The Mere Addition Paradox, Parity and Vagueness: the Parity View Reconsidered*

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Abstract

Suppose that people are 'merely' added to the world, so that the extra people have lives worth living, leave existing people unaffected and that there is no additional social injustice. If the well-being level of the added people is within a 'neutral' range or zone where the outcome is incommensurate with the initial state, the parity view claims that the two states are on a par. It allows for a range or zone with imprecise borders. This paper argues that a version of this view which takes its lead from Derek Parfit's work can, with revision, address a set of objections raised by John Broome. In cases of parity, this view is consistent with Jan Narveson's intuition that whether or not to have a child is normally a matter of moral indifference. Wlodek Rabinowicz's alternative version of the parity view involves a distinct view of value relations and can also respond convincingly to Broome's objections.

Keywords: ethics, population, parity, utilitarianism, incommensurability, vagueness.

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0 Introduction.

When, if at all, is it better or worse to add people to the world, if the extra people have lives worth living, while the addition leaves existing people's lives unaffected and does not involve any social injustice? Or is it sometimes, or in general, neither better nor worse to do so in these circumstances? Recent work on these questions often starts from the seminal contributions of Jan Narveson[1] and Derek Parfit.[2] Some version of Parfit's 'mere addition paradox' is usually addressed by those who have contributed to this literature. In his discussion of the paradox, Parfit explores the relation of 'rough comparability'. This is a close relative of the relations of 'rough equality' and 'parity' – associated, respectively, with James Griffin and Ruth Chang - which are discussed in a growing philosophical literature.[3] In the recent literature two discussions of mere addition invoke the relation of parity.[4] Both endorse what I term the 'parity view'. This is the view that if people are added to the world at a level of well-being in some range or zone – leaving other people's lives unaffected and without any social injustice – the outcome is on a par with the initial situation. On this view the initial situation and the outcome of addition are 'incommensurate' in the sense that one is not better than the other and they are not exactly as good. The parity view usually adds the claim that the relevant range of levels of well-being is, or can be, imprecisely bounded. Both versions of the parity view have responded to a range of serious objections raised by John Broome in his *Weighing Lives*.[5] Broome has replied to these responses.[6] This paper argues that a version of the view which takes its lead from Parfit's work can – with revision - successfully address these objections and replies. Wlodek Rabinowicz has advanced an alternative version of the view and has responded to Broome's objections. I argue that this version of the parity view can also respond convincingly to these objections. There are other potential objections to the parity view, not least because attempts to define the relation of parity remain controversial. But I do not discuss those here.

The paper is organised as follows: the first section sets the scene by explaining Parfit's discussion and relevant aspects of the version of the parity view which takes its lead from it; the second section argues that this version, if revised, can address Broome's main objections which invoke an intuition which he finds attractive; the third section argues that Broome's remaining objection lacks force; section four argues that Rabinowicz can also respond convincingly to Broome's objections; and section six concludes.

1. *Parfit on Mere Addition and 'Rough Comparability': the First Parity View*

In *Reasons and Persons* Derek Parfit considers various versions of the 'mere addition paradox'. Consider three states: *a, a*+ and *b*. In *a* everyone has a very high quality of life. Parfit defines a 'valueless level' of well-being such that below this level 'if lives are worth living, they have ... value for the people whose lives they are. But the mere fact that such lives are lived does not make the outcome better'.[7] Parfit allows for the possibility that there are lives which are not valueless in this sense, so that adding people above this level can make the outcome better. In state *a*, people are living above the valueless level; while in *a*+ a group is added to the population which has a level of well-being below the valueless level. In *b* everyone has a level of well-being which is four-fifths the level of well-being in *a*, while the population in *b* is twice the size of the population in *a*. According to Parfit adding people to the population is 'mere addition' when extra people exist: (i) who have lives worth living; (ii) who affect no one else; and (iii) whose existence does not involve any social injustice. For simplicity the last of these conditions is sometimes dropped in explaining the paradox.[8]

Parfit's paradox arises from attempting to avoid the following conclusion:

The Repugnant Conclusion: for any possible population of at least 10 billon people, all with a very high quality of life, there must be a much larger imaginable population whose existence, if other things are equal would be better, even though its members have lives that are barely worth living.

Suppose that one accepts that *b* is better than *a* on the grounds that it is better to double the size of population if people's level of welfare in the new state is four-fifths of its initial level. Then if there are 10 billion people who have a very high quality of life in *a*, acceptance of this claim can lead one to the repugnant conclusion if 'at least as good as' is transitive. To make this claim more precisely we need an account of value relations. In the first parity view 'at least as good as' is a primitive relation. 'Better than' and 'exactly as good as' can be defined in terms of this relation so that: *x* is better than *y* if and only if *x* is at least as good as *y* and it is not the case that *y* is at least as good as *x*; *x* is exactly as good as *y* if and only if *x* is at least as good as *y* and *y* is at least as good as *x*. Consider various states of the world: *x*, *y*, *z* in the set of possible states *X*. 'At least as good as' is assumed to have the following properties: *transitivity*: for all *x*, *y*, *z* in *X* if *x* is at least as good as *y* and *y* is at least as good as *z* then *x* is at least as good as *z;* and *reflexivity* for all *x* in *X*, *x* is at least as good as *x*. However, it is assumed that the following property may fail to hold: *completeness*: for all *x*, *y* in *X* (where *x* and *y* are non-identical) *x* is at least as good as *y* or *y* is at least as good as *x*. Transitivity of 'at least as good as' implies: transitivity of 'better than' which requires that for all *x*, *y*, *z* in *X* if *x* is better than *y* and *y* is better than *z* then *x* is better than *z*; and *BE* transitivity: for all *x*, *y*, *z* in *X* if *x* is better than *y* and *y* is exactly as good as *z* then *x* is better than *z*.[9]

Now consider *b* and *a* where *b* has twice the population in *a* and everyone in *b* has four-fifths the level of well-being in *a.* If we judge that *a* is better than *b* we may also judge that *c* - which has twice the population in *b* and four-fifths the level of well-being in *b* - is better than *b.* If we repeatedly accept this reasoning, and people in *a* have a very high level of well-being, and *a* has a population of at least 10 billion and 'better than' is transitive we are led to the repugnant conclusion. So Parfit resists the claim that *b* is better than *a*. Suppose next that we assume that *a* is at least as good as *b*. Now consider *a*+. This comes about by mere addition: people are added to the population whose lives are worth living and whose addition to the population does not affect those who are already alive. Because the quality of life of the extra people is below the valueless level their addition does not make the outcome worse. Suppose now that we conclude that *a*+ is at least as good as *a*. Then if *b* is better than *a*+ on the grounds that *b* has a higher aggregate level of well-being and a more equitable distribution, then *b* is better than *a*+ and *a*+ is at least as good as *a*. *a*+ is at least as good as *a* means *a*+ is better than *a* or *a*+ is exactly as good as *a*. If the first disjunct is true, then transitivity of 'better than' implies that *b* is better than *a*; and if *a*+ is exactly as good as *a* then *BE* transitivity implies that *b* is better than *a*. But as we saw this can lead one to accept the repugnant conclusion and to avoid that conclusion we have assumed that it is not the case that *b* is better than *a*. So we have a contradiction. This is one version of the 'mere addition paradox'.

How can we sustain our belief that merely adding people to the world at certain levels of welfare does not make the outcome worse while rejecting the repugnant conclusion? One of Parfit's suggestions is that even if *a*+ is not worse than *a*, it need not be the case that *a*+ is at least as good as *a*. This claim reasonably leads some to conclude that Parfit thinks that *a*+ and *a* are 'incommensurable' or 'incomparable'.[10] But Parfit claims that they are 'roughly comparable'. For Parfit improving *a*+ a little or somewhat does not make *a*+ better than *a*.[11] But improving *a*+ by a significant amount presumably can make it better. The relation of ‘rough comparability’ has some characteristics associated with the controversial relation of ‘parity’. There are different definitions of parity. In the first parity view, Mozaffar Qizilbash uses a further primitive relation: ‘is comparable with’. Then ‘on a par with’ is defined as follows: *x* is on a par with *y* if and only if *x* is comparable with *y* and it is not the case that *x* is at least as good as *y* or that *y* is at least as good as *x*. For convenience, following Broome, I define ‘incommensurate’ as follows: *x* and *y* are incommensurate if and only if it is neither the case that *x* is at least as good as *y* nor that *y* is at least as good as *x*.[12] If so, when states are on a par they are comparable and incommensurate.

What lies behind the primitive relation of ‘comparability’? Unlike standard accounts, items might be comparable when they appear to be equal in the sense of being on a similar, if not precisely the same, level while one is not better than the other. According to Ruth Chang our ‘intuitive’ notion of comparability allows for this possibility even if often in such a case someone might be tempted to say that items are ‘incomparable’.[13] This intuitive notion of ‘comparability’ allows us to drive a wedge between cases of incomparability and parity. According to Qizilbash a distinctive ‘mark’ of parity is this: if *x* is on a par with *y* then any slight improvement (or worsening) in either *x* or *y* does not make it better (worse) than the other, but any significant improvement (worsening) does.[14] This is not the only possible way of defining the mark of parity and the definition of parity remains a matter of controversy.[15] For the purposes of this paper, I stick to the definitions of this relation in the two parity accounts. On the first parity view, the distinction between incomparability and parity is that if two states are incomparable then even a significant improvement (worsening) in one will not make it better (worse) than the other. Qizilbash does not make the notion of a ‘slight’ or ‘significant’ change precise, but rather takes ‘significant’ to be a vague predicate. One might think of a ‘slight’ change as a change of no more that some positive amount, where the relevant amount is not precisely defined. On the first parity view, Parfit's examples of 'rough comparability' have the mark of parity. If so, *a*+ is on a par with *a* and this no longer implies that *a*+ is at least as good as *a*. So accepting that *b* is better than *a*+ no longer leads one to judge that *b* is better than *a*. This parity view provides an explanation of how Parfit avoids (or may avoid) the contradiction which is at the heart of the relevant version of the mere addition paradox.[16]

To explain the first parity view further I use a variation of a representational device which Broome adopts:[17] a well-being configuration. Suppose for simplicity that we are only concerned with the addition of one person to the world at a level of well-being μ and that the level of μ can be varied through slight changes. One might imagine that each level of well-being realises different values and we can vary the level of well-being by increasing or decreasing the relevant contributory values a little. Figure 1 shows the level of μ on a horizontal line, increasing as one moves to the right.

Figure 1: A Well-Being Configuration.

$\leftarrow$ (worse) $\rightarrow$ (better)

μ

Suppose that there is a range of levels of μ such that below this range it is worse to add someone to the world. Above this range it is better to add someone to the world. Assuming that we can measure well-being on a cardinal scale which is interpersonally comparable, we can then write: the vector of well-being levels for existing people as $\mathbf{w}^e$ and $(\mathbf{w}^e, \mu)$ for the vector of well-being levels which includes the well-being level of the added person. In figure 2, if $\mu<\pi_1$, μ is in the 'worse zone' and $\mathbf{w}^e$ is better than $(\mathbf{w}^e, \mu)$ while if $\mu>\pi_2$, $(\mathbf{w}^e, \mu)$ is better than $\mathbf{w}^e$ and μ is in the 'better zone'. The zone in between the better and worse zones is a zone of incommensurateness since in this zone addition is neither better nor worse and yet a slight change in the value of μ will not necessarily make addition of a person better so that it is not exactly as good either. On the first parity view, for all μ in the incommensurate zone, $\mathbf{w}^e$ and ($\mathbf{w}^e$, μ) are on a par.[18]

Figure 2: Incommensurateness with Exact Borderlines.

$\mu<\pi_1$	π_1	π_2	$\mu>\pi_2$
The worse zone	Incommensurate Zone		The better zone

μ

On this view we can also say something about the nature of the zone in figure 2. Suppose we define a 'narrow' incommensurate zone as follows: an incommensurate zone is 'narrow' if and only if for all μ in the zone, any significant increase (or decrease) in μ makes ($\mathbf{w}^e$, μ) better than $\mathbf{w}^e$ [or $\mathbf{w}^e$ better than ($\mathbf{w}^e$, μ)]. If a zone of incommensurateness is 'wide' it is not narrow. The first version of the parity view implicitly assumes that: any significant increase (decrease) in μ makes ($\mathbf{w}^e$,μ) significantly better (worse).[19] Given this, the first parity view implies that if the incommensurate zone is a zone of parity it is narrow. To see this, suppose that the incommensurate zone is a zone of parity and it is not narrow (i.e. wide). Then there is some μ in the zone such that a significant increase (or decrease) in μ would not make ($\mathbf{w}^e$, μ) better than $\mathbf{w}^e$ [or $\mathbf{w}^e$ better than ($\mathbf{w}^e$, μ)]. If the incommensurate zone is a zone of parity, for all μ in the incommensurate zone $\mathbf{w}^e$ is on a par with ($\mathbf{w}^e$, μ). Furthermore, if $\mathbf{w}^e$ is on a par with ($\mathbf{w}^e$, μ) then by the mark of parity, any slight improvement (worsening) in either state will not make it better (worse) than the other, but any significant improvement (worsening) will. We have assumed that any significant increase (decrease) in μ makes ($\mathbf{w}^e$, μ) significantly better (worse). So if for all μ in the incommensurate zone $\mathbf{w}^e$ is on a par with ($\mathbf{w}^e$, μ) then any significant increase (or decrease) in μ would make ($\mathbf{w}^e$, μ) significantly better (worse) and would make ($\mathbf{w}^e$, μ) better than $\mathbf{w}^e$ [$\mathbf{w}^e$ better than ($\mathbf{w}^e$, μ)]. Earlier we concluded from the zone not being narrow that there is some μ in the zone and any significant increase (or decrease) in μ would not make ($\mathbf{w}^e$, μ) better than $\mathbf{w}^e$ [or $\mathbf{w}^e$ better than ($\mathbf{w}^e$, μ)]. This is a contradiction. So the zone is narrow.

The first parity view also implies that the incommensurate zone has imprecise borderlines.[20] The argument runs as follows. If μ takes a value in the incommensurate zone close to the better (worse) zone any slight increase (reduction) in μ cannot, on the parity view, make the difference between whether or not the two states are on a par.[21] Any significant change in value will make a difference. And 'significant' is a vague predicate. So the borderlines of the incommensurate zone are imprecise. If we accept this, figure 2 must be adjusted and replaced by figure 3. In this figure, above π'' ($\mathbf{w}^e$, μ) is better than $\mathbf{w}^e$ and μ is in the better zone, while below π' $\mathbf{w}^e$ is better than ($\mathbf{w}^e$, μ) and μ is in the worse zone.

Figure 3: B-Incommensurateness with Vague Borderlines.

μ< π'	π'	π''	μ>π''
————————————	-------————————	------————————	
The worse zone	Incommensurate Zone		The better zone

μ

It is worth noting that while on the first parity view the zone of incommensurateness cannot be wide, the width of the zone between the better and worse zones may be considerably wider than the incommensurate zone depending on how extensive its rough borderlines are.

In statements of the first parity view the imprecision of the borderlines of the incommensurate zone is analysed using a supervaluationist view of vagueness.[22] On this view there are many different 'admissible' ways of making a vague predicate such as 'bald' or 'tall' completely precise. If a statement comes out true on all 'admissible' sharpenings it is 'super-true'. If it comes out false on all such sharpenings it is 'super-false'. If it is true on some but not all admissible sharpenings it is neither super-true nor super-false: there is vagueness. It is easy then to see how the parity view allows for vagueness. If we return to figure 3, there will be many different admissible ways of sharpening the borderlines which give rise to vague zones between the incommensurate zone – if it is a zone of parity - and the better and worse zones. Given that 'admissible' may also be vague, there can also be second-order vagueness on the first parity view.[23]

2. *Broome's Neutrality Intuition: The Ad-Hocness and Greediness Objections.*

John Broome's discussions of mere addition focus on, what he terms, the 'intuition of neutrality'. There is more than one version of this intuition. It is important that what Broome means by 'neutral' is 'ethically neutral'.[24] And for Broome, a level of well-being is neutral if, as regards a life lived at that level of well-being, 'it is neither better nor worse that this life is lived than that it is not lived'.[25] One possibility he considers is that at the neutral level $\mathbf{w}^e$ is exactly as good as $(\mathbf{w}^e, \mu)$: there is only one neutral level π which marks a sharp boundary between lives which are better lived than not and those which are better not lived than lived. It is shown in figure 4.

Figure 4. One Neutral Level.

$\mu<\pi$ | $\mu=\pi$ | $\mu>\pi$

The worse zone | The better zone

μ

Here neutrality involves exact equality – at the neutral level the worlds with and without the added person are exactly as good. But Broome's intuition is that it is *very often* neutral to add someone to the world.[26] This seems to imply that there is a wide neutral range of levels of well-being such that it is neither better nor worse that a person is added at those levels. Yet on the first parity view the neutral range is an incommensurate zone which cannot be wide. Indeed one element of Broome's reply to Qizilbash is that '[m]ost people think the neutral range is wide'.[27] He claims that the intuition of neutrality implies a neutral range or incommensurate zone which is 'wide' in the sense that it can contain two levels of well-being, with one being much (and thus significantly) better than the other.[28] He recognises that if the zone of parity is narrow, then 'Qizilbash and I are talking past each other'. He goes on: '[t]he problem that concerns me is that our intuition suggests there is a wide neutral range. Qizilbash's response ... does not meet the problem that concerns me, since it implies the zone is insignificantly wide.'[29] The first parity view is inconsistent with the intuition that the neutral range is wide. One reason for this is that it makes the 'mark' of parity central. Yet as we saw earlier the first parity view also implicitly assumes that any significant increase (decrease) in μ makes $(\mathbf{w}^e,\mu)$ significantly better (worse). If we drop this assumption then the zone need not be narrow. Dropping this assumption may allow Qizilbash to respond more convincingly to Broome's objection with a minor revision of the first parity view.

Broome also thinks that one needs to provide a reason *why* neutrality is a form of incommensurateness rather than equality.[30] Rabinowicz calls this the '*ad-hocness* objection'.[31] The first parity view allows for a form of equality which is not exact: it does not deny that neutrality is a form of equality. This is unsurprising since the word 'parity' usually refers to equality. On this view, in cases of parity, the reasons or pro-attitudes (such as choice dispositions) favouring each action or state would be of equal force even if exact equality does not hold. If this is the right way to understand parity the obvious attitude to take to states which are on a par is a form of indifference (or 'equi-preference'). If one were indifferent between states of the world, it would not make much difference which one chooses. So when it comes to choosing between having a child and not doing so, if the level of well-being of the added person is within the neutral range and the relevant range is a range of parity one might say that it is a matter of moral indifference whether or not one has a child (if her life is worth living, nobody else is affected and there is no social injustice). Or one might say more generally that it is a matter of moral indifference whether someone (or some group) is 'merely' added to the world in the relevant range. That would coincide with one interpretation of the neutrality intuition articulated by Narveson who claims that 'having children ... is normally a matter or moral indifference'.[32] On this interpretation, it would be rationally and morally permissible to choose either option. That seems to be what lies at the heart of the neutrality intuition. Indeed, Narveson writes that '[i]f an action would have no effects whatever on the general happiness, then it would be morally *indifferent*: we could do it or not just as we pleased'.

In responding to Qizilbash, Broome suggests that his remark that '[n]eutrality is most naturally understood as equality of value'[33] was meant to apply only to a particular context. In cases where there are choices involving more than one dimension it is natural to think that the values may be 'incommensurable'. But when only one value is at stake this is not a natural understanding: it is more natural, Broome suggests, to think that the options – say two glasses of lemonade which are valued because they realise one value (pleasure) – are equally good. And in adding people to the world there is only one value 'if it is a value' at stake: the 'number of people'. So it is not clear why there is 'incommensurability' in this case. Broome suggests that Qizilbash provides the beginnings of a response to this worry when he claims that comparisons involving states in which some people are alive and others in which they are not are 'complex' in a way that cases involving a fixed population are not.[34]

How can the first parity view respond? Since this view begins from Parfit's text, it is worth considering what Parfit himself says. Parfit does not seem to be very concerned by the *ad-hocness* objection. After suggesting that in the relevant example of mere addition '*not worse than* does not imply *at least as good as*' Parfit adds that 'in many other areas these are the sorts of claims that we ought to make'.[35] The relevant claim about 'rough comparability' presumably depends on our intuitions about examples. The example Parfit offers involves comparing the values of two Poets and a Novelist. But it is important that the force of Parfit's claim in no way depends on there being a multiplicity of values. For example, in a comparison between the value of a Poet and a Novelist 'rough comparability' or parity may hold because the items being compared - e.g. the achievements of the relevant authors - are rather different in nature. This point applies even if there is only one value – achievement – involved in the comparison. The same could be said of states of the world in which a person is or is not alive. The fact that some people are alive in one state and not in another makes them harder to compare. That, rather than a multiplicity of values, may be what makes the comparison of two states of the world more 'complex' than in cases of fixed population.

There are, nonetheless, at least two other ways of responding to the *ad-hocness* objection to the first parity view. The first suggests that the difference between choices which involve multiple values and those involved in adding people to the world are less different than Broome suggests. Suppose that a couple is faced with the choice of whether or not to have a child, given that the added life will be worth living and will not affect anyone else. This may be a 'hard choice' of the sort discussed in the literature on 'incommensurability'. Adding a new life would alter the aggregate amount of welfare and the average quality of life. More than one intuition or value may come into play when comparing states of affairs even in cases of mere addition. Parfit's discussion of mere addition may simply capture the tension between these intuitions or values. Indeed, one might go further and suggest that the intuitions which underlie our value judgements in this area may be rough or imprecise. That suggests that there may indeed be cases of what might be termed ‘rough comparability’ in evaluative judgements. This line of argument supports the parity view. A second way of defending the possibility that there is ‘rough comparability’ or incommensurateness in cases of mere addition suggests that it can be hard to weigh the relative value of *actual* and *potential* lives. And if imprecise or rough weighing is at the root of problems of comparability, then these sorts of cases can, again, be characterised in terms of ‘rough comparability’ because the respective weight to give to actual and potential lives can be imprecise. In fact, since Broome’s own view involves vagueness, these lines of argument may also support his view.

Another doubt about the first parity view which Broome voices relates to a further objection he raises to the view that neutrality is incommensurateness. The doubt relates to the intuition that neutrality is not ‘greedy’. It is worth noting from the outset that a variation of this objection may also apply to Broome’s own view, even though Broome eventually rejects the neutrality intuition.[36] On Broome’s view incommensurateness involves a sort of ‘greedy neutrality’. He illustrates this point with a version of the mere addition paradox. To explain it, I introduce Broome’s own notation. In this notation each possible state is represented by a vector.[37] Each place in the vector stands for a person who lives in at least one of the states of affairs being compared. The corresponding place in each vector compared stands for the same person. In a state where she does not exist, her place contains an Ω. If she exists, her place contains a number which indicates her lifetime well-being. This version of the mere addition paradox involves four states of affairs:[38]

$k = (4,4, \ldots 4, 6, \Omega)$;

$l = (4,4, \ldots 4, 6, 1)$;

m = (4,4, ... 4, 4, 4);

n = (4,4, ... 4, 4, Ω).

Suppose that 4 and 1 are in the incommensurate zone or neutral range. Broome's version of the paradox runs as follows. First, we judge that *m* is better than *l* because *m* has a greater aggregate of well-being, and a more equal distribution, than *l* does. Because 1 and 4 are in incommensurate zone, *k* and *l* are incommensurate. Broome claims that it cannot be true that *k* is better than *m.* If it were, then, by transitivity of 'better than', *k* is better than *l*. However, we know that *k* and *l* are incommensurate. So we would be led to contradiction. But Broome insists that *k* is better than *m*. He thinks this because in moving from *k* to *m* there are two changes. Firstly, one person has come into existence and the change is neutral because 4 is in the neutral range. Secondly, one person's well-being has fallen from 6 to 4. This is a bad thing. Broome thinks that the combined effect of a neutral change and a change for the worse implies that *m* is worse than *k*. If *k* and *m* are incommensurate, neutrality is not what it should be because it 'swallows up' (i.e. in some way compensates for) the badness of reducing one person's well-being from 6 to 4. This makes the neutrality involved in an incommensurate zone implausibly 'greedy'. Broome's intuition is that neutrality is not 'greedy' and this is his main reason for rejecting the neutrality intuition when it is characterised in terms of incommensurateness. This is the 'greediness objection'. Broome later suggests that this sort of 'greedy' neutrality has even more implausible implications in the context of examples which he interprets in terms of global warming.

The central and indeed most robust response that the first parity view can make to this objection is that, in cases of mere addition, the addition of the extra person (or group) leaves all existing people unaffected and does not involve any social injustice. Within the straight jacket imposed by the definition of mere addition we cannot say anything about states such as *k* and *m* where one person is added with a level of well-being in the neutral range while an existing person's level of well-being is reduced. This is Qizilbash's 'official' response to the greediness objection. Nonetheless, one 'hunch' he entertains in the context of Broome's greediness objection runs as follows: if addition of a person in the neutral range involves any sacrifice in values it cannot involve any significant sacrifice.[39] If so, neutrality may not be 'implausibly' greedy. Broome does not object to this: his claim is that in some of the examples he cites, such as one involving global warming, 'the bad effect that is swallowed up is very significant' and adds that '[a] sort of neutrality which can swallow up such badness is not intuitively neutral'.[40] In those sorts of cases even the hunch described above does not capture the version of the neutrality intuition that Broome has in mind here. But the first parity view does not attempt to capture this version of the intuition. So it is not clear that this is a genuine objection to it.

3. *The Vagueness Objection.*

Broome's final objection begins from the observation that if there is an incommensurate zone, the zone must have imprecise borderlines. Broome does not have an argument for such imprecision which is specific to this case. He thinks that 'better than' is vague and this is an instance of it.[41] He relies on intuition to convince us that this is so.[42] His 'vagueness objection' applies to views that involve an incommensurate zone and relies on his 'collapsing principle'. Given the version of supervaluationism adopted here, some predicate *F* and two statements *A* and *B*, this can be stated as follows:

The Collapsing Principle: For any predicate *F* and any two things *A* and *B*, if it is super-false that *B* is *F*er than *A* and not super-false that *A* is *F*er than *B* then *A* is *F*er than *B*.

Broome claims that incommensurateness and vagueness are incompatible. He assumes that the incommensurate zone has imprecise borderlines. Consider a level of μ at which it is vague whether it is better or incommensurate whether to add someone to the world. For illustrative purposes consider a point in figure 3 in the vague zone between the incommensurate zone and the better zone. Here it is not super-false that ($\mathbf{w}^e$, μ) is better than $\mathbf{w}^e$ (since it is true on some but not all admissible sharpenings) but it is super-false that $\mathbf{w}^e$ is better than ($\mathbf{w}^e$, μ) since for all levels of μ in the incommensurate zone (which are below the level we are considering) it is false that $\mathbf{w}^e$ is better than ($\mathbf{w}^e$, μ). The collapsing principle then implies that ($\mathbf{w}^e$, μ) is better than $\mathbf{w}^e$ and there is no vagueness about it. We began by saying that at this point it is vague whether this is so. This is a contradiction. So we cannot hold that the borderlines of any incommensurate zone are imprecise while accepting the collapsing principle. Of course, this means that if one accepts the collapsing principle one should reject the first parity view. Yet Broome admits that he has not convinced many of the truth of the collapsing principle and it has provoked criticism[43] so that it is not obvious that one should reject the view that the borderlines of any incommensurate zone are imprecise.

Qizilbash does not directly challenge the collapsing principle. He follows Chang's critique of Broome's own view suggesting that the principle leads Broome to deny higher-orders of vagueness.[44] Broome has responded to this claim. To explain his response I must briefly introduce elements of Broome's view. Broome thinks that the concept of the 'neutral level' is vague.[45] Given supervaluationism, it can be sharpened in different admissible ways. On each admissible sharpening of the 'neutral level' it is either true that $\mathbf{w}^e$ is better than ($\mathbf{w}^e$, μ) or that ($\mathbf{w}^e$, μ) is better than $\mathbf{w}^e$ or that $\mathbf{w}^e$ is exactly as good as ($\mathbf{w}^e$, μ). In a well-being configuration Broome's position involves a single vague zone between the better and worse zones. In figure 5, there is a single vague zone: below v' levels of μ are in the worse zone and above v’’ they are in the better zone. If there is vagueness about the neutral level, it is plausible that there is also second-order vagueness about it. In terms of figure 5 below, this would imply that the borderlines of the vague zone are also vague.

Figure 5: A Vague Zone with Exact Borderlines.

μ <v’ v’ v’’ μ>v’’

——————————————------------------------------------——————————————

The worse zone Vague Zone The better zone

μ

How can one allow for this on the supervaluationist account? One can do so by supposing that ‘admissible’ is a vague predicate. Each sharpening of ‘admissible’ sharpens the borderlines of the vague zone.[46] Second-order vagueness is accommodated in figure 6 where the zone of first-order vagueness has imprecise borderlines represented by dotted lines:

Figure 6: A Vague Zone with Imprecise Borderlines.

μ<v’ v’ v’’ μ>v’’

——————————......--------------------------------.....——————————

The worse zone Vague Zone The better zone

μ

Broome’s argument against views which involve incommensurateness depends on the collapsing principle. This principle is itself based on an intuition about asymmetry about super-falsity. Here is an alternative, if similar, principle involving asymmetry about super-truth.

Alternative Collapsing Principle: If *x* is *F*er than *y* is super-true on some sharpening of ‘admissible’ and *y* is *F*er than *x* is not super-true on any sharpening of ‘admissible’, then *x* is *F*er than *y*.

If one accepts the logic of asymmetry, then I think that one should accept this principle. But if so, in the present context, there is no second-order vagueness.To check this, suppose that there is second-order vagueness so that there are levels of μ such that on some but not all sharpenings of ‘admissible’ ($\mathbf{w}^e$, μ) is better than $\mathbf{w}^e$ is super-true. For illustrative purposes, consider a point in the zone of second-order vagueness bordering the better zone in figure 6. At this level of μ there is a sharpening of ‘admissible’ such that it is true on any admissible sharpening of the zone of first-order vagueness that ($\mathbf{w}^e$, μ) is better than $\mathbf{w}^e$ – so that ($\mathbf{w}^e$, μ) is better than $\mathbf{w}^e$ is super-true. But at this level of μ, for all sharpenings of ‘admissible’, it is not super-true that $\mathbf{w}^e$ is better than ($\mathbf{w}^e$, μ). By the alternative collapsing principle then ($\mathbf{w}^e$, μ) is better than $\mathbf{w}^e$. Since there is no vagueness about it we have a contradiction. So there is no second-order vagueness. If one thinks – as most commentators in the literature on vagueness do - that there is second-order vagueness, this seems to be an unpalatable implication of adopting the logic of asymmetry which underlies the alternative collapsing principle. It leads to a serious doubt about the logic of asymmetry. This argument is a little different to one advanced in Qizilbash’s statement of the parity view and I explain that argument and Broome’s response to it in the appendix.

Broome accepts that his view is incompatible with second-order vagueness. In responding to Qizilbash’s claim to this effect he writes: ‘[h]e is right, but it does not bother me much’.[47] He thinks that ‘[u]ndoubtedly, the borderline between worlds that are better than *A* and worlds that are not better than *A* is vague’, so that ‘better than’ has first-order vagueness. But he is not ‘convinced that it has second-order vagueness’.[48] He goes on:

> [o]ur general intuition in favour of second-order vagueness arises from the general thought that, when we are dealing with a vague predicate, there cannot be any sharp borderline anywhere. But there has to be a sharp borderline somewhere. At the far right of

> Qizilbash's figure 5 [figure 5 above] there are worlds that are better than *A* (that is, $\mathbf{w}^e$), whose betterness is not infected by vagueness of any order. In the middle, there are worlds whose betterness, relative to *A* is infected by vagueness of some order. There must be a sharp borderline between those which are infected and those that are not. Since there has to be a sharp borderline, I do not see why there should not be one at the edge of the zone of first-order vagueness. If so, there is no second-order vagueness.[49]

How might the first parity view respond to the claim that there is no second-order vagueness? One place to start is with theories of vagueness and what Broome terms the 'general intuition in favour of second-order vagueness'. In an introductory text, Rosanna Keefe writes that '[i]t is widely recognised since Russell onwards ... that borderline cases of a vague predicate are not sharply bounded'.[50] Keefe distinguishes three senses in which the term 'higher-order vagueness' can be or is used. On one it refers to borderline cases not being sharply bounded. This requires only second-order vagueness. On the second sense it refers to vagueness of any order greater than one. On a third it refers to 'unlimited higher-order vagueness' which involves an 'unlimited hierarchy of orders of borderline case'.[51] The first of these senses of higher-order vagueness is less demanding than the others, since it only demands that borderline cases are not sharply bounded. Broome's view excludes even this less demanding notion. It can be argued that if one accepts that borderline cases of vague predicates must themselves involve borderline cases one must also accept that there is an 'unlimited hierarchy of orders of borderline case'.[52] This sort of 'unlimited hierarchy of higher-order vagueness' seems to underlie the intuition that 'when we are dealing with a vague predicate, there cannot be any sharp borderline anywhere'. But one might accept that there is higher-order vagueness, without accepting that this extends beyond a few levels. And it is certainly hard to accept Broome's view that vagueness is very pervasive – so that 'better than' (or the 'neutral level') is *undoubtedly* vague – while also accepting that vagueness does not extend beyond first-order. For those who accept the need to accommodate second-order vagueness, Broome's acceptance of the collapsing principle may come at too high a price. The first parity view must be rejected if one accepts this principle. But if the principle is not *obviously* true or widely accepted and if its acceptance comes at a high cost it seems unlikely that Broome's claim that vagueness and incommensurateness are incompatible will convince many. For this reason, the vagueness objection lacks force.

4. Rabinowicz's Responses to Broome's Objections.

Rabinowicz's version of the parity view differs from the first parity view because it emerges from a distinct view of value relations based on a 'fitting attitudes analysis of value'. To understand how he responds to Broome's objections we need a brief description of his proposal. On Rabinowicz's view, value relations are initially defined informally as follows: '[a]n object is better than an another iff [i.e. if and only if] one is required to prefer it'; '[t]wo items are *equally good* iff [i.e. if and only if] they ought to be equi-preferred, i.e. if one is required to be indifferent between them'; and '[t]wo items, *x* and *y*, are *on a par* iff [i.e. if and only if] it is (i) permissible to prefer *x* to *y*, and permissible to prefer *y* to *x*'.[53] He also defines 'radical' incomparability as follows: '*x* and *y* are *incomparable* if and only if it is required not to prefer one to the other or to be indifferent'.[54] Here Rabinowicz is using 'preference' to refer to a disposition to choose.[55] His definition of incommensurateness is nonetheless consistent with that adopted in the first parity view: *x* and *y* are *incommensurate* if and only if they are not equally good and neither is better than the other.

The more formal development of Rabinowicz's account uses an 'intersection model' which involves a class of all permissible preference orderings *K*. His formal definitions of relevant relations are then: *x* is *better* than *y* if and only if *x* is preferred to *y* in every ordering in K; x and y are *equally good* if and only if they are equi-preferred in every K-ordering; and x and y are *on a par* if and only if x is preferred to y on some K-orderings and y is preferred to x on other K-orderings. With a view to consistency with earlier sections, I depart from Rabinowicz's terminology and write π for a neutral level and the well-being of person i in state of the world x as $W_i(x)$. For all states x in X, *neutral range utilitarianism* ranks states of the world according to the following formula:

$$\Sigma_{\text{i exists in } x} [W_i(x) - \pi]$$

Rabinowicz writes that a preference ordering P_π on the set of states of the world is *induced* by a well-being level π if and only if for all states of the world x, the position of x in P_π is determined by this formula.

It is easiest to explain how Rabinowicz responds to the *ad-hocness* objection by considering an example he offers.[56] In this example there are three people - one of whom may or may not exist – and four states of the world:

e = (3,4,Ω);

f = (3,4,1);

g = (3,3,3);

h = (3,3,Ω).

Suppose that 1 and 3 are both in the neutral range. Now consider the formula for neutral range utilitarianism. If $\pi>2$, e is preferred to g and if $\pi<2$ g is preferred to e. Different choices of π induce different preference orderings. Given that 1 and 3 are both in the neutral range, Rabinowicz suggests that it follows that it is permissible to prefer e to g and it is also permissible to have the opposite preference. Clearly this is an instance of incommensurateness since neither *e* nor *g* is preferred in each *K* ordering; nor are they equally good in each *K* ordering. Rabinowicz's answer to the question: '[h]ow can we explain that mere additions result in incommensurateness?' then strikes him as obvious. He writes: '[i]ncommensurateness is explained by the *permissibility of different preference orderings* (which correspond to different choices of subintervals within the neutral range)'.[57] This is because *e* and *g* are on a par on Rabinowicz's definition, since in one *K* ordering *e* is preferred to *g* while in another *g* is preferred to *e*. He adds that '[t]here is no need to appeal to heterogeneous values ... to arrive to *bona fide* cases of incommensurate alternatives'.[58] This is his response to the *ad-hocness* objection. Rabinowicz acknowledges the similarities between his position and the first parity view. He writes that: 'there are close similarities between Qizilbash's views and my own on several aspects of the intuition of neutrality. In particular, both of us try to disarm Broome's objections to the incommensurateness interpretation by interpreting the incommensurateness of mere additions as the case of parity. But our accounts of parity differ significantly.'[59] Nonetheless, on this response to the *ad-hocness* objection, parity is not a form of equality: when states of the world are on a par, they are not equi-preferred on Rabinowicz's parity view. Furthermore, Rabinowicz's view does not imply a narrow incommensurate zone.

In response to the vagueness objection, Rabinowicz rejects the collapsing principle by advancing a variant on various 'counter-examples' to this principle which Erik Carlson has discussed.[60] Broome's reply to Rabinowicz on this point focusses on one of Carlson's 'counter-examples'.[61] While the discussion goes beyond the scope of this paper, it is relevant to note that in his further discussion of the collapsing principle (which, amongst other things, responds to Broome's reply) Carlson argues that '[a]nother serious problem with the collapsing principle is that the reasoning behind it rules out second-order vagueness'.[62] This element of his argument is similar to that outlined above in defence of the first parity view.[63] Finally, there is Rabinowicz's response to the greediness objection. The key element of the intuition of neutrality which Broome invokes here is, as Rabinowicz puts it, that 'adding a neutral thing does not have a "value that counts against other values"'. But Rabinowicz insists that 'adding people is (axiologically) neutral simply means that it on its own makes the world neither better nor worse'.[64] Rabinowicz does not attempt to capture the intuition invoked in the greediness objection. This response is, again, similar to the defence of the first parity view discussed above.

Broome's reply notes that on Rabinowicz's view if *x* and *y* are on a par, one might prefer either. On this view, when there is parity either *disposition* to choose is permissible, while on the first parity view – as we saw earlier - either *choice* is permitted. It is unsurprising that Broome objects to this aspect of Rabinowicz's view. He writes that: 'on Rabinowicz's interpretation, [two] worlds [which differ in their population] might be incommensurate in value. If they are, it is permissible to prefer one to the other and also permissible to prefer the other to the one. I find that implausible. We are considering the world's moral value. In matters of taste, opposite preferences are permissible, but it seems implausible for them to be permissible in moral matters'.[65] One can, nonetheless, defend Rabinowicz's position by invoking the intuition in Narveson's discussion. One might suppose that morality *requires* certain preferences or attitudes and that in the case of mere addition there is no such requirement so that any preference is permitted. Rabinowicz might claim that *in this sense* whether or not to have a child is a matter of 'moral indifference' in cases of parity. His position can thus be interpreted so that it is consistent with Narveson's intuition. To this degree, it can respond convincingly to Broome's reply.

5. *Conclusions*

This paper has considered how two versions of the parity view can or might respond to Broome's objections. The first view emerges from a reading of Parfit's discussion of 'rough comparability' in the context of the mere addition paradox. It implies that the zone of incommensurateness or neutral range is a zone or range of parity. It further implies that the zone or range is narrow and has imprecise borderlines. I have argued that this parity view can respond to Broome's *ad-hocness* and greediness objections if the parity view is seen as capturing some, but not all, versions of Broome's neutrality intuition. The first parity view can, however, only allow for a wide neutral range if it is revised, and such revision may strengthen it. In cases of parity, the first parity view is also consistent with Narveson's intuition that having a child is normally a matter or moral indifference. Rabinowicz's parity view allows for a wide neutral range and can also be interpreted in such a way that it is consistent with this intuition. Imprecision of the borderlines of the incommensurate zone opens both versions of the parity view up to Broome's vagueness objection, if one accepts the collapsing principle. Accepting that principle nonetheless leads to the rejection of second-order vagueness. That is a high price to pay for the acceptance of a principle which is neither immediately obvious nor widely accepted. So the vagueness objection lacks force. I conclude that a revised version of the first parity view and Rabinowicz's view can respond robustly to Broome's objections and replies. To this degree, the parity view successfully captures our intuitions in the context of mere addition.

Appendix

In Qizilbash's statement of the parity view it is argued that the logic of asymmetry which underlies Broome's collapsing principle may cause problems for his own position.[66] Broome rejects this claim in responding to Qizilbash.[67] Qizilbash's discussion is nonetheless an attempt to explain Broome's own view. Here I try to make the relevant claim more precisely. Recall that on Broome's view there is a unique, sharply bounded, vague zone. In the better zone it is super-true that ($\mathbf{w}^e$, μ) is better than $\mathbf{w}^e$. In the worse zone it is super-true that $\mathbf{w}^e$ is better than ($\mathbf{w}^e$, μ). One might claim that *close to* (though not at) the edge of the better zone it is *nearly* super-true that ($\mathbf{w}^e$, μ) is better than $\mathbf{w}^e$ and that it is *nearly* super-false that $\mathbf{w}^e$ is better than ($\mathbf{w}^e$, μ) because each of these judgements is, respectively, true or false on nearly all sharpenings of the neutral level. In an earlier article Broome considered a similar claim but in the context of a different version of supervaluationism which allows comparisons in terms of 'more true than'.[68] In this context Broome uses a version of the collapsing principle which runs:

The Collapsing Principle, General Version. For any *x* and *y* if it is more true that *x* is *F*er than *y* than that *y* is *F*er than *x* then *x* is *F*er than *y*.[69]

This principle leads to the result that incommensurateness and vagueness are incompatible if *x* is *F*er than *y* is more true than *y* is *F*er than *x* if the first is true on some but not all sharpenings, while the second is false on all sharpenings. Why might the collapsing principle work against Broome's own view? I here explain Broome's own argument. The way in which his version of the argument translates into claims about mere addition requires that one treats what Broome calls the 'standard' as $\mathbf{w}^e$ while the points he refers to are points in the well-being configuration. Consider the vague zone in figure 5. He writes that: '[a]s we get near the top of the zone, it becomes nearly true that the points we encounter are *F*er than the standard and nearly false that the standard is *F*er than them. I think this is really inconsistent with the collapsing principle. If one statement is nearly true and another nearly false, it is surely undeniable that the first is truer than the second'.[70] To rephrase this in the context of mere addition: the reason that the (general version of the) collapsing principle leads to problems here is that close to the top of the zone, if it is more true that ($\mathbf{w}^e$, μ) is better than $\mathbf{w}^e$ than it is that $\mathbf{w}^e$ is better than ($\mathbf{w}^e$, μ) then by the (general version of the) collapsing principle ($\mathbf{w}^e$, μ) is better than $\mathbf{w}^e$. Since there is no vagueness about it, we have a contradiction. That is the sense in which the collapsing principle can work against Broome's own view. But Broome excludes this possibility by assuming that truth values in the vague zone are incomparable, so that near the top of the zone in figure 5 it is *not* nearly true that ($\mathbf{w}^e$, μ) is better than $\mathbf{w}^e$. This ensures that there is no problem for his view. Nonetheless, this move also implies that there is a sharp transition at the borderlines of the vague zone.

Another way of arriving at the result that there is no second-order vagueness is closer to Broome's original argument. It runs as follows. If a statement is not super-true (super-false), but there is some sharpening of 'admissible' on which it is super-true (super-false) then we can say that it is *nearly* super-true (super-false). We might then accept this variation of the collapsing principle:

*Alternative Collapsing Principle**: If *x* is *F*er than *y* is nearly super-true and *y* is *F*er than *x* is nearly super-false, then *x* is *F*er than *y*.

Now suppose that there is second-order vagueness. There are then levels of μ such that on some but not all sharpenings of 'admissible' ($\mathbf{w}^e$, μ) is better than $\mathbf{w}^e$ is super-true. For some such level of μ consider a sharpening of 'admissible' such that it is true on all admissible sharpenings that ($\mathbf{w}^e$, μ) is better than $\mathbf{w}^e$ so that ($\mathbf{w}^e$, μ) is better than $\mathbf{w}^e$ is nearly super-true. For illustrative purposes, consider a level of μ in the zone of second-order vagueness bordering the better zone. At this level of μ, it is also nearly super-false that $\mathbf{w}^e$ is better than ($\mathbf{w}^e$, μ) since there are sharpenings of 'admissible' according to which it is super-false. Then by the alternative collapsing principle* ($\mathbf{w}^e$, μ) is better than $\mathbf{w}^e$. Since there is no vagueness about this we have a contradiction. So there is no second-order vagueness. The levels of μ considered here must be within the vague zone (i.e. not in the better zone). In Qizilbash's more informal version of the argument the relevant point was taken to be *at* the edge of the vague zone.[71] Broome's riposte is that a point on the edge of the vague zone is not in the vague zone, and that '[t]he collapsing principle implies that the vague zone does not contain its own boundary points; it is *open* in the mathematical sense'.[72] So the relevant point in the vague zone which we need to consider in showing that there is no second-order vagueness is not a boundary point.

Notes

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[1] J. Narveson, 1967, 'Utilitarianism and Future Generations' *Mind* 76: 62-72; and 1973, 'Moral Problems of Population', *Monist* 57: 62-86.

[2] D. Parfit, 1984, *Reasons and Persons.* Oxford: Oxford University Press.

[3] J. Griffin,1977, 'Are there Incommensurable Values?' *Philosophy and Public Affairs* 47: 39-59; and1986, *Well-Being: Its Meaning, Measurement and Moral Importance*, Oxford: Clarendon Press; R. Chang, 2002, *Making Comparisons Count,* Routledge, New York and London; 2002, 'The Possibility of Parity' *Ethics* 112: 659-688; and 2005, 'Parity, Interval Value and Choice' *Ethics* 115: 331-350; J. Broome, 2000. 'Incommensurable Values' in R. Crisp and B. Hooker (eds) *Well-Being and Morality: essays in Honour of James Griffin*, Oxford: Oxford University Press; J. Griffin, 2000. 'Replies' in R. Crisp and B. Hooker (eds) *Well-Being and Morality: essays in Honour of James Griffin*, Oxford: Oxford University Press; M. Qizilbash, 2000, 'Comparability of Values, Rough Equality and Vagueness: Griffin and Broome on Incommensurability' *Utilitas* 12: 223-240; and 2002, 'Rationality, Comparability and Maximization' *Economics and Philosophy* 18: 141-156 ; J. Gert, 'Value and Parity' *Ethics* 114: 492-520; N-H. Hsieh, 2005, 'Equality, Clumpiness and

Incomparability' *Utilitas,* 17: 180-204; and M. Peterson, 2007, 'Parity, Clumpiness and Rational Choice' *Utilitas* 19: 505-513 amongst others.

[4] M. Qizilbash, 2005, 'The Mere Addition Paradox, Parity and Critical-Level Utilitarianism', *Social Choice and Welfare* 24: 413-431; 2007, 'The Mere Addition Paradox, Parity and Vagueness', *Philosophy and Phenomenological Research* LXXV (1): 129-151; and 2007, 'The Parity View and Intuitions of Neutrality' *Economics and Philosophy* 23: 107-114; and W. Rabinowicz, 2009, 'Broome and the Intuition of Neutrality' *Philosophical Issues*19: 389-411.

[5] J. Broome, 2004, *Weighing Lives*, Oxford: Oxford University Press.

[6] J. Broome, 2007, 'Reply to Qizilbash' *Philosophy and Phenomenological Research* LXXV (1): 152-157; 2007 'Replies' *Economics and Philosophy* 23: 115-124; and 2009 'Reply to Rabinowicz' *Philosophical Issues* 19: 412-417.

[7] Parfit, *Reasons and Persons*, 412.

[8] L. Temkin, 1987, 'Intransitivity and the Mere Addition Paradox' *Philosophy and Public Affairs* 16: 138-187.

[9] These properties of 'at least as good as' follow from assuming that it is transitive and reflexive but not necessarily complete - a 'quasi-ordering'. See Qizilbash, 'The Mere Addition Paradox, Parity and Critical-Level Utilitarianism' and A. Sen, 1979, *Collective Choice and Social Welfare,* Amsterdam: North Holland, Chapter 1*.

[10] See, for example, E. Carlson, 1998, 'Mere Addition and Three Trilemmas of Population Ethics' *Economics and Philosophy* 14: 288.

[11] Parfit, *Reasons and Persons* 430-1.

[12] Broome, *Weighing Lives*, 165.

[13] R. Chang, 2002, 'The Possibility of Parity', *Ethics* 112: 662.

[14] See Qizilbash, 'The Mere Addition Paradox, Parity and Critical-Level Utilitarianism', 415; and 'The Mere Addition Paradox, Parity and Vagueness', 134.

[15] One might alternatively define the 'mark' of parity as follows: if *x* is on a par with *y* then some slight improvement (or worsening) in either *x* or *y* may not make it better (worse) than the other, but some improvement (worsening) will. I am grateful to Gustaf Arrhenius for this suggestion. My guess is that the central claims in this paper would not be affected by adopting this alternative definition of the 'mark'.

[16] It can be argued that Parfit's argument does not resolve the paradox. I ignore this issue in this paper.

[17] J. Broome, 2001, 'Greedy Neutrality of Value' in W. Rabinowicz (ed) *Value and Choice Vol. 2. Some Common Themes in Decision Theory and Moral Philosophy*, Lund Philosophy Reports 1: 7-16 and 9 in particular.

[18] Note however, that, given the mark of parity the zone of incommensurateness cannot contain its own boundary points given the mark of parity: otherwise a slight change in value at the upper (lower) boundary point of the zone would not put one in the 'better' ('worse') zone. I thank Wlodek Rabinowicz for pointing this out.

[19] See Qizilbash, 'The Mere Addition Paradox, Parity and Critical-Level Utilitarianism', 422-5; and 'The Mere Addition Paradox, Parity and Vagueness', 136.

[20] Qizilbash, 'The Mere Addition Paradox, Parity and Critical-Level Utilitarianism', 423; and 'The Mere Addition Paradox, Parity and Vagueness', 136-138.

[21] One needs to add that the size of a 'slight' change in μ cannot converge to zero at the edge of the parity zone. I am grateful to Wlodek Rabinowicz for this point.

[22] K. Fine,1975, 'Vagueness, Truth and Logic' *Synthese* 30: 265-300; R. Keefe, 2000, *Theories of Vagueness*. Cambridge: Cambridge University Press; and Qizilbash 'The Mere Addition Paradox, Parity and Critical-Level Utilitarianism', 423-6; and 'The Mere Addition Paradox, Parity and Vagueness',136-140.

[23] See Qizilbash 'The Mere Addition Paradox, Parity and Vagueness' 138-140.

[24] Broome, *Weighing Lives*, 143.

[25] Broome, *Weighing Lives*, 142.

[26] Broome, *Weighing Lives*, 142.

[27] Broome 'Reply to Qizilbash' 153.

[28] Broome, 'Reply to Qizilbash', 154.

[29] Broome, 'Reply to Qizilbash', 154.

[30] Broome, *Weighing Lives*, 169.

[31] Rabinowicz, 'Broome and the Intuition of Neutrality', 392.

[32] Narveson, 'Utilitarianism and Future Generations', 66.

[33] Broome, 'Replies', 121.

[34] Broome, 'Replies', 121.

[35] Parfit, *Reasons and Persons*, 431.

[36] Broome, *Weighing Lives*, 182 and 206-7.

[37] J. Broome, 1999, *Ethics out of Economics*, Cambridge University Press: Cambridge, UK., 230.

[38] Broome, *Weighing Lives*, 148.

[39] Qizilbash, ‘The Parity View and Intuitions of Neutrality’, 113-4.

[40] Broome, ‘Reply to Qizilbash’, 155; and ‘Replies’, 122.

[41] Broome, *Weighing Lives*, 172-4.

[42] Broome, ‘Reply to Qizilbash’, 155.

[43] R. Chang, 2002, *Making Comparisons Count,* Routledge, New York and London, 158-168; E. Carlson, 2004, ‘Broome’s Argument Against Value Incomparability’ *Utilitas* 16: 220-226; C. Constantinescu, 2012, ‘Value Incomparability and Indeterminacy’ *Ethical Theory and Moral Practice* 15: 57-70; and E. Carlson, forthcoming, ‘Vagueness, Incomparability, and the Collapsing Principle’ *Ethical Theory and Moral Practice.*

[44] Chang, *Making Comparisons Count,* 163-4**.**

[45] Broome, *Weighing Lives*, 179.

[46] I implicitly assume a set of ‘acceptable’ sharpenings of ‘admissible’. But, for simplicity, I refer to each of these as a sharpening of ‘admissible’. A further level of vagueness would emerge if ‘acceptable’ were vague.

[47] Broome, ‘Reply to Qizilbash’, 156.

[48] Broome, 'Reply to Qizilbash', 156.

[49] Broome, 'Reply to Qizilbash',156-7.

[50] Keefe, *Theories of Vagueness,* 31.

[51] Keefe, *Theories of Vagueness,*32-3.

[52] Keefe, *Theories of Vagueness,*32-3.

[53] Rabinowicz, 'Broome and the Intuition of Neutrality' 402.

[54] W. Rabinowicz, 2009, 'Incommensurability and Vagueness' *Proceedings of the Aristoteylian Society* LXXXIII: 71-94 and 84 in particular.

[55] Rabinowicz, 'Incommensurability and Vagueness' 83.

[56] Rabinowicz, 'Broome and the Intuition of Neutrality', 405.

[57] Rabinowicz, 'Broome and the Intuition of Neutrality', 405.

[58] Rabinowicz, 'Broome and the Intuition of Neutrality', 405.

[59] Rabinowicz, 'Broome and the Intuition of Neutrality', 411.

[60] Carlson, 'Broome's Argument Against Value Incomparability'; and Rabinowicz, 'Broome and the Intuition of Neutrality' 401.

[61] Broome, 'Reply to Rabinowicz', 417.

[62] Carlson, 'Vagueness, Incomparability, and the Collapsing Principle'.

[63] In particular, in 'Vagueness, Incomparability, and the Collapsing Principle' Carlson adopts a 'second-order collapsing principle' to show that a second-order variant of the collapsing

principle is incompatible with the existence of second-order vagueness. His second-order collapsing principle is a close relative of the ‘alternative collapsing principle’ discussed in section 3.

[64] Rabinowicz, ‘Broome and the Intuition of Neutrality’, 399.

[65] Broome, ‘Reply to Rabinowicz’, 417.

[66] Qizilbash, ‘The Mere Addition Paradox, Parity and Vagueness’, 149-150.

[67] Broome, ‘Reply to Qizilbash’, 156.

[68] J. Broome, 1997, ‘Is Incommensurability Vagueness?’ In: R Chang (ed) *Incommensurability, Incomparability and Practical Reason*, Harvard University Press, Cambridge (Mass).

[69] Broome, ‘Is Incommensurability Vagueness?’ 77.

[70] Broome, ‘Is Incommensurability Vagueness?’ 77.

[71] Qizilbash, ‘The Mere Addition Paradox, Parity and Vagueness’ 149.

[72] Broome, ‘Reply to Qizilbash’,156.