist may say, the nihilist may be correct that all uses of sentences with sorites-susceptible terms are neither true nor false, and that semantic notions do not strictly speaking apply. The quasi-nihilist point, again, is that we can reap this benefit by not asserting this. In particular, we can avoid this self-undermining worry.

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[28] Sorensen's argument has generated interesting discussion. For opposition see Deas (1989) and Hull (2005). For defenses, see Varzi (2003, 2005).

4.3.3 A better fit with natural language practices and intuitions

If we survey the wide variety of natural language English that may be used to formulate a sorites argument, we can revel in the multitude of examples, and in the differences in the language use. There is important diversity. Standard formulations of the sorites paradox often note the ubiquity of sorites-susceptibility across our language, yet focus almost exclusively on standard cases, like 'is bald', 'is rich', and 'is tall'. However 'is a tomato plant', 'is a performance of Chopin's Nocturne Number 7 in C# Minor', 'is feeling happy' and 'is safe' are worth exploring too.

Few philosophers attend to the diversity of sorites-susceptible predicates in discussions of the sorites paradox. Keefe briefly discusses this, saying:

> "I shall briefly survey these [types of responses to the sorites paradox] in turn, ignoring the question whether we should expect a uniform solution to all sorites paradoxes whatever their form and whatever predicate is involved... Any response must explain away apparent difficulties with accepting the selected solution; for example, if the main premise is denied, it must be explained why that premise is so plausible. More generally, a theory should account for the persuasiveness of the paradox *as a paradox* and should explain how this is compatible with the fact that we are never, or very rarely, actually led into contradiction."[29]

Keefe also references Wright (1987), who argues that different responses to the sorites paradox may be required for different cases.[30] There Wright focuses on five separate ways in which we might cash out intuitions motivating the inductive premise of a sorites argument.[31] Yet Wright does not focus on the differences among the various predicates we may use. If we attend to these differences, so I say, we find a nice fit with a quasi-nihilist response.

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[29] See Keefe (2000), p. 20. It is worth noting that Keefe's remark here makes it a theoretical desideratum that a theory is compatible with the "fact" that we are rarely or never led into contradiction. This excludes the subvaluationist from the list of competing theories from the beginning. Perhaps their response may ultimately be dispensed with. However, I say that view shouldn't be rejected from first principles.

[30] Ibid, p. 20.

[31] See Wright (1987/1996), pp. 209-210.

4.3.3.1 Diversity in attitudes about term boundaries

We can ask each other about the boundary of a particular term. Yet there are some cases reasonable and competent speakers are less motivated to care about, like 'is a heap'. It is unsurprising to see that many do not bother to care about whether 'is a heap' has a clear extension. Superficial presentations of the sorites paradox can easily generate a kind of dismissive response, something to the effect of: the question of when the addition of a grain of sand makes something a heap is not so important. Sorensen's 'is noonish' is another example. We would say 12:01PM is noonish, and would say 5:00PM is not; but many reasonable and competent speakers may not think it important to ask whether 'noonish' has some sharp cutoff.

This is in contrast to other terms, like 'is generous' or 'is just'. The same reasonable competent speakers might care to ask deeper questions about their meanings, and to ask whether they determine a class. Schoenfield (2016) says, "[i]t is plausible that moral predicates are vague (more on that later), and we certainly care deeply about whether, for example, in some potentially borderline case, an act is permissible."[32] I agree with Schoenfield that competent speakers of the language care and care deeply about the application of some predicates like, 'is permissible'. Setting aside any differences and unclarity about Schoenfield's use of 'vague', we can observe that 'is permissible' is sorites-susceptible. Imagine two particular people of sound mind and spirit having a mutually agreed upon romantic relationship, where each person is exactly 50 years old. Barring adding any more details, this is morally permissible. Now imagine we have a sorites series beginning with this pair, where the successive pair differs in age only by a second (one 50+ ½ second, one ½ second shy of 50). It doesn't seem that changing the difference in ages by one second can make the difference in whether the relationship is *morally permissible*. Yet it does seem that we should all agree that a romantic relationship between a 15

[32] See Schoenfield (2016), p. 258.

year old and an 85 year old is impermissible. Despite being sorites susceptible, competent speakers care very much about the boundaries of 'permissible'.

We may find variation in attitude about questions of term boundaries among philosophers as well. Philosophers could build moral theories according to which moral terms like 'generous' or 'just', though in use exhibit the relevant features for sorites-susceptibility, do express a clear property that we may work to understand (though, perhaps, only imperfectly). Moreover, consequentialist views focusing on pleasure and pain might be formulable with clear properties, thus exhibiting sharp cutoffs for a sorites series for some moral predicates.[33] In any case, the philosophers offering those views might also—and understandably so—care less about the application of 'is a heap'.

Put simply, there are many different sorites-susceptible terms, which differ with respect to how seriously we treat the question of whether they exhibit a cutoff. Quasi-nihilism dovetails nicely with these practices; it allows some cases of sorites-susceptibility to have uniform property expression, and allows some cases of sorites-susceptibility to lack uniform property expression. It thus fits better with these practices than epistemicism and nihilism, which do not allow this.

4.3.3.2 Diversity in sorites-susceptibility

We can also notice diversity among the *manifestations* of sorites-susceptibility. As discussed, Sorensen's 'noonish' is certainly sorites-susceptible. As previously mentioned, 'noonish' has this kind of unclarity and flexibility in use *built into the meaning of the term*. It means something like: roughly noon or close to noon. So part of the meaning of it includes some kind of undefined tolerance. This is not true of other sorites-susceptible words.

[33] Schoenfield discusses the case of "hedonic utilitarianism". See Schoenfield (2016), p. 263 n. 12.

Consider: ‘happy’. We can note that ‘happy’ is sorites-susceptible. Yet ‘happy’ doesn’t mean: *roughly* or close to feeling pleasure or enjoyment. If someone said that they were roughly experiencing or close to experiencing enjoyment, one might talk about helping them so that they can become happy.

There are other differences too. Consider: ‘Monet-esque’. This is sorites-susceptible. One of the features that was central to Monet’s impressionistic style was his use of small yet visible brush-strokes. Using a computer, we could generate a series of images, starting with a painting in the style of Monet and step-by-step decrease the size of the brushstrokes until we are left with a painting with pixel-sized and to-the-naked-eye-invisible “brushstrokes”. This would likely not count as Monet-esque. Of course, there are other features characteristic of Monet’s style, like emphasis on changes in light and shadow, which we could also alter by small changes along the series, ending with something that wasn’t agreed to be Monet-esque. To say some but not all of the resulting series of computer-generated paintings are Monet-esque is to say that some but not all are *similar to* or *reminiscent of* the painting style of Monet.[34] Thus ‘Monet-esque’, though not having some undefined tolerance built into the *meaning* of the term, still has—as part of its meaning—a relation of unspecified similarity or resemblance to the painting style of Monet.

Compare this to ‘concrete’, also sorites-susceptible. For example, we could take a concrete mixture, and one by one add a speck of damp sawdust. If we add enough sawdust, we’ll eventually have a mixture that is 95% wet sawdust, which is not concrete. To say that something is concrete is not to say that it resembles or is similar to or reminiscent of a composite of construction aggregate and cement. If someone tells you they can offer you a material that is reminiscent of a composite of construction aggregate and cement, you might want to gain clarity

[34] Of course, you could use ‘monetesque’ in other ways. For example, it could be applied to a person, thus conveying resemblance or similarity to Monet himself.

on what this material is. You might be resolute in demanding *concrete*. With enough wet sawdust, the resulting compound simply won't set.

Terms thus differ in how they manifest their sorites-susceptibility, be it by having some undefined tolerance built into their meaning, by including some relation of undefined similarity within their meaning, or by—if nothing else—simply allowing the generation of a sorites series. When it is *built into the meaning* of the term that a term is tolerant of small-scale changes, we might have greater reason not to expect the uniform expression of a property that delivers a sharp cutoff. Such is the case with 'noonish'. Similarly, when a term has a relation of undefined similarity built into its meaning, we might have some reason to treat it differently than terms that lack this. If someone tells you a painting is Monet-esque, you may of course have a productive conversation getting clear on what features of the artwork warrant this judgment. Doing so, however, does not require that there is one imperceptible-to-the-naked-eye change that makes the difference here. Conversation could move forward and eventually dispense with any disagreement over the application of 'Monet-esque', focusing then on features we bring to light in our discussion.

On the other hand, we might feel differently about 'happy' or 'concrete'. Those words do not have tolerance or some undefined similarity relation built into their meaning. I think we could coherently imagine, after incredibly rigorous experiment and scrutiny, discovering that there is a speck of wet sawdust that is sufficient to change our judgment about whether 'concrete' should be applied. If we had separate batches of mixture for all the items in the series from concrete to not concrete, and we followed protocol for letting the mixtures set, we could clearly see that some of the mixtures set, and others did not. We could also apply some relevant force to the mixtures we have let dry, and observe whether they can support the force without

cracking or allowing the force-applier to break some plane on the surface of each drying mixture. Thus we may want to treat some sorites-susceptible terms different from others, with respect to our expectation that they uniformly express a property. Quasi-nihilism allows this, and thus fits better with the diversity among the manifestations of sorites-susceptibility.

4.3.3.3 Diversity in attitudes about terms "sticking"

Another difference worth noting is that we care whether some applications of a term *stick*, but don't care about others. This difference in caring about whether a term we've applied sticks can be seen with the phenomenon of slight alterations speakers sometimes make to their language in conversation. Bill says "throw that on the pile". Bob responds: "*that* is not a pile—just a few rags!" Bill retorts that "it is pile*ish*", and they move on. But Julietta asks whether the new gun ordinance will make her neighborhood safe. Laura says that it will be saf*er* than other neighborhoods, or *safe enough*. Julietta may not find this response cooperative or to the point, and for good reason. Julietta may reasonably respond, "That is not what I was asking about! Will it be safe?" So, put broadly, we often simply *alter* the predicate when we are involved in a dispute over whether it applies. But often we do not. Whether some terms we apply stick is a serious matter with social, legal, and political repercussions (e.g. 'terrorism'). Others terms we gladly alter or dispense with, as when we might give up on applying 'red' and instead opt for 'redish' or 'fuschia'. Quasi-nihilism then fits better with this phenomenon and these practices than both nihilism and epistemicism.

4.3.3.4 Diversity in purposes we need terms to serve

Finally, if we think about natural language changing to serve new purposes, we find more important diversity. Over time, we use new words and alter old words so that we may serve our purposes. Some languages have many more words—and more discriminating words—for a

phenomenon than other languages. Some languages lack terms for what speakers of other languages see as useful common concepts. The Pirahã language is alleged to lack both color and number terms, for example.[35] Given that there are a variety of different purposes we need words to serve, and that these purposes differ with respect to how precise our language practices need to be to serve those purposes, it would be unsurprising to discover that some but not all of our terms uniformly express properties when used in a sorites argument. The quasi-nihilist doesn't theorize that our terms uniformly express properties in these cases, or that they routinely do not express properties in these cases. Thus quasi-nihilism fits better with ordinary plausible intuitions that the purposes we want terms to serve are varied—and varied with respect to how precise the terms need to be.

4.3.4 Supplementing

Let us go back to our discussion of 'is a tomato plant', which is sorites-susceptible. Saying that 'is a tomato plant' is sorites-susceptible requires that, were we to test, there would be some general agreement among competent speakers that the predicate applies to some first case, that the predicate doesn't apply to some last case, and that there aren't consecutive members such that it applies to the former and doesn't apply to the latter.

4.3.4.1 Learning that a predicate expresses a property

I noted in Chapter 1 that we might coherently imagine discovering some biochemical (or other) marker(s) to determine, for every member of a sorites series for 'tomato plant', whether 'tomato plant' truly applies. This is to imagine that—*consistent with current appropriate use of 'tomato plant'*—a property is expressed exhibiting a sharp cutoff. This may seem hard to imagine, because we may be tempted to say that any biochemical or other discoveries would

[35] See Everett (2005).

alter the meaning of ‘tomato plant’. But imagine that the discoveries don’t disrupt our previous views on tomato plants, but better help us to, to take one example, determine when germination is completed. Suppose, then, that this is known to be the salient feature needed to facilitate understanding of the true application of the predicate. I say that we can coherently imagine discovering this, and supplementing our understanding of the relevant language. We would be learning of some sorites-susceptible language that it expresses a particular property. Quasi-nihilism has the benefit of better allowing this kind of supplementing of our understanding of sorites-susceptible language. This is in contrast to nihilism and epistemicism.

On the nihilist’s view, if the predicate is “vague”, it would not express any property. For if it did, semantic notions like ‘truth’ and ‘falsity’ would hold of statements predicating this property. Assuming that the case described above is coherently imaginable and possible, the nihilist is then forced to abandon their theory, or to more clearly identify the phenomenon they are giving a theory of, such that this case can be excluded from counting as “vague”. For example, the nihilist cannot claim that a predicate that we previously thought was sorites-susceptible turns out not to be sorites-susceptible. Given that our definition of ‘sorites-susceptible’ is based on general agreement of competent speakers, so long as there was the relevant kind of general agreement, there was sorites-susceptibility. So the nihilist must clearly identify what their theory is about—what ‘vagueness’ can be taken to mean—in a way which is non-trivial and non-question-begging. This is an extremely difficult task, since the many examples of sorites-susceptibility are not pinned down as having some clear common feature. They are simply illustrated as cases that can be used to generate a particular kind of series and argument, and often brought under the umbrella of ‘vague’.

The standard epistemicist also has some trouble with this case. Standard epistemicists, like Williamson and Sorensen, are already committed to there being a cutoff for appropriate use of 'is a tomato plant', and without their having knowledge of any particular property expressed by 'is a tomato plant'. Their general thesis commits them to it. And their thesis is based on their intuitive idea that sentences that are used to say that something is the case (whether formed with sorites susceptible language or not) are always either true or false; and thus, in a series of members from "not being a tomato plant" to "being a tomato plant", we always have a first tomato plant. Thus the standard epistemicist cannot supplement their understanding of terms *like the quasi-nihilist*. All they can do is come to understand *the location* of the cutoff they previously posited. The quasi-nihilist can allow supplementing such that we come to understand *that the predicate expresses a property*—that there is a cutoff.

4.3.4.2 Learning that a predicate does not

We can also coherently imagine a different sort of case. Perhaps there is a sorites-susceptible term that we believe is contentful, and we later discover it to have no referents or instances. One way of imagining this is to consider that we become eliminativists about some entity or phenomenon, and dispense with the terms we previously used to purport to pick out that entity or phenomenon. Another way of imagining this is to consider that we have a term that we take to express a property, and yet after some critical observation, realize it is multiply-ambiguous between expressing one of many properties, or is indeterminate in its application. Were any of that language sorites-susceptible—and most of our language is—the quasi-nihilist view allows us to supplement our understanding of the extension of it, allowing it to be null or indeterminate.

On the standard epistemicist's view, a statement that is used to say that something is the case is either true or false. We thus have a breakpoint in any sorites series where we apply the same predicate to each of the members. Assuming there is a coherently imaginable and possible case where we learn that a term does not express one property, the epistemicist either has to abandon their view or, as we saw above with the nihilist, more clearly delineate the phenomenon their theory applies to. This is also an extremely difficult task for the epistemicist. Just as with the nihilist, the many different cases used to construct a sorites argument are not pinned down as sharing some clear common feature. We remember from Chapter 2 how Williamson clarified 'vague'. He first discussed unclarity that could have arisen at a certain point in time concerning whether Rembrandt was old. Then he claimed: "An expression or concept is vague if and only if it can result in unclarity of the kind just exemplified."[36] So I say again: cases that can generate a particular kind of series and argument are merely illustrated, and then brought under the umbrella of 'vague'.

4.3.4.3. *Benefits of supplementing*

Quasi-nihilism thus allows flexibility in discovering new features about our words—features relevant to whether particular predicates express a property. The quasi-nihilist can allow the plausible open possibility that we could discover about some of our predicates that their appropriate use expresses a property, or that their appropriate use does not. Given that the question of whether our predicates express properties may not be merely a matter of philosophical theory, the quasi-nihilist has an important benefit. They are silent on some questions that could be informed by scientific study. Being silent there is good

Of course, one might deny the possibility of these kinds of cases, perhaps because of anti-externalist sentiments. A philosopher may alter their theory of meaning such that the verdict is

[36] Williamson (1994), p. 2.

always that the relevant sorites-susceptible words change their meaning when the relevant discoveries are made. I am not maintaining that some version of externalism is the correct account. I am merely noting that, if one finds the situations coherent, quasi-nihilism can better accommodate them. Thus quasi-nihilism fares better than both nihilism and epistemicism.

4.4: Objections to Quasi-nihilism

4.4.1 Quasi-nihilism is not a solution

One objection to the quasi-nihilist response to the paradox is to say that it is a not a solution. According to quasi-nihilism, we are as such ignorant about whether our appropriate employment of sorites-susceptible terms refers and expresses properties. So we are as such ignorant about whether a particular sorites argument is sound or unsound or non-sound. It may be objected that this doesn't provide us with the same kind of decisive solution other responses give. For example, the epistemicist gives us a verdict for all sorites arguments. They are all unsound, and all have a false premise (except the line-drawing formulation). The nihilist gives us a verdict too: they are all non-sound, as semantic properties do not apply. So, the objection goes, isn't the quasi-nihilist simply saying that she doesn't know what is going on with the class of sorites arguments, and that a variety of different things could be going on? Then, isn't epistemicism preferable because it gives us a solution for all sorites arguments?[37]

I think we can respond to this objection by dispensing with the word 'solution' entirely. Call quasi-nihilism a thesis. Call epistemicism and nihilism theses. The objection then becomes: isn't the thesis of epistemicism or the thesis of nihilism preferable to the thesis of quasi-nihilism because they are more uniform in its treatment of sorites arguments? I say: no. Part of the appeal of quasi-nihilism is that it doesn't give us a prescribed response for all sorites arguments, which

[37] Thanks to Jeffrey Goodman for raising this objection.

contain many different sorites-susceptible terms. The benefits of this were discussed above in §4.3.

In addition, the quasi-nihilist is not forced to say that we *never* know whether some particular sorites argument is non-sound or unsound or sound. The quasi-nihilist says that, by virtue of mere competent use, we are ignorant. Yet, as noted above, the quasi-nihilist says that competent speakers may be able to study our language to overcome their ignorance and supplement their knowledge of a particular term. It is consistent with quasi-nihilism that we can learn more about our terms and come to see that a particular treatment of some term is more appropriate.

In fact, the quasi-nihilist allows that we are able to reflect on our language practices and uphold some theory of meaning that closely ties the appropriate application of our terms with any properties they express, thus excluding the possibility that sorites-susceptible predicates express some property that holds of all members of a sorites series. On such a manifestation of quasi-nihilism we would exclude sorites arguments from counting as *sound*. Thus, even though the *thesis* of quasi-nihilism doesn't exclude sorites arguments from counting as sound, some particular manifestation of quasi-nihilism can. As noted previously, the manifestation considered here does.

It is worth remembering that the epistemicist doesn't provide us with all the precise details needed in order to see how all sorites arguments go wrong. For example, on the conditional formulation of the sorites paradox, the epistemicist does not tell us *which conditional* is false; they merely say that some conditional or other is false. The same is true for the epistemicist on the disjunction and negation formulations. The quasi-nihilist simply embraces some more—though not necessarily total—unclarity.

4.4.2 Epistemicism is more elegant

The above objection might be reframed as an appeal to the theoretical virtue of syntactic simplicity, or elegance. It might be objected that there is reason to prefer epistemicism over quasi-nihilism, because it has fewer and/or more concise basic principles. Such an objection might stem from the observation that a quasi-nihilist would have the thesis of quasi-nihilism (as we have been using it: the bare thesis conjoined to the necessary condition for stating a truth about a thing), conditionals 1 and 2 from above, and—on the manifestation of quasi-nihilism being defended here—some theory of meaning that ties the appropriate application of our terms to any properties they express. Then, so the objection goes, isn't epistemicism more elegant?

To respond to this objection, let us remember what principles the epistemicist is committed to. Take Williamson for an example. He claims that all uses of a sorites susceptible sentence— all statements that say that something is the case— are either true or false and not both, and that there is a breakpoint in any sorites series between one member's having (or lacking) some feature, and a subsequent member's lacking (or having) that feature.[38] This epistemicist thesis does not *state* the necessary condition that the quasi-nihilist thesis overtly states: in order to state a truth (or falsity) about a thing, one needs to predicate a property of a thing which that thing has (or lacks). Yet this necessary condition is both *consistent* with epistemicism, and a basic assumption of epistemicism. The requirement of a breakpoint is downstream of requiring that statement-making sentences also predicate properties. We get the breakpoint because the predicate expresses a property.

Moreover, the epistemicist—qua being a proponent of classical logic—is also committed to (Conditional 1) and (Conditional 2) from above. If a predicate expresses a property, then there

[38] See Williamson (1994), pp. 187 & 193.

is a breakpoint. This is not an analysis of property, but a fleshing out of what I said I mean by 'property'. So if a predicate expresses a property, and does so uniformly throughout a sorites argument, then the argument is valid and thus sound or unsound. If the predicate does not uniformly express a property throughout a sorites argument, then either it consistently expresses a property or it doesn't. The argument, then, is either equivocal and invalid (for the former case) or non-sound (for the latter case). Standard epistemicists assume that all relevant cases uniformly express properties, and so the two conditionals are not brought into discussion. They must, however, be taken to be true on their view. Perhaps the conditionals may be excluded from counting as a "basic principle", though more would be needed to clarify this.

The last principle of the manifestation of quasi-nihilism considered here is more of a placeholder: some theory of meaning which ties the appropriate application of our terms to any properties they express. What that theory would need to uphold is the following: *if* it is appropriate to apply a term to one case (call it a "clear case"), while also appropriate to deny its application to another case (call it a "clear non-case"), and the term uniformly expresses a property, *then* the property holds of the "clear case", and doesn't hold of the "clear non-case". This, however, is also an unstated assumption of standard epistemicism. Standard epistemicism is often simply described as accepting a cutoff in a sorites series.[39]

Perhaps more may be said to specify a notion of "basic principle" or a notion of "concision" relevant to applications of 'elegant'. Perhaps, given such an explication of 'elegant', quasi-nihilism could turn out less elegant than epistemicism. It is beyond my purview here to discuss general arguments for and against theoretical elegance, and the variety of particular candidates for explicating 'elegant'. Given our discussion so far, I find that doubtful. In any case, I can agree that it is plausible that, if all else is equal between the solutions, something like a

[39] See Hyde (2011a).

"syntactically simpler" solution is preferable. However, even if we could enumerate the relevant principles and measure their concision, such that epistemicism is more elegant than quasi-nihilism, I would still maintain that all else is *not* equal. If my arguments above were successful, quasi-nihilism has some important benefits over epistemicism.[40]

4.4.3 Why prefer quasi-nihilism over epistemicism or nihilism?

Another objection to quasi-nihilism is *epistemic*. The quasi-nihilist says that competent language use does not on its own enable us to know whether or not our sorites-susceptible terms refer and express properties. So, the objection goes, the quasi-nihilist can't have reason to prefer quasi-nihilism over epistemicism. If quasi-nihilism is correct, then the quasi-nihilist should not be in a position to know that the epistemicist's treatment of sorites-susceptible terms is incorrect; nor should the quasi-nihilist be in a position to know that nihilist's treatment is incorrect.

This objection points out something correct, something acknowledged earlier. First, quasi-nihilism is consistent with the standard epistemicist's claim, (A): all genuine sorites arguments are such that the operative sorites-susceptible term uniformly expresses a property, rendering all of those arguments (except the line-drawing formulation) unsound because of a false premise. Second, quasi-nihilism is consistent with the nihilist's claim, (B): no genuine sorites arguments are such that the operative sorites-susceptible term expresses a property, rendering all of those arguments non-sound.

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[40] This objection from elegance may be made using nihilism in place of epistemicism. The basic response to this objection is the same. First, the nihilist has their basic thesis. Nihilism is also consistent with the quasi-nihilist's necessary condition for stating a truth about a thing. That condition is also a basic assumption of standard nihilist views. And so too with (Conditional 1), (Conditional 2), and the relevant theory of meaning. Finally, and again, even if there were a clear sense in which nihilism may be shown to be more "elegant", I would still maintain that all else is not equal.

What has been suggested here is that the quasi-nihilist can reap benefits by *not asserting* (A) or (B); and this is different than *denying* (A) or (B). By not asserting (A) or (B), we receive the benefits discussed above. The quasi-nihilist could allow the open epistemic possibility that (A) is true, or that (B) is true.

I say that the quasi-nihilist *could* allow the epistemic possibility that (A) is true, or that (B) is true. However they *need not* take these to be viable options. We can reflect on our language practices, on the variety of different terms that are sorites-susceptible, on the different ways we treat those terms, and on the different aims our use of those terms serve. Given these observations, the quasi-nihilist may have some reason to *doubt* the truth of (A) or (B). They may find it implausible that such sweeping semantic generalizations could be correct. This, then, though perhaps falling short of knowledge that (A) is false or that (B) is false, may still allow them reason to prefer quasi-nihilism as a solution. Thus quasi-nihilists can have reason to prefer their response over epistemicism and nihilism.

4.4.4 The predicate 'expresses a property' is sorites-susceptible

In response to the claim that quasi-nihilism avoids the self-undermining worries of nihilism, one might object that 'expresses a property' is sorites susceptible. If 'expresses a property' is sorites-susceptible, then the quasi-nihilist's thesis deserves the same treatment that 'is a tomato plant', 'is bald' and the rest get. So the quasi-nihilist would have a different self-undermining worry, and be committed to: merely by virtue of competent use, we are not in a position to know whether or not quasi-nihilism is true. This, so the objection goes, would still seem to be a bad spot for the quasi-nihilist to be in.[41]

[41] Thanks to Tom Adajian for good discussion of this objection.

The response to this objection has a few parts. Let's begin by noticing that, unlike the nihilist, the quasi-nihilist need not overcome the objection that their thesis implies its own non-truth. That alone is an improvement. It can easily be seen that, if 'expresses a property' is sorites-susceptible, it is consistent with quasi-nihilism that quasi-nihilism is true; for it is consistent with quasi-nihilism that sorites-susceptible sentences may be used to state truths.

In fact, quasi-nihilists allow that on a particular occasion a sentence could be used to accomplish more than it accomplishes on some other occasion. They allow the aptness of our language use can swing independently of its truth-aptness. Yet it is still possible that by some use of the language the quasi-nihilist can succeed in using predicates (e.g. 'expresses a property') to predicate some property of things (e.g. statements). The quasi-nihilist also allows us to overcome ignorance we have in some particular cases, and to supplement our knowledge of our terms. This opens up the possibility that we could learn of some careful uses of 'expresses a property' that they express a property.

For this objection to have serious pull, a plausible sorites series needs to be described. Simply claiming that a predicate has this feature is not enough. I have not seen a plausible sorites series for 'expresses a property'. I think we can work to be quite clear about what we can convey with 'expresses a property'. To say that a predicate expresses a property is a shorter way of saying: some particular use of the predicate picks out one and only one property. Short of a giving a definition of 'property', we can say: a property is something such that, for all things there are, either those things have it or lack it, but they do not both have and lack it. Properties determine classes, and separate all items into a set and its complement. A candidate example of a predicate that expresses a property is: 'two-membered'. For any things we can talk about, either they are sets with two members or they are not. This, of course, does not settle the question of

which things are sets, or if there *are any* sets; and, of course, much more may be said about this candidate example.

Thus the quasi-nihilist may assert the following: for every candidate sentence, either something is picked out and a property is predicated of it, or this is not the case. So, for any alleged sorites series for 'expresses a property' the quasi-nihilist may accept a sharp division. Again, we would still need a plausible sorites series to start with.

4.5: Conclusion

Suppose you are a proponent of classical logic in that you uphold the principle of bivalence, the law of excluded middle, and the law of non-contradiction as principles about propositions. Perhaps you uphold some particular logic, like FOL with identify, as correct. Epistemicists, nihilists, and quasi-nihilists all agree, as do boundary shifting contextualists and many others. Call these folks "proponents of classical logic".

Suppose further that you agree with the necessary condition that in order to state a truth about a thing, one needs to predicate a property the thing has. Epistemicists, nihilists, and quasi-nihilists alike are committed to this. So are some boundary-shifting contextualists, like Fara. The semantic question is: how often is our appropriate use of sorites-susceptible language picking out a thing and predicating a property of it?

I've argued that the quasi-nihilist gains important benefits over nihilism and epistemicism by not giving a uniform answer to the semantic question (§3.1-3.4). Some of the arguments I gave can be extended to boundary-shifting contextualisms, and to other views that are more dissimilar (e.g. supervaluationism). Yet, because my focus has been on proponents of classical logic (with its standard semantics and meta theory) who uphold the necessary condition for

stating a truth, here I've focused primarily on quasi-nihilism's benefits over nihilism and epistemicism.

Reflecting on the benefits gained reveals the quasi-nihilist's dialectical advantage. The quasi-nihilist can ask the epistemicist what reason they have for being an epistemicist, rather than a quasi-nihilist. In particular, they can ask the epistemicist what reason they have for asserting (A)—that all genuine sorites arguments are such that the operative sorites-susceptible term uniformly expresses a property—rendering all of those arguments (except the line-drawing formulation) unsound because of a false premise. The epistemicist must provide some reason for choosing to assert (A), rather than remaining silent on its truth. Since, as the quasi-nihilist argues, we can accommodate the aptness of our language practices without accepting all of them as truth-apt, the mere competence of—and confidence in—our language use does not seem to be enough reason to assert (A). So the epistemicist must either deny that our language can be apt without being truth-apt or appeal to notions outside of the competence of our language use to justify their assertion of (A). If they do the former, we need an explanation of why the aptness of all of our language use requires the expressing of a property. This explanation is far from clear. If they do the latter, they cannot appeal to being a proponent of classical logic to justify asserting (A), because quasi-nihilists are too; Nor are extra-linguistic features like elegance live candidates to appeal to, in part because the benefits accrued to quasi-nihilism do not make all else equal.

A similar line of inquiry can be sustained with the nihilist. The quasi-nihilist may ask what reason the nihilist has for asserting (B)—that no genuine sorites arguments are such that the operative sorites-susceptible term expresses a property, rendering all of those arguments non-sound. The nihilist too must provide some reason for choosing to assert (B), rather than simply remaining silent on its truth. Both the quasi-nihilist and the nihilist agree that we can

accommodate the aptness of our language practices without accepting them as truth-apt. Yet, as the quasi-nihilist thinks, accepting that does not require saying that our appropriate use *never* expresses a property. In fact, given that the nihilist already thinks that the aptness of our language practices does not require truth-aptness, it would be particularly puzzling for them to assert that we could look just at our actual language practices in order to tell that our sorites-susceptible predicates consistently *do not* express properties! A similar dilemma results: the nihilist must either appeal to something about our language practices that justifies their assertion of (B), or appeal to notions outside of our language practices to justify their assertion of (B). If they do the former, we need some explanation for why reflection on our talk gives us a good guide to the consistent lack of property-expression among our predicates. This explanation is also far from clear. If they do the latter, then—as with the epistemicist—they cannot appeal to being a proponent of classical logic, because quasi-nihilists are too; and again, extra-linguistic features like elegance aren't live candidates to appeal to, again because the benefits accrued to quasi-nihilism do not make all else equal.

I conclude that, if one is a proponent of classical logic and takes on the above necessary condition for stating a truth, then one should not provide a uniform general answer to the semantic question. So: both epistemicists and nihilists should be quasi-nihilists. Central to quasi-nihilism is the idea that reflection on our natural language practices gives us reason to doubt such sweeping semantic generalizations, as exemplified with nihilism and epistemicism. We may simply not assert these sweeping generalizations. We can then share part of their view of truth, partake of some of their tools, have responses ready for particular sorites arguments, and then reap many benefits.

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