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Indeterminacy and the Small-Improvement Argument

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In this article, I argue that the small-improvement argument fails since some of the comparisons involved in the argument might be indeterminate. I defend this view from two objections by Ruth Chang, namely the argument from phenomenology and the argument from perplexity. There are some other objections to the small-improvement argument that also hinge on claims about indeterminacy. John Broome argues that alleged cases of value incomparability are merely examples of indeterminacy in the betterness relation. The main premiss of his argument is the much-discussed collapsing principle. I offer a new counterexample to this principle and argue that Broome's defence of the principle is not cogent. On the other hand, Nicolas Espinoza argues that the small-improvement argument fails as a result of the mere possibility of evaluative indeterminacy. I argue that his objection is unsuccessful.

The small-improvement argument is the most influential argument against axiological completeness. Axiological completeness is the view that for any pair of items, either one item is better than the other or the items are equally good. There are also versions of the argument that attack preferential completeness, that is, the view that for any pair of items, one is rationally required to either prefer one of the items to the other or be indifferent between them. In this article, I shall argue that the small-improvement argument fails since some of the comparisons involved in the argument might be indeterminate. I shall defend this view from some objections by Ruth Chang.

There are some other objections to the small-improvement argument that also hinge on claims about indeterminacy. John Broome argues that alleged cases of value incomparability are merely examples of indeterminacy in the betterness relation. The main premiss of his argument is the much-discussed collapsing principle.[1] On the other hand, Nicolas Espinoza argues that the small-improvement argument fails as a result of the mere possibility of evaluative indeterminacy.[2] Both objections, I shall argue, are unsuccessful.

The small-improvement argument was first proposed by Ronald de Sousa under the title 'the case of the Fairly Virtuous Wife'. He writes: **[p. 434]**

> I tempt her to come away with me and spend an adulterous weekend in Cayucos, California. Imagine for simplicity of argument that my charm leaves her cold. The only inducement that makes her hesitate is money. I

* I would be grateful for any thoughts or comments on this paper, which can be sent to me at *johan.eric.gustafsson@gmail.com*.

[1] J. Broome, 'Is Incommensurability Vagueness?', *Incommensurability, Incomparability, and Practical Reason*, ed. R. Chang (Cambridge, Mass., 1997), pp. 74–7.

[2] N. Espinoza, 'The Small Improvement Argument', *Synthese* 165 (2008), pp. 127–39.

> offer $1,000 and she hesitates. Indeed she is so thoroughly hesitant that the classical decision theorist must conclude that she is *indifferent* between keeping her virtue for nothing and losing it in Cayucos for $1,000. … The obvious thing for me to do now is to get her to the point of clear preference. That should be easy: everyone prefers $1,500 to $1,000, and since she is indifferent between virtue and $1,000, she must prefer $1,500 to virtue by exactly the same margin as she prefers $1,500 to $1,000: or so the axioms of preference dictate. Yet she does not. As it turns out she is again 'indifferent' between the two alternatives.[3]

All versions of the small-improvement argument share the following structure: We have a case where a seemingly rational person prefers neither of two items to the other. And a small improvement to one of the items does not make it preferred to the other item. Finally, we have some kind of transitivity premise from which it follows that neither preference in either direction nor indifference holds between the items.

In de Sousa's original rendition, the argument is purely about rational preferences. But there are also axiological versions of the argument. Chang offers the following case:

> Suppose you must determine which of a cup of coffee and a cup of tea tastes better to you. The coffee has a full-bodied, sharp, pungent taste, and the tea has a warm, soothing, fragrant taste. It is surely possible that you rationally judge that the cup of Sumatra Gold tastes neither better nor worse than the cup of Pearl Jasmine and that although a slightly more fragrant cup of the Jasmine would taste better than the original, the more fragrant Jasmine would not taste better than the cup of coffee.[4]

Given that your value judgements in this case are correct and that transitivity holds for 'better' and 'equally good', it follows that neither does one of the cups taste better than the other nor do they taste equally good.[5] Thus we have contradicted axiological completeness. Chang uses the small-improvement argument in an attempt to establish parity as a fourth value relation that holds when none of 'better', 'worse' and 'equally good' does.

The paper is structured as follows: Section I examines Broome's case for the collapsing principle. Section II examines Espinoza's recent attempt to show that the small-improvement argument fails as a result of the mere possibility of indeterminacy in our value judgements. Section III presents a suggestion by Wlodek Rabinowicz, which I defend in section IV against Chang's objections. Lastly, in section V, **[p. 435]** I show why indeterminate comparisons are problematic for the small-improvement argument and offer an analysis of parity that might hold in the examples employed in the argument but without contradicting completeness.

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[3] R. de Sousa, 'The Good and the True', *Mind* 83 (1974), pp. 534–51, at 544–5.

[4] R. Chang, 'The Possibility of Parity', *Ethics* 112 (2002), pp. 659–88, at 669.

[5] We employ the following transitivity principle: $\forall x \forall y \forall z((xBy \wedge yEz) \rightarrow xBz)$.

I. The collapsing principle

Broome does not argue directly against the small-improvement argument. He nevertheless objects to putative counterexamples to completeness, such as those employed in the small-improvement argument. Broome argues that these alleged counterexamples are really just examples of indeterminacy. If he is right, the small-improvement argument must be flawed. But his case depends on a controversial principle:

> *The collapsing principle, special version.* For any x and y, if it is false that y is Fer than x and not false that x is Fer than y, then it is true that x is Fer than y.[6]

The collapsing principle has been subject to a number of counterexamples by Erik Carlson. The examples are all of essentially the same structure. The shortest one runs as follows:

> [S]uppose that *A* and *B* are two identical alarm clocks, except that *A* is waterproof, and *B* is not. Is *A* a better alarm clock than *B*? There may be no definite answer, since it may be indeterminate whether water resistance is a good-making characteristic of artefacts that are not very likely to come into contact with water. It is clear, however, that *B* is not better than *A*, since *A*'s being waterproof definitely does not detract from its goodness as an alarm clock.[7]

Broome nevertheless remains unconvinced. All of Carlson's examples trade on there being some kind of indeterminacy about value-making features. Broome rejects the view that it could be indeterminate whether a certain feature contributes to the value of an item.[8] Similarly, in order to avoid Carlson's examples, Cristian **[p. 436]** Constantinescu restricts the collapsing principle to what he calls 'intentionally determinate' predicates *F*, for which it is determinate what the criteria are for falling under *F*.[9]

These answers, however, do not work if we modify Carlson's examples so that it is determinate which features contribute to the goodness of an item but indeterminate whether the item has one of these features. Suppose that *A* and *B* are two prospective cavaliers, identical in every relevant aspect except it is indeterminate whether *B* is bald but it is determinate that *A* is not bald. For superficial reasons, baldness contributes negatively to one's goodness as a cavalier. Then, surely, *B* is not better than *A*. But since it is indeterminate whether *B* is bald, it is indeterminate whether *B* differs from *A* in any relevant respect

[6] Broome, 'Incommensurability', p. 74. J. Broome, *Weighing Lives* (Oxford, 2004), p. 174 states the principle in terms of what one can deny:

> *Collapsing principle*. For any predicate *F* and any things *A* and *B*, if we can deny that *B* is *F*er than *A*, but we cannot deny that *A* is *F*er than *B*, then *A* is *F*er than *B*.

[7] E. Carlson, 'Broome's Argument against Value Incomparability', *Utilitas* 16 (2004), pp. 220–4, at 224.

[8] J. Broome, 'Reply to Rabinowicz', *Philosophical Issues* 19 (2009), pp. 412–17, at 417. Cf. Broome, *Weighing Lives*, pp. 185–6, where he at least admits the examples as a strong objection.

[9] C. Constantinescu, 'Value Incomparability and Indeterminacy', *Ethical Theory and Moral Practice* 15 (2012), pp. 57–70, at 68–9.

that contributes negatively to *B*'s goodness.[10] Thus it should be indeterminate whether *A* is better than *B*. Since it is determinate **[p. 437]** what features contribute to the goodness of an item in this example, it is not blocked by Broome's answer to Carlson. Furthermore, it seems inauspicious to claim that it cannot be indeterminate whether an item has a certain feature that contributes to its *F*ness.

Broome offers one positive argument for the collapsing principle. He argues as follows:

> My only real argument is this: If it is false that *y* is *F*er than *x*, and not false that *x* is *F*er than *y*, then *x* has a clear advantage over *y* in respect of its *F*ness. So it must be *F*er than *y*. It takes only the slightest asymmetry to make it the case that one thing is *F*er than another. One object is heavier than another if the scales tip ever so slightly toward it. Here there is a clear asymmetry between *x* and *y* in respect of their *F*ness. That is enough to determine that *x* is *F*er than *y*.[11]

An unpersuasive step is the inference from that it is false that *y* is *F*er than *x*, and not false that *x* is *F*er than *y*, to that *x* has a clear advantage over *y* in respect of its *F*ness. Of course, we can infer that *x* has a clear *F*-related advantage over *y*, namely, it is either determinate or indeterminate whether *x* is *F*er than *y* whereas

[10] Note that I am not denying that *A* and *B* differ in baldness. I just claim that it is indeterminate whether they differ in baldness. One might object, however, that if it is false that *A* is bald and not false that *B* is bald, then *B* is balder than *A* and hence *A* and *B* differ in baldness. This reasoning seems to rely on the following principle posited by E. Carlson 'Vagueness, Incomparability, and the Collapsing Principle', *Ethical Theory and Moral Practice* (forthcoming):

> *The monadic collapsing principle*. For any *x* and *y*, if it is false that *y* is *F*, and not false that *x* is *F*, then it is true that *x* is *F*er than *y*.

But this principle is open to counterexamples that are very similar to those offered against the original collapsing principle. Carlson, 'Vagueness', offers the following:

> Let us slightly modify Gustafsson's cavalier case, and assume that *B* is definitely bald, whereas *A* is borderline case of baldness. In all other relevant respects, the two cavaliers are identical. Suppose also that, given their other properties, not being bald is necessary and sufficient for *A* or *B* to qualify as a good cavalier. It is thus false that *B* is good, and indeterminate whether *A* is good. The monadic collapsing principle then implies that *A* is definitely better than *B*. But this seems false, since it is indeterminate whether *A* lacks the property, viz. baldness, whose absence would constitute the only relevant difference, as compared to *B*.

Hence it seems question-begging to rely on the monadic collapsing principle in a defence of the original collapsing principle from counterexamples of this type. One might object that, instead of relying on the monadic collapsing principle, one could reason as follows: if it is false that *A* is bald and not false that *B* is bald, *A* must have more hair than *B*; and if so, *B* must be balder than *A*. Yet a problem with this objection is that to be balder is not just to have less hair—the proportion of the scalp covered by hair, for example, also matters. And the relative weights these two factors have in contributing to baldness might be indeterminate. Suppose, for instance, that *A* has less hair than *B* but, since it is evenly distributed over his scalp, it is false that *A* is bald. Furthermore, while *B* has more hair than *A*, it is unevenly distributed so some parts of his scalp have little hair, which makes it not false that *B* is bald. But since each of *A* and *B* beats the other in one factor that contributes to baldness and the relative weights of these factors are indeterminate, it is indeterminate whether *B* is balder than *A*. A referee for this journal suggests another reply, which is to concede that *B* is balder than *A*, but to deny that this difference is relevant to which is the better cavalier. That is, one might deny that being less bald is a better-making relation even though not being bald is good making.

[11] Broome, 'Incommensurability', p. 74.

it neither determinate nor indeterminate whether y is Fer than x. But that this clear F-related advantage should translate into a clear advantage of x over y with respect to Fness seems unfounded. It merely seems to imply that either x has a clear advantage over y in respect of its Fness or it is merely indeterminate whether x has an advantage over y in respect of its Fness. And, of course, if it is only indeterminate whether x has an advantage over y in respect of its Fness, then it is not determinate that x is Fer than y.

A deeper problem is that the counterexamples discussed above also seem to be counterexamples to this problematic step in the argument. In the cavalier example, it is false that B is better than A, and not false that A is better than B, but A still does not seem to have a clear advantage over B in respect of its goodness. So Broome's argument for the collapsing principle begs the question as a defence from these counterexamples.

Nevertheless, in order to reinforce the obviousness of his argument, Broome offers an accompanying example. In this thought experiment, you have to name a new Canberra suburb. The suburb should be named after the greatest Australian who does not yet have a suburb. You have narrowed down the candidates to the two Australians Exe and Wye. You have concluded after an investigation that it is false that Wye is a greater than Exe but it is not false that Exe is greater than Wye. **[p. 438]** Broome judges it quite wrong to give the suburb to Wye. The upshot is that unless Exe is the greatest Australian, it cannot be obvious that one should name the suburb after Exe.[12] Broome claims:

> When it is false that y is Fer than x but not false that x is Fer than y, then if you had to award a prize for Fness, it is plain you should give the prize to x. But it would not be plain unless x was Fer than y. Therefore, x is Fer than y. This must be so whether you actually have to give a prize or not, since whether or not you have to give a prize cannot affect whether or not x is Fer than y.[13]

Two replies: first, one possibility is that it could be permissible to give the suburb to Exe but still indeterminate whether one should give him the suburb. If it is indeterminate whether one should award the price for Fness to x, then it would not be strange if it was indeterminate whether x is Fer than y.

Second, even if one grants that it is obvious that one should give the suburb to Exe, this obviousness might not result from Exe's being greater than Wye. If it is obvious that one should give the prize for Fness to x then this might be because it is false that y is Fer than x and indeterminate whether x is Fer than y if one finds a rationality constraint like the following obvious:

> *Avoid indeterminate worseness*
> If possible, choose an option x such that it is determinate that no option is better than x.

This principle seems to be supported by the same intuitions that Broome appeals to in his example. Nevertheless, with the avoid-indeterminate-worseness

[12] Broome, 'Incommensurability', pp. 74–5.
[13] Broome, 'Incommensurability', p. 75.

principle, one may accept the wrongness of giving the suburb to Wye without giving in to the collapsing principle.[14] Thus Broome's attempted vindication of the collapsing principle does not succeed. Hence his defence of completeness, which depends on the collapsing principle, is not cogent.

II. The mere possibility of evaluative indeterminacy

In a recent article, Espinoza argues that the small-improvement argument fails was a result of the mere possibility of evaluative indeterminacy. He writes:

> Let the letter D stand for determinate truth and the letter I stand for indeterminate truth (where $I\alpha$ is equivalent to $\neg D\alpha \wedge \neg D\neg\alpha$). Also note the **[p. 439]** following logical property which is a trivial expansion of the law of excluded middle:
>
> (EM) $D\alpha$ if and only if $\neg(D\neg\alpha \vee I\alpha)$[15]

He then presents a version of the small-improvement argument that takes into account the distinction between determinate and indeterminate truth. It goes as follows, where B is the relation 'better than', E is the relation 'equally good as', x^+ is x with a small improvement, and '$[n,m]$' denotes that the preceding proposition is inferred from propositions n and m:[16]

(1) $D\neg(xBy) \wedge D\neg(yBx)$.
(2) $D(x^+Bx)$.
(3) $[D(xEy) \wedge D(x^+Bx)] \rightarrow D(x^+By)$.
(4) $D\neg(x^+By)$.
(5) $D\neg[D(xEy) \wedge D(x^+Bx)]$. [3,4]
(6) $\neg D(xEy)$. [2,5]
(7) $D\neg(xBy) \wedge D\neg(yBx) \wedge \neg D(xEy)$. [1,6]

The trouble with (7) according to Espinoza is that it does not rule out that it is indeterminate whether x and y are equally good. The third conjunct just states $\neg D(xEy)$, which according to (EM) is equivalent to $D\neg(xEy) \vee I(xEy)$. Espinoza argues that the small-improvement argument fails since it cannot rule out that

(8) $D\neg(xBy) \wedge D\neg(yBx) \wedge I(xEy)$.[17]

But the defendant of the small-improvement argument might not need to rule out (8). Espinoza reports an objection by Carlson, that if axiological completeness holds then the following equivalence is true:

[14] The same reply can, *mutatis mutandis*, be given to the similar example with Sartre's student in Broome, *Weighing Lives*, pp. 172–4.

[15] Espinoza, 'Argument', p. 131.

[16] Espinoza, 'Argument', p. 131. Espinoza has informed me that the 'Refs.' in his paper are typos. Formulas (1), (2), (3) and (4) are premises. The argument would make more sense if (5) was replaced by

(5*) $\neg D(xEy) \vee \neg D(x^+Bx)$.

[17] Espinoza, 'Argument', p. 135.

D-trichotomy: $D(xEy) \Leftrightarrow D\neg(xBy) \wedge D\neg(yBx)$[18]

Given that axiological completeness implies D-trichotomy, it is easily shown that it follows that if (8) is true then axiological completeness is false. So Espinoza's argument is blocked.

To this, Espinoza gives what I take to be an unsatisfactory reply. Espinoza declares that he shall attempt to show that Carlson's D-trichotomy principle is false. His argument for this seems to be **[p. 440]** that 'There may be cases when it is neither true nor false that the comparison pair is coverable by the comparison predicate.'[19] But this is irrelevant since Carlson only claims that axiological completeness implies D-trichotomy, and therefore only cases where it is true that all items are comparable with respect to value (and thus coverable by the comparison predicates 'better', 'worse' or 'equally good') are relevant as counterexamples. Hence Espinoza's case against the small-improvement argument is unconvincing.

III. Rabinowicz's analysis

It does not seem to be a problem for the small-improvement argument that comparative judgements might be indeterminate so long as the judgements appealed to in the argument are determinate. Yet one might go further than Espinoza and question whether the judgements of, for example, de Sousa's virtuous wife and Chang's coffee and tea taster are determinate. Indeed, Rabinowicz questions this. He claims that the small-improvement argument loses its force if we grant that the judgements appealed to in the argument might be indeterminate. Rabinowicz writes:

> The introduction of x^+ does not allow us to definitely rule out the possibility of x and y being equally good, as long as we cannot definitely establish that x^+ is not better than y. The following are mutually compatible claims:
>
> (i) It is indeterminate whether x is equally as good as y.
>
> (ii) It is determinate that x^+ is better than x.
>
> (iii) It is indeterminate whether x^+ is better than y.
>
> In addition, these three claims are jointly compatible with it being determinate that x and y are commensurable.[20]

Rabinowicz does not give any further defence of this suggestion. The controversial claims here are premises (i) and (iii). Chang explicitly rejects (i) and (iii) and offers two arguments why the cases employed in the small-improvement argument do not depend on indeterminacy. I nevertheless believe Rabinowicz's diagnosis of the small-improvement argument is on the right track. In the

[18] Espinoza, 'Argument', p. 137.

[19] Espinoza, 'Argument', p. 137.

[20] W. Rabinowicz, 'Incommensurability and Vagueness', *Aristotelian Society Supplementary Volume* 83 (2009), pp. 71–94, at 74. As we shall see in section V, these three claims and axiological completeness are also jointly compatible with the transitivity of 'better' and 'equally good', which blocks the small-improvement argument.

next section, I shall try to answer Chang's arguments against the indeterminacy interpretation of the small-improvement cases. **[p. 441]**

IV. Chang's objections

Chang calls the cases involved in the small-improvement argument 'superhard cases' and cases where there is a borderline application of a vague predicate 'borderline cases'.[21] Chang offers two arguments for why the superhard cases cannot all be borderline cases. The first argues that the phenomenology of superhard cases is different from that of borderline cases. Chang writes:

> In borderline cases, insofar as we are willing to judge that the predicate applies, we are also willing to judge that it does not apply. Take for example Herbert, a genuine borderline case of baldness. Insofar as we are willing to call Herbert bald, we are also willing to call him not bald. In superhard cases, things are different. The evidence we have inclines us to the judgment that the one item is not better than the other (and not worse and not equally good). So, for example, our research into the philosophical talents of Aye and Bea incline us to the judgment that Aye is not more philosophically talented than Bea: it seems that this is the case without it also seeming that Aye is more philosophically talented. Thus, in a superhard case, insofar as we are willing to judge that 'better than with respect to V' does not apply, we are not also willing to judge that it does apply. In the absence of any explanation for why the phenomenology should be different, there is good reason to think that superhard cases are not cases of vagueness.[22]

Chang seems to argue that in borderline cases we are willing to some extent to say that a certain predicate applies but also to some extent that it does not apply. But in superhard cases one is willing to some extent to judge that a certain predicate does not apply without being willing to any extent to judge that it applies.

The problem is that this phenomenal difference, if there is any, is harder to detect than Chang makes it seem. The sentence 'In borderline cases, insofar as we are willing to judge that the predicate applies, we are also willing to judge that it does not apply.' suggests that in borderline cases we are equally willing to say that the term applies as that it does not apply. This seems false. Consider for example two brothers, Harry and Larry, who are borderline cases of baldness. Larry has less hair than Harry. Even though both are borderline cases of baldness, we might be less willing to call Harry bald than Larry. Yet we would not therefore be less willing to call Harry not bald than to call Larry not bald. Thus the extent to which one is willing to judge that a term applies in a borderline case can be lesser than the extent to which one is willing to judge that it does not apply. Hence in a borderline case, one may to a relatively high extent be willing to judge that the term applies but still only be willing to a very low extent to judge that it does **[p. 442]** not apply. The problem is that such a case seems phenomenally

[21] Chang, 'Parity', p. 680.
[22] Chang, 'Parity', p. 682.

very similar to Chang's description of the superhard case. The difference is that one is not willing to any extent, rather than a very low extent, to judge that the term does not apply. But this tiny phenomenal difference seems hard to detect.

This might explain why I personally fail to see any phenomenal difference between borderline cases and the alleged superhard cases. Take, for instance, de Sousa's Fairly Virtuous Wife. De Sousa writes that the virtuous wife hesitates between $1,000 and virtue.[23] In this case, it seems plausible that the virtuous wife is willing to some extent to judge that the money is better than virtue and also willing to some extent to judge that the money is not better than virtue. This could be part of a plausible explanation of why she hesitates. Similar points can be made for the other versions of the story in the small-improvement argument, like Chang's case with coffee and tea.

Chang's second argument grants that there is some perplexity in superhard cases over whether one item is better than another. The argument from perplexity aims to show that in superhard cases this perplexity does not result from indeterminacy. Chang argues that the perplexity in superhard cases differs from that of borderline cases since it is permissible to resolve the perplexity or indeterminacy by arbitrary stipulation in borderline cases but not in superhard cases. Chang writes the following about borderline cases:

> The resolution of a borderline case lacks what we might call 'resolutional remainder': given all the admissible ways in which the case might be resolved, there is no further question as to how resolution should proceed—any admissible resolution will do. We might put the point supervaluationally in this way: given the precisifications of a vague predicate, there is no further question as to how borderline cases should be resolved; they are resolved by arbitrarily opting for one precisification over another.[24]

That is, in borderline cases there are a number of admissible ways to resolve the perplexity and all of them are permitted. Chang contrasts this with the superhard cases:

> In superhard cases, there is resolutional remainder; given a list of admissible ways in which the perplexity might be resolved, there is still a further question as to how the perplexity is to be resolved, for that resolution is not simply given by arbitrarily opting for one admissible resolution over another. Admissible resolutions might be given by weightings of the various respects relevant to the comparison; on one weighting, Mozart is determinately better, while on another, he is determinately worse. It is not appropriate in superhard cases to resolve the perplexity by arbitrarily adopting one weighting rather than **[p. 443]** another: given the weightings, there is still a further question as to which, if any, weighting one ought to adopt.[25]

Hence in superhard cases there are, according to Chang, a number of admissible ways to resolve the perplexity but not all of them are permitted. So the difference

[23] De Sousa, 'The Good', p. 545.
[24] Chang, 'Parity', p. 684.
[25] Chang, 'Parity', p. 685.

between borderline cases and superhard cases is supposed to be that in superhard cases there are admissible ways to resolve the perplexity that one ought not adopt. But if this is the difference between borderline cases and superhard cases, it seems elusive at best. One wonders how a resolution can be admissible and, at the same time, be one that one ought not adopt. Either this is a mistake, or we need to make a distinction here between two separate types of norms, on which the resolution is admissible on one while forbidden on the other. But then, in addition to the problem of making clear the distinction between borderline and superhard cases, we also have the new problem of how distinguishing between these two types of norms. Furthermore, if a perplexity concerning whether Mozart is better than Michelangelo, for example, ought to be resolved in the affirmative, then would not a rational agent, rather than being perplexed, judge Mozart to be the better?

As with the argument from phenomenology, the supposed difference between superhard and borderline cases seems elusive. Hence neither of Chang's arguments against the indeterminacy interpretation of superhard cases is convincing.

V. The problem of indeterminate comparisons

We shall now explore why the small-improvement argument is blocked by the possibility that the comparisons in superhard cases are indeterminate. If one interprets the negative comparisons in the superhard cases, like 'cup a tastes neither better nor worse than cup b', as $\neg D(aBb)$ and $\neg D(bBa)$ rather than $D(\neg(aBb))$ and $D(\neg(bBa))$, the conflict with axiological completeness disappears. For example, one could interpret Chang's coffee and tea example as follows:

> Suppose you must determine which of a cup of coffee and a cup of tea tastes better to you. The coffee has a full-bodied, sharp, pungent taste, and the tea has a warm, soothing fragrant taste. It is surely possible that you rationally judge that the cup of Sumatra Gold tastes neither *determinately* better nor *determinately* worse than the cup of Pearl Jasmine and that although a slightly more fragrant cup of the Jasmine would taste better than the original, the more fragrant Jasmine would not taste *determinately* better than the cup of coffee.

[p. 444] The trouble is that no plausible transitivity principle would yield that it is determinate that neither does one of the cups taste better than the other nor do they taste equally good. To see this, note that the above story does not rule out that it is indeterminate which of the following combinations of value relations hold, where a is the less fragrant cup of the Jasmine, b is the cup of Sumatra Gold, and c is the more fragrant cup of Jasmine:

(I) $cBa \wedge aBb \wedge cBb$.
(II) $cBa \wedge aEb \wedge cBb$.
(III) $cBa \wedge bBa \wedge cBb$.
(IV) $cBa \wedge bBa \wedge cEb$.

(V) $cBa \land bBa \land bBc$.

Perhaps (III) could be ruled out as unlikely if the improvement of c over a is sufficiently small. Still, neither of the remaining combinations violates transitivity or, for that matter, axiological completeness. So the small-improvement argument is blocked.

As mentioned above, Chang uses the small-improvement argument in her attempt to establish a fourth value relation she calls *parity*. In the superhard cases employed in the small-improvement argument, Chang claims that none of 'better', 'worse' and 'equally good' holds between the items. Instead, she claims that they are on a par. If we accept, as I think we should, that the superhard cases result from indeterminacy rather than incompleteness, we still do not have to deny that the items involved are on a par. Indeterminacy does not rule out the possibility of parity—indeed it provides a plausible way to analyse parity.

> x is *axiologically on a par* with y if and only if it is not determinate that x and y are not equally good.
>
> An agent holds x as *preferentially on a par* with y if and only if it is not determinate that the agent is not indifferent between x and y.

An advantage of this analysis over Chang's conception is that it is more in line with the standard lexical definitions and common usage of 'parity'. The OED2 defines 'parity' as 'The state or condition of being equal, or on a level; equality' and W3 defines it as 'the quality or state of being equal : close equivalence or resemblance : equality of rank, nature, or value'.[26] The problem is that on Chang's conception of parity, **[p. 445]** if two items are on a par then they are not equally good. Thus Chang's conception seems at odds with common usage.

My main reason for deviating at all from the lexical definitions above is that it seems less committing to judge two items to be on a par than to judge that they are equally good. For example, in the cases employed in the small-improvement argument, we seem more willing to judge that the items are on a par than to judge that they are equally good. But as I have argued, we should not then infer that they are unequal in value. The possibility of parity on my analysis does not conflict with the view that if two items are comparable, either one item is better than the other or they are equally good.

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[26] *The Oxford English Dictionary*, 2nd ed., vol. 11, p. 233, s.v. 'parity'. *Webster's Third New International Dictionary*, p. 1642, s.v. 'parity'. The second part of W3's definition, however, seems to suggest a different analysis, along the lines of the following:

> x is axiologically on a par with y if and only if the difference between the value of x and the value of y is small.
>
> x is preferentially on a par with y if and only if the difference between the strength of preference for x and the strength of preference for y is small.