# Vagueness: Tolerance and Incoherence

# *Vagueza: Tolerância e Incoerência*

*Sagid Salles*
*UFRJ-PPGLM*

## Abstract

*In this paper I will argue that to accept the principle of tolerance does not provide us with a good explanation of the phenomena of vagueness. I will be mainly concerned with the incoherentist strategy, which accepts tolerance and the consequent incoherence of vague predicates. In fact, incoherentism seems to be the most plausible way of accepting tolerance. Because of this, the rejection of incoherentism might be seen as a way to rescue the alternative theories from the objection that they do not respect the principle of tolerance as a literal truth about vagueness. Despite this, I will conclude that neither incoherentism nor the main alternatives satisfy the criteria for an ideal theory of vagueness.*

## Key-words

*Vagueness. Principle of tolerance. Incoherentism.*

## Resumo

Neste artigo defendo que a aceitação do princípio de tolerância não resulta numa explicação satisfatória do fenômeno da vagueza. Meu interesse principal é com a estratégia incoerentista, que aceita a tolerância e a consequente incoerência dos predicados vagos. De fato, o incoerentismo parece ser a forma mais plausível de aceitar o princípio de tolerância. Devido a isto, sua rejeição pode ser vista como um modo de resgatar as teorias alternativas da objeção de que não respeitam o princípio de tolerância como uma verdade literal sobre a vagueza. A despeito disso, concluirei que nem o incoerentismo nem as principais alternativas satisfazem os critérios para uma teoria ideal da vagueza.



## Palavras-chave

Vagueza. Princípio da tolerância. Incoerentismo.


## Introduction[1]

It is sometimes supposed that vague predicates are tolerant to very slight changes. Furthermore to be tolerant is at least a necessary condition for a predicate to be vague. The point is that very slight changes cannot make any difference to the application of vague predicates. For instance, if someone is bald, then the mere addition of one hair cannot make him non-bald; if something is a heap of salt, one grain less cannot make it a non-heap of salt; and the examples can be easily multiplied. The *principle of tolerance* says that very small changes cannot make any difference to the application of these predicates.

Suppose a sequence like B0, B1, B2, …, B10[1°], where "B0"should be interpreted as "a person with 0 hairs on her head is bald", "B1" as "a person with 1 hair on her head is bald", and so on. A formulation of the principle of tolerance for "bald" says that for every number n, if a person with n hairs on her head is bald, then a person with n+1 hairs on her head is

***1*** - I would like to thank Guido Imaguire and Juliana Faccio Lima for helpful suggestions and criticisms on earlier drafts of this paper. Thanks also to Iago Bozza Francisco and Otávio Bueno for the opportunity for several discussions about vagueness. Finally, I would like to acknowledge the support provided by CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior).

also bald: $\forall n\ (Bn \rightarrow Bn+1)$.

This leads us to the well-known sorites paradox, which can be formulated as follows:

(1) B0

(2) $\forall n\ (Bn \rightarrow Bn+1)$

---

(3) $B10^{10}$

The argument would take us to the conclusion that someone with $10^{10}$ hairs on her head is bald. In other words, it shows that someone who is clearly not bald is bald. The same kind of argument could be used to show that a person with 0 hairs on her head is not bald. In this case, the argument would show that someone who is clearly bald is not bald.

Although there are different ways of avoiding the paradox, to reject the principle of tolerance is, at first sight, the more plausible one. After all, (1) seems to be obvious and the argument does not depend on any controversial rules of inference.

However, even this strategy is initially problematic. Consider the principle of tolerance as applied to "bald": $\forall n(Bn \rightarrow Bn+1)$. To refuse this amount to accept that at least one instance of the universally quantified sentence is not true. Let us suppose this instance is $B9.999 \rightarrow B10.000$. Given that this instance is not true, the antecedent is true and the consequent is not true. In other words, B9.999 is true and B10.000 is not true. If this is so, then there is a sharp division between bald and not bald people. There will be a last case of bald in the sorites sequence, and all the others are not bald. Finally, if "bald" has a sharp boundary, then "bald" is a precise predicate and not a vague one. This is what Horgan (1994, p.162) called the *problem of precisification*, and it is serious a challenge to any theory of vagueness that rejects tolerance.

There have been many theories – such as many-valued theories, supervaluational theories, degrees of truth theories, contextualism, etc – trying to solve the sorites by rejecting the principle of tolerance. However, in so doing, it is suggested that they make vague predicates non-vague in the above sense. The problem here is that these theories accept in some sense that there is a number *n* such that Bn is true and Bn+1 is not. Degrees of truth theories, for example, will accept the existence of a number *n* such that Bn is true in degree 1 and Bn+1 is not true in degree 1 (is true in degree less than 1). The supervaluationist, in her turn, will

accept that there is a number *n* such that Bn is true for all precisifications and Bn+1 is not true for all precisifications. Contextualists will also accept the existence of a boundary, and will explain vagueness – or at least the apparent tolerance of vague words – by appealing to some *similarity constraint* which says, roughly, that the boundary of vague words are never where we are looking for. In short, all these theories seem to postulate the existence of "a fact of the matter about the truth-value transitions in sorites sequences" (Horgan, 1994, p.163).

A possible reply on behalf of those theories is to say that tolerance should be seen as a kind of metaphor, not as a literal truth about vague predicates. In fact, it seems to me that in all these theories there is a sense in which we could say that vague predicates do not have boundaries. Many-valued and supervaluationist theories explain the inexistence of a boundary by appealing to the existence of indeterminate cases; degrees of truth theories do postulate a last case of true in degree 1, but they do not postulate a boundary between a last case of true and a first case of not true in the ordinary way; contextualists explain the metaphor of the inexistence of a boundary by appealing to a similarity constraint; and so on. After all, the principle of tolerance, together with other very plausible suppositions, implies that vague words are incoherent. It should be no surprise to accept this principle only as a kind of metaphor. The problem, then, would be whether some of these theories provide an acceptable explanation for the metaphor, and which one provides the better explanation.

In this paper I will argue that to accept the principle of tolerance does not provide us with a good explanation of the phenomena of vagueness. I will be mainly concerned with the incoherentist strategy, which accepts tolerance and the consequent incoherence of vague predicates[2]. In fact, incoherentism seems to be the most plausible way of accepting tolerance. Because of this, the rejection of incoherentism might be seen as a way to rescue the above theories from the objection that they do not respect the principle of tolerance as a literal truth about vagueness. Despite this, I will conclude that neither incoherentism nor the aforementioned theories satisfy the criteria for an ideal theory of vagueness.

**2** - It is not totally clear what it would be to say that a predicate is incoherent. I will discuss at least two senses in which predicates might be incoherent: (i) they might involve inconsistent rules of use, and (ii) their mastering might involve dispositions to accept inconsistent rules of use.

# 1 Tolerance and Incoherence

## 1.1 The non-restriction consequence

If the principle of tolerance is true for "bald", then it is true that ∀n (Bn → Bn+1). So, for any item O in the sorites sequence, if you call it "bald", you have to call every item with more hairs than O "bald" too. By contraposition, it is also true that ∀n (¬Bn+1 → ¬Bn). Thus, for any item O in the sorites sequence, if you call it "non-bald", you have to call every other with less hair on the head "non-bald" too.[3] Let us express this by saying that the principle of tolerance, in this case, is a rule for the use of "bald"; and the same for the other vague predicates.

Whether or not the principle of tolerance is true, it is obviously true that ∀n(Bn → Bn-1). That is to say, for any item O in the sorites sequence, if you call it "bald", you have to call every other item with less hair on the head than O "bald" too. By contraposition, it is also true that ∀n(¬Bn-1 → ¬Bn). That is to say, for any item O in the sorites sequence, if you call it "non-bald", then you have to call every item with more hairs on the head than O "non-bald" too. I will not be long about this, given that I think it is obvious that this is a minimal requirement on our uses of "bald". The same kind of constraint applies to "tall", "big", "very much", "young", and many other vague words.

It should be noted that tolerance, plus the minimal requirement aforementioned, implies the unrestricted application of vague predicates. Suppose a sequence of persons (or, if you like, a temporal sequence of the same person) where the first is 0-haired, the second is 1-haired, the third is 2-haired, and so on. The result is this: if "bald" applies to one, then "bald" applies to all other elements in the sequence; and if "non-bald" applies to one, then "non-bald" applies to all other elements in the sequence. If someone applies "bald" to a person with n hairs on the head, she *must* apply "bald" unrestrictedly, and the same goes for "non-bald". This is what we should expect if tolerance was true for "bald". Let me call this the *non-restriction consequence* of principle of tolerance.

**3** - This formulation seems to be committed to the thesis that meaning is normative. Throughout this paper, I will say that a speaker *have to* (or *should*) apply the predicate so and so. It seems, then, that I am committed to the thesis that the rules or norms which are constitutive of the meaning of vague predicates (i) classify the uses as correct and incorrect, and (ii) determine that speakers should use them correctly. Anti-normativists would accept (i) only. It seems to me that Wright presupposes some kind of normativism when he says that speakers are *forced* to apply vague predicates so and so (1975, p. 329, 333). Since I am concerned with Wright's view, this presupposition is not a problem. I do not think, however, that my arguments depend on this presupposition. I could rather say that a speaker *should* apply the vague predicate so and so *if he wants (intends, etc.) to preserve its meaning (to communicate, etc.)*. In this case, I would not be committed to (ii) because the *ought* (to use the predicate so and so) would depend on non-semantic or non-meaning-constitutive facts (for instance, intentions to preserve meanings or intentions to communicate). About the normativity of meaning, see De Souza Filho (2013).

## 1.2 A rule that no one follows

It is a clear fact about the ordinary uses of "bald" that speakers do not apply "bald" in such unrestricted way. They apply "bald" only to some objects and "non-bald" only to some others (it is irrelevant here if there are borderline cases). So ordinary speakers are not literally following the principle of tolerance, they are not applying "bald" in strict accordance with tolerance. The same will be true with respect to most (if not all) of the sorites predicates. Those who accept that the principle of tolerance is a rule for the uses of vague predicates will have to explain why ordinary speakers do not apply vague predicates in such unrestricted way.

Wright (1975, 1976) thinks that there is a behavioristic account of how people manage to apply "bald" only to some objects and "non-bald" also only to some objects, and how it is possible a large degree of agreement between them about who is or is not bald. Horgan (1994), in turn, thinks that this account is pragmatic. Ordinary speakers call some objects "bald" and some others "non-bald", but they do not call all of them both "bald" and "non-bald" (as tolerance would imply in this case). He then goes on to argue that there must be pragmatic ways of insulating the incoherence of "bald" in such a way that it does not make too much effect on the ordinary uses of "bald".

I will call this part of the explanation – that part which is supposed to explain how speakers manage to apply vague predicates in the way they *really* do – the *Other Half Theory*. It does not matter whether this theory is pragmatic, behavioristic or causal (Burns: 1991, p.95). The point is that those who accept the principle of tolerance will need such an additional theory.

The principle of tolerance, plus the minimal requirement aforementioned, implies that if you apply a vague predicate to one item in the sorites sequence, you *have to* apply it to any other item too. The only way we have to restrict our application of vague predicates is violating the principle of tolerance. The Other Half, whatever it is, must predict that people do not apply vague predicates in such unrestricted way and, hence, it must predict that people systematically violate the principle of tolerance. We first accept that tolerance is a rule for vague predicates and, then, we have to explain that it is a rule which is systematically violated by ordinary speakers.

In fact we can safely suppose that if tolerance is a rule for the uses of vague predicates, it is one that no competent user strictly follows. Imagine a speaker who applies "bald" (or "tall", "heap", "big", etc.) in such unrestricted way. Would you call her a competent user of "bald" ("tall", "heap", "big", etc.)? It seems that the best way out here is to just deny that

tolerance is a rule for vague predicates. In this case we still have to explain why tolerance seems to be true at first sight, but this is a different problem (the psychological problem of vagueness), and there has been several attempts to do that.

## 1.3 Wright's Incoherentism

Is there a way to conciliate the thesis that the principle of tolerance is a rule for vague predicates with the thesis that it is a rule which is systematically violated (so systematically that no competent speaker applies vague predicate strictly in accordance with this rule)? The advocates of tolerance need to address this question. One solution is to appeal to the existence of inconsistent rules. On the one hand, tolerance is a rule for vague predicates. On the other, there are rules which are inconsistent with tolerance. Ordinary speakers must choose when they will act in accordance with one or other. Crispin Wright (1975, p.334) has accepted this perspective.[4]

> Wright's thesis: Whereas large enough differences in *F*'s parameter of application sometimes matter to the justice with which it is applied, some small enough difference never thus matters.

On the one hand, he accepts that tolerance is true and, hence, that a speaker is forced to apply vague predicates in an unrestricted way. On the other hand, he accepts a rule which is inconsistent with tolerance. The point is quite simple: while very slight differences force you to apply vague predicates unrestrictedly (tolerance), substantial differences do justify the application of vague predicates in a restricted way (the rule which is inconsistent with tolerance).

Let *a* and *b* be two items in the sorites sequence for "bald" which are such that (i) *a* is less haired than *b* and (ii) *a* and *b* are *substantially different* in the relevant aspect (that is, the difference of number of hairs between them is large enough to justify your application of "bald" to one and "non-bald" to the other). Suppose you apply "bald" to *a*. Given that "bald" is tolerant, you should apply "bald" to *b* too. However, given that *b* is substantially different from *a*, you are allowed to apply "non-bald" to *b* (even though you have applied "bald" to *a*). The same works for the case in which you begin by applying "non-bald" to *b*. In this case, tolerance will force you to apply "non-bald" to *a* too; but the other rules will allow you to

**4** - I use Weatherson's formulation for both Wright and Eklund's thesis (2009, p.85).

apply "bald" to *a* (even though you have applied "non-bald" to *b*). In sum, tolerance implies that you are not allowed to apply "bald" to *a* and "non-bald" to *b*. The rule for substantial differences, in turn, implies that you are allowed to apply "bald" to *a* and "non-bald" to *b*. The result is that you are and aren't allowed to apply "bald" to *a* and "non-bald" to *b*. This makes sense of how tolerance may be a rule for the use of vague predicates even though it is so systematically violated. It is true that tolerance is systematically violated, but the reason is that there is an operative rule which is inconsistent with tolerance. Would this kind of incoherentism be plausible?

Here are some initial problems. This version of incoherentism is saying that both propositions bellow are true:

(1) It is not allowed to apply "bald" to *a* and "non-bald" to *b*.

(2) It is allowed to apply "bald" to *a* and "non-bald" to *b*.

To begin with, the incoherentist owes us an explanation of what makes it true that (1) and (2). Nonetheless the answer could not be that it is the fact that people use "bald" in strict accordance with (1) and (2). Given that these rules are inconsistent, it cannot be the case that people use "bald" in strict accordance with them (in each context, either you follow one or you follow the other). What else, then, makes both (1) and (2) true? Additionally, could we say that these inconsistent rules are both true concerning a linguistic practice such as, for example, the practice of using "bald"? It is just not clear what it would be the correct answer here. It might be, of course, that we have a set of rules containing inconsistent instructions such as (1) and (2). But the linguistic game of "bald" is not merely a set of rules, it is a set of rules which gives us instructions about how to use "bald". As we will see bellow, inconsistent rules do not provide us with such instructions.

If a game is such that its instructions allow you to do A and do not allow you to do A, then there will be no effective instructions with respect to A. In the game of chess, you are allowed to move the horse in L. Suppose now that we add a rule saying that you are not allowed to move the horse in L. In this case, would you be allowed to move the horse in L? The answer is *yes and no*. As an instruction, this answer is not better than no answer at all. So it would be as if you had no instruction about whether or not you are allowed to move the horse in L. Now, think about the case of vague predicates. Are you allowed to apply vague predicates in a restricted way? The answer is *yes and no*. Once again, as an instruction, this

is not better than no answer at all. It appears that inconsistent instructions are not really informative about which move to do. They have no real role in the explanation of our uses of vague predicates; at least, no more than their simple inexistence would have.

Imagine a Martian who has no previous knowledge of how to use the word "bald" but she has learned all of its rules. She is not acquainted with our ordinary uses. In this situation, the Martian would still not be able to use "bald" as us. In other words, he would not know how to use "bald". Wright seems to accept this result:

> But while it may be true that the authority of the rules can be cited for any of the moves the community actually makes, it is plain that the rules alone do not provide a satisfactory account of the practice of the game. For someone could master the rules yet still not be able to join in the game, because he was unable to guess what sort of eclectic application of them an opponent was likely to make in relation to any given move.[5]
>
> The rules of the game do not provide an account of how the game is played, for it is possible that someone might grasp them yet be unable to participate.[6]

Although Wright is disposed to accept this, it is not a plausible result. The reason why the result is implausible is that it implies that a person who explicitly acknowledges all the rules for the use of "bald" may not be able to apply this predicate to any singular case at all.[7] As far as the rules tell her, she will not be able to decide whether or not to apply "bald" to anyone (if you like, you can suppose that the conditions are the ideal ones). The instructions for the use of "bald" would teach nothing to her. In knowing the rules for "bald" the Martian would have no informative instruction to make even a single move in the linguistic game for "bald". This is too radical.

On the one hand, Wright's incoherentism does not make clear what it would be for both (1) and (2) being true, or even whether they could be both seen as true rules concerning

**5** - Wright (1975, p. 362)

**6** - Wright (1975, p. 362)

**7** - Does Wright's theory really have this implication? It is true that someone who knows (1) and (2) may still not know how to use "bald". But there might be other rules for the use of "bald" and those might be informative. Someone who knows all the rules for the use of "bald", for example, will know that this predicate is about amount of hair on the head and not about colors or horses; she would also know that if she applies "bald" to a person with n hairs on the head, then she has to apply it to a person with n-1 hairs on the head too; and so on. All this is correct, but this person would still not be able to decide, based on the rules for the use of "bald", whether or not anyone is bald. In other words, as far as the rules can tell her, she would not be able to apply "bald" to any single item in the sorites sequence.

the uses of "bald". On the other, even supposing that (1) and (2) could both be true, they would have no role in the explanation of our uses of vague predicates; no more than their inexistence would have. It seems to me that Wright's inconsistent rules are not really explaining vagueness, they are indeed explaining nothing.

Wright's goal is to argue against what he calls the *governing view*. The governing view is a conjunction of two thesis: (i) our use of language can be correctly viewed as a practice in which the admissibility of a move is determined by rules; (ii) the general properties of these rules can be discovered by means of intuition and "working knowledge of the language from the inside, as users of it" (Burns: 1991, p.85). He thinks that arguments such as those I have provided above show that (ii) is false (Wright: 1975, p.363). But Wright cannot solve these problems only by refusing (ii). These problems are not problems about how we manage to discover in which rules our uses of vague predicates are rested on. What gives rise to all the objections discussed so far is the fact that Wright accepts tolerance as a rule for vague predicates, and also the fact that he accepts that vague predicates involve inconsistent rules. On the other hand, if we refuse also (i), then we have no reason to believe in tolerance anymore. In this case it would be better to just explain vague predicates entirely by the Other Half, without postulating any rule at all; that is, without postulating tolerance.

## 1.4 Eklund's Incoherentism

Eklund (2002, 2005) has provided a different form of incoherentism for vague predicates.

> Eklund's thesis: Competent speakers are disposed to accept that whereas large enough differences in *F*'s parameter of application sometimes matter to the justice with which it is applied, some small enough difference never thus matters.

Eklund do not think that the principle of tolerance is true. In fact, the talk about dispositions and competence is meant to explain the very fact that tolerance is not true, even though we are disposed to accept it is. It is arguably plausible to suppose that competent users of vague predicates are disposed to accept an untrue principle. Although tolerance is not true, it is part of the semantic competence with vague predicates to accept tolerance; and it is also part of that competence to accept that large enough differences matter to a proper application of a

vague predicate. That is to say, competence with these expressions will involve dispositions "to accept some things that in fact lead to inconsistency" (2005, p. 41).

It should be noted that competent speakers are disposed to apply vague predicates in a restricted way only. They always do so and unrestricted applications of these predicates are not acceptable in ordinary uses of them (I will give one more reason for this unacceptability latter). Even Eklund should accept this, on the pain of being empirically wrong. Could we reasonably claim that competent speakers are also disposed to accept tolerance? In this case the disposition to accept tolerance cannot be the same as the disposition to apply vague predicates unrestrictedly. I suspect that Eklund understands the first one as the disposition to accept each step in the step-by-step version of the sorites argument. Suppose that a competent speaker is facing a step-by-step version of the sorites argument for "bald". She would feel forced to accept each of the steps, and this happens because on each step she would feel that if she calls a n-haired person "bald", she has to call the n+1-haired "bald" too. In other words, she would feel that the mere difference of one hair on the head cannot change her application of "bald". To be disposed to accept each step of the step-by-step version of the sorites argument is not the same as to be disposed to apply vague predicates as if each step was correct. In sum, competent speakers are disposed to accept tolerance but not to apply vague predicates unrestrictedly.

Eklund's theory is more plausible than Wright's version of incoherentism. But it has its own problems. According to Eklund's view, Timothy Williamson is not a competent user of vague predicates. Given that Williamson is an advocate of epistemicism, he would not be disposed, I presume, to accept tolerance or each one of the conditionals in the step-by-step version of sorites argument. Because of this, he would not have the inconsistent dispositions. In reading Williamson's papers about vagueness we can perfectly tell that he is a competent user of vague predicates, whether or not he believes in a wrong theory.

Additionally, it seems that there is no special problem in there being disagreement about whether or not some predicates are vague (Weatherson: 2009, p.87). We can discuss whether "*good*" is vague (perhaps to be good is to maximize utility in a vague way) without being incompetent users of this predicate. Those who disagree that "good" is vague may well be not disposed to accept each step of the step-by-step version of the sorites without thereby being incompetent users of "good". We do not need to know (neither to agree) that a vague word is vague in order to competently use it.

Finally, Eklund talks about competent speakers being disposed "to accept that whereas large enough differences in *F*'s parameter of application…". As Weatherson notices, this formulation is ambiguous. Let us say that the parameter of application for "bald" is Ψ. Now

we can read Eklund's thesis in two different ways. On the first reading, he would be saying that competent users of "bald" are disposed to accept: that whereas large enough differences in Ψ matter, small enough differences in Ψ never thus matter. On the other reading, he would be saying that competent speakers are disposed to accept that: whereas large enough differences in the parameters of application of "bald" (whatever they are) matter, small enough differences never thus matter. Both readings have the problems mentioned above. But there are some problems specifically to each one of them.

On the first reading, competent speakers cannot have false beliefs about which is the relevant parameter for a vague predicate. If S has a false belief about which is the relevant parameter for "heap", for example, she will not be a competent user of our predicate "heap". Suppose the parameter for "heap" is Ψ but Mary believes it is Ø. In this case, Mary might be not disposed to accept that *whereas large enough differences in Ψ matter, small enough differences in Ψ never thus matter*. After all, she not even believes that Ψ is the relevant parameter for "heap". Aside this, it is hard to believe the parameters of application for vague predicates are generally easy to access. I have been treating "bald", for example, as if its only relevant parameter of application was the number of hairs on the head. But this is not the case. The distribution of hairs on the head is an important parameter too. To take another example, the parameter of application for "thin" is a set of measurements. But what specific measurements are included in this set? It is too much to require that speakers know the specific parameter which is at stake for each vague predicate in order to be able to use them in a competent way. The second reading does not have this problem, but it requires people having some concept of *parameter* before being a competent user of vague predicates. As Weatherson (2009, p. 87) notices, it is implausible to think that ordinary users should have some concept of a parameter before being able to use vague predicates. It seems to me that this supposition is even more implausible than the first reading.

All these problems have the same source: Eklund is making the conditions on our uses of vague predicates too strong. My intuition is that we should go to the opposite direction. The conditions on our uses of precise predicates might be strong, but the conditions on the use of vague words should be rather weak.

## 1.5 The vagueness of "substantial difference"

A problem for both Wright and Eklund's view is the fact that the notion of *substantial differences* – the difference between *a* and *b* which is large enough to make difference to

the application of a vague predicate – is itself vague. How many hairs more than *a b* has to have in order for there to be a substantial difference between *a* and *b*? It is not hard to find a plausible (but not correct, I think) answer in some cases. Think about "bald". A plausible answer in this case is that there will be a substantial difference between *a* and *b* with respect to the number of hairs if *a* can be discriminated from *b* only by means of casual observation (Wright seem to suggest this). For other cases there is no clear answer. What would count as a substantial difference between a young man and a not young one? I can classify people as young or not young only by knowing their ages. Suppose I classify *a* as young. How older should *b* be in order to be substantially different from *a*? The same problem will arise for several others vague words: "old", "many" (as in "I go to the movies many times a week"), "much" (as in "I do not have much money"), "rich", "poor", "far away" (as in "*a* is far away from *b*"), and so on. In all these cases, it seems that there will be a small enough difference that never matters to the justice with which the predicate is applied (this is the intuition behind the principle of tolerance). However, in all those cases it is vague what would count as a substantial difference. One cent is not a substantial difference between a rich and a non-rich person. If 1 cent is not a substantial difference, 1+1 is not too. If 1+1 is not, then 1+1+1 is not too… The notion of *substantial differences* (the "large enough" differences) is itself vague, at least as applied to many vague predicates. Being so it is tolerant.

This notion plays a crucial role in both Wright's and Eklund's view. Recall that Wright's strategy was to say that we are allowed to restrict our application of a vague predicate F, applying F to an object *x* and its negation to *y*, when there is a substantial difference between *x* and *y*. If "substantial difference" is itself a vague predicate (or better, a relation), then it should be unrestrictedly applied. Now we will have to explain why this is not so. We would need an explanation for the fact that ordinary users of vague predicates do not do so. After all, they do not consider any difference as a (non)substantial one. Eklund's strategy is to explain one side of the inconsistent dispositions by appealing to the substantial differences. If "substantial difference" is itself vague, then it should be explained by appealing to inconsistent dispositions which will require once again the notion of "substantial differences". Now we are back to the beginning.

## 1.6 The positive case against unrestricted application

Let me now consider a positive argument for the thesis that at least some vague predicates must be restrictedly applied and cannot be unrestrictedly applied. I think there is a simple

argument to show this. In fact, I think we can (i) show that the predicate "bald" definitely applies to a 0-haired person and (ii) develop a non-vague notion of *ideal case* of "bald". Consider the following sequence of people ordered by the number of hairs in their head.

0-haired person, 1-haired person, 2-haired person, …, n-haired person

Let us suppose that "non-bald" applies to the first person, the 0-haired person. The minimal requirement explained at the beginning of this section says that *for all number n: if "non-bald" applies to a n-haired person, it applies to a n+1-haired person too*. Given this, "non-bald" applies to all the items in the sorites sequence. That is to say, "non-bald" will apply to everyone. Independently of how many hairs on the head a person has, she is non-bald. If this is true, then "bald" is not a predicate about lack of hairs. Of course "bald" is a predicate about lack of hair. Therefore, the supposition that "non-bald" applies to a 0-haired person is false. No one can correctly apply "non-bald" to 0-haired person. We can safely say that our predicate "bald" applies to a 0-haired person and it cannot be the case that its negation applies to a 0-haired person. That is to say, "bald" definitely applies to 0-haired person. We can formulate a similar argument to show that "non-bald" definitely applies to a person who has a hundred percent of her head covered by hair.

Now we cannot formulate this argument to show that "non-bald" cannot be applied to a 1-haired person. From the supposition that "non-bald" applies to a 1-haired person it does not follow that "bald" is not about lack of hair. It might be that "non-bald" applies to a 1-haired person and yet "bald" is about lack of hair (in this case, about total lack of hair). So this argument shows that "bald" definitely applies to 0-haired people, but not that it definitely applies in any other case. A 0-haired person is what I call, following Imaguire (2008, p.123), an *ideal case* of "bald". The notion of ideal case is, at least for "bald", a precise one. There is a sharp boundary between the ideal cases of "bald" and the non-ideal cases of "bald"; namely, only 0-haired people are ideal cases of "bald". The same will apply to the ideal cases of non-bald.

This argument is quite plausible and it does not depend on any really controversial assumption. However, it has some interesting consequences. First, there is at least a case to which "bald" definitely applies. From this it follows that "non-bald" cannot be unrestrictedly applied. No sorites reasoning can force me to apply "non-bald" to a 0-haired person. Similarly, no sorites reasoning can force me to apply "bald" to a person who has a

hundred percent of her head covered by hair.[8] Against Wright, the principle of tolerance is just not true for "bald". Against Eklund, no competent speaker needs to be disposed to accept tolerance or the step-by-step version of the sorites argument for "bald".

Crispin Wright has said that incoherentists should accept that "there are no determinate F's and non-F's" (1994, p.141), where F is a vague predicate. At least for "bald", the incoherentist cannot accept this. At any rate the existence of ideal cases is not a knock down objection against incoherentism or the principle of tolerance. This argument above shows that incoherentism, such as presented so far, is false. However, it is possible to defend a restricted version of the principle of tolerance for some vague predicates along these lines. The principle of tolerance does not force you to accept, for example, that a 0-haired person is non-bald, but it can be applied to all the other items in the sorites sequence (for simplicity, I will ignore the ideal case of "non-bald"). That is to say: *for all n such that n>0: if a person with n hairs is bald, then a person with n+1 hairs is bald too*. In other words, they could formulate tolerance in such a way as to accommodate the existence of ideal cases. Eklund, in his turn, might say that although we do not have to be disposed to accept each step of the step-by-step version of the sorites argument, we do have to be disposed to accept each step until an ideal case is in place; that is, we would be disposed to accept a restrict version of the principle of tolerance. This would be a more complicated and an even more implausible version of incoherentism, but it can be done.

## 1.7 Vague predicates and sorites susceptible predicates

I have been discussing the sorites predicates so far. In other words, I have been discussing predicates to which the sorites argument is compelling. According to incoherentism to be sorites susceptible is an essential property of vague predicates (for vague predicates are tolerant or at least we are disposed to accept that they are). Nonetheless, as Weatherson (2009, p.80) notices, there are predicates which are intuitively vague but not sorites susceptible. Take the predicate "has few children". Now take the following sorites argument (I just repeat Weatherson's formulation of the argument):

***8*** - It is not quite clear how important the notion of ideal cases will be to an account of vagueness. The most of the recent theories seem to depend on a less restrict notion of *clear case*, one which allows that "bald" definitely applies not only to 0-haired people, but also to many other cases. This is what gives rise to the problem of precisification and makes these theories so problematic. But it might be that some theory of vagueness can be formulated in such a way as to depend only on the more restrict notion of *ideal cases* (perhaps degrees-of-truth theories could say that only ideal cases of "bald" are bald in degree 1; contextualists could say that all the other cases are determined by context; or it might be that we can formulate a new theory which is construed out of the notion of ideal cases; or maybe this notion is not so important at all). In any case, the argument provides one more reason against incoherentism.

(1) An academic with one child has few children.

(2) If an academic with one child has few children, then an academic with two children has few children.

(3) If an academic with two children has few children, then an academic with three children has few children.

(4) If an academic with three children has few children, then an academic with four children has few children.

(5) If an academic with four children has few children, then an academic with five children has few children.

(6) So an academic with five children has few children.

Would you feel forced to accept this argument is sound? I don't think so. It is intuitive that "has few children" is a vague predicate. There is something special with its boundary and *this something* must be explained by a theory of vagueness. Yet it is not a sorites susceptible predicate. A competent user of "has few children" does not need (to be disposed) to accept this reasoning. Suppose, for example, that someone deny (3). Would we be allowed to say that he is "missing something we are able to see" (Eklund, 2005, p.41)? Contra Eklund, this clearly is not the case. And the same is true of other vague phrases such as "go to the movies few times a week", "watch movies very often", etc. It is not clear that a competent speaker would be missing something by categorically refusing a sorites argument for each of these cases.

It is true that many vague words are sorites susceptible, but we should be careful in drawing the conclusion that to be sorites susceptible is essential to vagueness. So far as our intuition can tell us, it is not. Following Soames (1998, p.217), I think the most plausible would be to distinguish the sorites predicates from vague predicates, in such a way that the first kind is a subset of the second one. Incoherentism does not provide us with any means by which we could do that.

## 2 Tolerance and the problem of precisification

The principle of tolerance (together with some non-controversial constraints) is supposed to explain the alleged fact that the difference of only one hair does not make difference to the application of "bald". If I call a n-haired person bald, I have to call a n+1-haired person bald too. If I call her non-bald, I have to call a n-1-haired person non-bald too. Whatever a n-haired person is (bald or non-bald), her immediate neighbors in the sorites sequence will be too. Generalizing, tolerance is the explanation for the fact that very slight changes do not make difference to the application of vague predicates. We must recognize that the principle of tolerance makes sense of the intuition about very slight changes.

However, we have seen that tolerance is highly problematic. Ordinary speakers do not apply vague predicates as if they were strictly tolerant, their uses systematically violate tolerance. To appeal to some form of incoherentism, in turn, would also be implausible. In the face of all that, one might think that the best strategy is to deny that the principle of tolerance is true of vague predicates and look for some alternative way to explain the phenomenon of vagueness. Those who take this latter venue will have to deal with the problem of precisification.

### 2.1 Does tolerance explain imprecision?

It should be noticed that the principle of tolerance, by itself, does not obviously explain the intuition that vague predicates are imprecise. A precise predicate is such that there will be a boundary between the things to which it applies and the cases of any other kind. A non-precise predicate is such that it has no boundary, "no such distinction may be drawn between cases where it is definitely correct to apply the predicate and cases of *any* other sort." (Wright, 1975, p.330). Let us take this for grant and ask if tolerance is a good way to explain this intuition.

Suppose the principle of tolerance is true for "bald". Then, we have four options, which form what Williamson (1994, p.167) called the *all or nothing view*. (i) there is a case of bald but not of non-bald, (ii) there is a case of non-bald but not of bald, (iii) there is no case of bald and no case of non-bald and (iv) there is both a case of bald and a case of non-bald. It is hard to see which of these options would provide us with the relevant sense of imprecision.

The cases of (i) and (ii) are obvious. In (i) "bald" applies to all objects in the sorites sequence and "non-bald" is empty. In (ii) "bald" applies to nothing and "non-bald" applies

to all objects in the sorites sequence. In both cases "bald" would be a paradigmatic example of a precise predicate. In (iv) both "bald" and "non-bald" apply to every object in the sorites sequence, in which case "bald" and "non-bald" have the same extension. Again, both 'bald' and 'non-bald' would clearly have precise extensions. Finally, the principle of tolerance together with (iii) only implies that both "bald" and its negation are empty. It should be clear that to be empty is not a sufficient condition for being imprecise.

To be tolerant is not a sufficient condition for being imprecise. The reason why the principle of tolerance fails is what I have called the *non-restriction consequence*. Tolerance implies unrestricted application of vague predicates, it does not allow for the situation in which the vague predicate is applied to *a* and its negation to *b*. The result is the *all or nothing view* and none of its options gives us an intuitive picture about what imprecision is.

We could then argue that the problem of precisification, whatever is its source, is not due the rejection of tolerance. Even those who accept tolerance will face this problem. Incoherentists presuppose that tolerance is the source of imprecision and their explanations of the phenomenon of vagueness take us to a set of problems. They might be wrong (and I suspect they are wrong) about this. This is one more reason why we should take tolerance only as a metaphor to something else.

## 2.2 Backing to the traditional theories?

Since the principle of tolerance does not give us a plausible theory of vagueness, it might be that the best path is to refuse tolerance and accept that vague predicates do have boundaries (the theories that follow this strategy are what I call the *traditional theories*). In this case we will have to explain why we are so inclined to accept tolerance. Both contextualism and epistemicism follow this strategy. According to Williamson's epistemicism, for example, we could not know where the boundary of a vague predicate is, although they have boundaries. We could never find out where the boundary of a vague predicate is, or even imagine how we could find out the exact boundary of a vague predicate. Because of this, it is tempting to believe that there is no boundary or that the existence of such a boundary is inconceivable. Yet this is a "fallacy of the imagination" (1994, p.3), and he goes on to argue that vague predicates do have a boundaries. According to Fara's contextualism (2000), the intuition behind the principle of tolerance, roughly, comes from the fact that once we look at a pair of objects that are very similar to each other, the boundary of the vague predicates changes. This is why we are inclined to accept each particular instance of n (Bn → Bn+1) even

though we hesitate to think that the sorites argument is sound (if we do not hesitate, then the argument will not sound as a paradox at all). Thus both contextualism and epistemicism deny the principle of tolerance, but they do provide acceptable explanations for why we are so inclined to accept it. It is not clear to me how the advocates of supervaluationism or degree-of-truth theories could explain the intuition for tolerance, but there is no reason why think this is impossible.

This strategy is not more implausible than to accept tolerance and incoherentism. First, it is not even obvious that the principle of tolerance provides us with a good explanation for the imprecision of vague predicates. Second, incoherentism is not a plausible theory. Whether or not some of the above theories is right, the mere fact that they refuse tolerance is not enough to refute them.

## Conclusion: The unsolvable problem of vagueness

For those inclined to accept one of the traditional theories of vagueness, the diagnosis of this paper might be positive. After all, to refuse tolerance and the imprecision of vague predicates would not be less plausible than to accept it. For those who, like me, are really impressed by the problem of precisification, the result is a negative one. Neither incoherentism nor the traditional theories are correct. An ideal theory of vagueness should satisfy all of the following three criteria: (i) to explain vague predicates without making them precise, (ii) to explain vague predicates without making them incoherent and (iii) to explain vague predicates in a way which solves the sorites paradox. I suspect that the way to solve this problem is to realize that imprecision is not the same thing as tolerance. To be an imprecise predicate is not the same as to be a tolerant predicate. As we have seen, tolerance not only take us to incoherence, it not even provides us with a clear explanation of imprecision. What we have to do is to find out a way of explaining imprecision without appealing to tolerance and without violating the other two criteria for an ideal theory of vagueness. If there is no such way, then the problem is unsolvable one.

## References

Burns, Linda Claire. 1991. *Vagueness: an investigation into natural languages and the sorites*

*paradox*. Springer Science+Business Media Dordrecht.

Horgan, Terence. 1994. Robust Vagueness and the Forced-March Sorites Paradox. *Philosophical Perspectives*, 8, Logic and Language.

Eklund, Matti. 2002. Inconsistent Languages. *Philosophy and Phenomenological Research*. Vol. LXIV, No. 2

Eklund, Matti. 2005. What Vagueness Consists in. In: *Philosophical Studies* 125: 27–60

De Souza Filho, S. 2013. *Seguir Regras e Naturalismo Semântico*. Disponível em: https://ppglm.files.wordpress.com/2008/12/dissertacao-ppglm-sergio-souza.pdf

Fara, Dalia Graff. 2008. Profiling Interest Relativity. *Analysis* 68.4, October 2008, pp. 326–35.

Fara, Dalia Graff. 2000. Shifting Sands: An Interest-Relative Theory of Vagueness. *Philosophical Topics*. Vol. 28, NO.1

Imaguire, Guido. 2008. "A Vagueza e os Paradoxos Sorites". In: Imaguire, Guido & Schirn, Matthias. *Estudo em Filosofia da Linguagem*. Edições Loyola, São Paulo, 2008.

Rafman, Diana. 2005. How to understand contextualism about vagueness: reply to Stanley. *Analysis*, 65.3, pp.244-48.

Soames, Scott. 1998. Vagueness, Partiality and the Sorites Paradox. In *Understanding Truth*, Oxford University Press, 1999, pp. 203-227.

Weatherson, Brian 2009. Vagueness as Indetermination. In: Dietz, Richard & Moruzzi, Sebastiano (ed.). *Cuts and Clouds: Vagueness, Its Nature, and Its logic*. Oxford University Press, pp. 77-90.

Williamson, Timothy 1994. *Vagueness*. Routledge.

Wright, Crispin. 1975. On The Coherence of Vague Predicates. *Synthese* 30 (1975) 325-365.

Wright, Crispin. 1976. Language-Mastery and the Sorites Paradox. In: Evans, Gareth & McDowell, John (1976) *Truth and meaning: Essays is Semantics*. Oxford.

Wright, Crispin. 1994. The Epistemic Conception of Vagueness. *The Southern Journal of Philosophy (1994) Vol. XXXIII, Supplement.*