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Narrowly person-affecting axiology: a reconsideration

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Abstract

A narrowly person-affecting (NPA) axiology is an account of the moral ranking of outcomes such that the comparison of any two outcomes depends on the magnitude and weight of individuals' well-being gains and losses between the two. This article systematically explores NPA axiology. It argues that NPA axiology yields an outcome ranking that satisfies three fundamental axioms: Pareto, Anonymity and, plausibly, Pigou-Dalton. The axiology is neutral to non-well-being considerations (desert); and (assuming well-being measurability) leads to the Repugnant Conclusion (RC). In short, NPA axiology provides a grounding for Paretian, equity-regarding welfarism, albeit one that includes the RC.

Keywords: Person-affecting; Pareto; Pigou-Dalton; desert; Repugnant Conclusion

1. Introduction

By a 'narrowly person-affecting (NPA) axiology', I mean an account of the moral ranking of outcomes such that the moral comparison of any two outcomes depends on the magnitude and weight of individuals' well-being gains and losses between the two, with well-being gains counting towards moral betterness and well-being losses against.¹ If well-being comparisons are complete, NPA axiology implies the narrow all-things-considered person-affecting principle, namely: one outcome is not better than a second, all-things-considered, unless better for at least one person. Indeed, if well-being comparisons are complete, NPA axiology implies the narrow

¹Parfit (2017) distinguishes between 'narrow' person-affecting principles framed in terms of what is better or worse for individuals, and 'wide' principles framed in terms of what is good or bad for them. See Masny (2020). I follow Parfit's usage in describing NPA axiology and the attendant person-affecting principles as 'narrow'. This article does not discuss wide person-affecting axiology.

For an excellent discussion of person-affecting principles (albeit using the terms 'wide' and 'narrow' differently than here), see Holtug (2010).

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in-a-respect person-affecting principle, namely: one outcome is not better than a second in any respect unless better for at least one person.²

NPA axiology has fared poorly in the philosophical literature over the last four decades. The dominant view in variable-population cases (meaning that there are individuals who exist in some but not all of the outcomes being compared), and a widespread view even in fixed-population cases (the very same individuals exist in all of the outcomes), has been that either or both of the narrow person-affecting principles – and thus, implicitly, an NPA axiology – are problematic.

Assume (as do most philosophers of population ethics) that existence is neither better nor worse for a person than non-existence.³ If so, the narrow all-things-considered person-affecting principle has wildly counterintuitive implications. Consider, first, a fixed-number case such that the same number of individuals exist in x and y , but there are individuals who exist in x but not y (the ‘ x individuals’); and individuals who exist in y but not x (the ‘ y individuals’). If each individual who exists in both outcomes is equally well off in the two, then the principle implies that the two outcomes are neither better nor worse than each other, regardless of the well-being levels of the x individuals and the y individuals – even if, for example, all of the x individuals have wonderful lives and all of the y individuals terrible ones.⁴

Consider, next, a different-number case such that there are individuals who exist in x but not y ; none exist in y but not x . If each individual who exists in both outcomes is equally well off in the two, then the principle implies that the two outcomes are neither better nor worse than each other – even if the x individuals have wonderful lives or, instead, terrible ones.

Derek Parfit, in his last published work (2017: 118), writes that the narrow all-things-considered principle is ‘deeply mistaken’.⁵ Parfit’s scepticism about this principle seems to be widely shared by population ethicists; few defend it.⁶ Moreover, although the narrow in-a-respect principle is less frequently discussed by population ethicists than the narrow all-things-considered principle, it seems reasonable to suppose that rejecting the latter implies rejecting the former.⁷

²See Appendix.

³The many different scholars adopting this view are cited in Holtug (2010: Ch. 5), Arrhenius and Rabinowicz (2015), Fleurbaey and Voorhoeve (2015) and Nebel (2019). See also Bykvist (2020) and Bader (2022).

⁴See Parfit (1987: Ch. 16).

⁵To be precise, Parfit says this of the ‘Narrow Telic Principle’, ‘[o]ne of two outcomes cannot be worse if this outcome would be worse for no one’ (2017: 118), which I take to be the same as the narrow all-things-considered person-affecting principle. Parfit (2017: 123–24), also interprets *Reasons and Persons* (Parfit 1987) as having rejected the Narrow Telic Principle. See e.g. Parfit (1987: 377–79, 393–96).

⁶If existence is neither better nor worse for a person than non-existence (‘noncomparativism’), then the narrow all-things-considered person-affecting principle implies what Greaves (2017) terms the ‘Neutrality Principle’: adding an extra person to the world, leaving others welfare-unaaffected, is not a moral improvement or worsening. As Greaves notes, the dominant approaches in population ethics, namely totalism, averagingism, variable-value approaches, and critical-level approaches, all reject the Neutrality Principle – implying that those who espouse these approaches, if they accept noncomparativism, must reject the all-things-considered person-affecting principle (see Greaves and Cusbert (2022: 62) for a similar observation). Indeed, this is why the dominant approaches are typically described as ‘impersonal’ rather than ‘person affecting’. See Greaves (2017).

⁷It is a truism that, if one outcome is all-things-considered morally better than a second, then it is better in some respect. I know of no discussion of person-affectingness that rejects this truism. Given this truism, rejecting the all-things-considered principle implies rejecting the in-a-respect principle.

In fixed-population cases, challenges to the person-affecting principles have focused on the in-a-respect principle. Larry Temkin derisively refers to the narrow in-a-respect person-affecting principle as ‘the Slogan’.⁸ He launches a wide-ranging attack on ‘the Slogan’ – arguing, *inter alia*, that egalitarians should reject this principle because a decrease in inequality that occurs by way of ‘levelling down’ is a moral improvement in one respect even though none are better off and some are worse off (Temkin 1993: Ch. 9; 2000, 2003).

To be sure, it is not surprising that egalitarians reject the narrow in-a-respect person-affecting principle. More surprisingly, the principle is not generally embraced even by prioritararians.⁹ Strikingly, Parfit (2000) in the Lindley Lecture – the seminal philosophical defence of prioritarianism – does not embrace it.¹⁰

I believe that the narrow person-affecting principles are not nearly as problematic as the philosophical literature suggests. In this article, I focus not on the principles as such, but rather on the underlying axiology.¹¹ ‘Axiology’, generally, means the study of value, but I use it here in a more specific sense: an ‘axiology’ is an account of *moral* value, specifically of the moral ranking of outcomes. An NPA axiology has a distinctive structure: it posits that this ranking is such that the moral comparison of any two outcomes depends on the magnitude and weight of individuals’ well-being gains and losses between the two (with well-being gains counting towards moral betterness and well-being losses against).

There is no canonical statement of NPA axiology in the literature. Indeed, the focus of philosophical debate has been the principles, not the underlying axiology. My expression of the axiology is meant to capture a way of thinking about the *grounding* of the moral ranking of outcomes, one that would yield the narrow in-a-respect and all-things-considered person-affecting principles.

NPA axiologies can be divided into two subclasses, which I will denote as ‘NPA^{NC}’ and ‘NPA^C’. NPA^{NC} axiologies deny, while NPA^C axiologies affirm, that the well-being of an existing person can be compared to their nonexistence. (The ‘NC’ superscript stands for noncomparability and the ‘C’ superscript for comparability.) NPA^{NC} axiologies are problematic; my focus, instead, will be

⁸To be precise, the Slogan states: one outcome is not better than a second in any respect unless better for at least one person *in any respect* (Temkin 1993: 256; 2000: 136; 2003: 776). The italicized language indicates where the Slogan differs from the in-a-respect person-affecting principle. On the premise that an outcome which is better for a person is better in some respect for that person, it follows that: rejecting the Slogan implies rejecting the in-a-respect principle. In short, Temkin’s arguments are challenges to the in-a-respect principle as well as the Slogan.

⁹Scholarship that defends prioritarianism without endorsing the narrow in-a-respect person-affecting principle or a narrowly person-affecting axiology includes: Arneson (2000, 2007); Parfit (2000, 2012); O’Neill (2012); Porter (2012); Segall (2015). Compare, by way of contrast, Holtug (2010), Adler (2012) and Adler and Holtug (2019).

In a series of publications, Ingmar Persson (2008, 2012, 2017: Ch. 9) has argued that prioritararians will need to reject the narrow in-a-respect person-affecting principle because they are committed to an impersonal value that increases as individuals become worse off. See also Hanisch (2020). See Adler and Holtug (2019) for a response to Persson’s argument.

¹⁰Parfit discusses the Person-Affecting Claim (Parfit 2000: 114), which I take to be equivalent to the in-a-respect person-affecting principle. He then states: ‘The Person-Affecting Claim has, I think, less force than, and cannot be used to strengthen, the Levelling Down Objection.’

¹¹See Appendix for discussion of the connection between NPA axiology and the two principles.

NPA^C axiologies. To be sure, NPA^C axiologies owe us an explanation as to how well-being can be compared to non-existence. Gustaf Arrhenius, Nils Holtug and Wlodek Rabinowicz have offered such an explanation (discussed below in section 5). I find this explanation to be persuasive. The reader may not be persuaded, but even so (I hope) will allow that the explanation is sufficiently plausible that NPA^C axiologies should not be rejected from the get-go.

NPA^C axiologies have a number of attractive features. First, NPA^C axiologies respect the separateness of persons. Second, they immediately lead to the Strong Pareto axiom: that if some are better off in one outcome than a second, and all are at least as well off, then the first outcome is better than the second. Third, NPA^C axiologies need not be utilitarian. Rather, NPA^C axiology is plausibly construed to support not only the Strong Pareto axiom but also the Pigou-Dalton axiom, the latter expressing a moral preference for an equitable distribution of well-being. Finally, in the variable-population context, NPA^C axiology implies a number of intuitively attractive axioms, including No Difference: the ranking of two outcomes in which the very same number of individuals exist does not depend upon whether those who exist in the first outcome are identical to those who exist in the second.

Admittedly, NPA^C axiology also has important downsides. First, NPA^C axiology is best understood to be desert-neutral. The moral weighting of individuals' well-being gains and losses is independent of non-well-being factors ('desert'). Those who believe that desert considerations should figure into the moral ranking will therefore have reason to reject NPA^C axiology. Second, NPA^C axiology implies the Repugnant Conclusion (if well-being is complete and measurable). In recent years, a number of population ethicists have argued that we should accept the Repugnant Conclusion, or least not view it as a fatal flaw for an account of population ethics (Zuber *et al.* 2021). But for those who disagree, implying the Repugnant Conclusion means that NPA^C axiology should be rejected.

In a nutshell: NPA^C axiology is *person-respecting*, *Paretian*, plausibly *equity-regarding*, *desert-neutral*, *No-Difference-affirming* and *repugnant*.¹² In this article, I argue that NPA^C axiology has these features.

My description of NPA axiology (and thus of NPA^C axiology as a species thereof) is, no doubt, somewhat vague. It would be useful to have a more precise model of *how* the moral comparison of outcomes is grounded in individuals' well-being gains and losses.¹³ I'll present this model in section 2, and will also discuss in section 2 how NPA^C axiology respects the separateness of persons. Sections 3 and 4 consider the fixed-population case. In section 3, individuals are identical with respect to whatever desert considerations might be thought relevant to the moral weight of well-being gains and losses. Here, I show that NPA^C axiology plausibly offers a unified basis for both 'efficiency' (the Strong Pareto axiom) and 'equity' (the Pigou-Dalton axiom).

¹²I insert 'plausibly' before 'equity-regarding' because I concede that rejecting the argument from NPA^C axiology to the Pigou-Dalton axiom is also plausible. See section 3.1.

¹³I have analysed the axiomatic implications of this model in prior scholarship. See Adler (2012: Ch. 5; 2018, 2022). This article substantially refines and extends that analysis.

In section 4, individuals are allowed to differ with respect to desert considerations, which affect the moral weighting of gains and losses. I show that this leads to inconsistencies.

Finally, section 5 turns to the variable-population case, discussing the axiomatic pros and cons of NPA^C axiology in this context: in particular, No Difference but also (if well-being is complete and measurable) the Repugnant Conclusion.

The narrow person-affecting principles focus on the well-being of persons. NPA^C axiology, as I will present it, therefore does so as well. (Throughout the article, ‘individual’ is used as a synonym for ‘person’.) Clearly, the well-being of sentient beings that are not persons has moral weight. The outcome ranking produced by NPA^C axiology should not be seen as the all-beings-considered moral ranking, but rather as a partial ranking: a ranking with respect to the interests of persons.

2. NPA^C Axiology: A Model

2.1 The Claims Model

Let $\mathbf{O} = \{x, y, \dots\}$ be any set of outcomes. An axiology provides a moral ranking of \mathbf{O} and an explanation as to *why* this is the ranking. I’ll abbreviate the moral ranking as \succeq^M , and will assume that it is transitive and reflexive (but not necessarily complete).¹⁴

When I speak of one outcome being ‘better’ than another or ‘equally good’ as another, this is always shorthand for ‘morally better’ or ‘morally equally good’: how the two outcomes are ranked by \succeq^M . ‘ $x \succ^M y$ ’ means that x is morally better than y , and ‘ $x \sim^M y$ ’ that the two outcomes are equally morally good.

Let \mathbf{I} be the set of individuals of moral concern (‘the population’) each of whom exists in at least one of the outcomes in \mathbf{O} . Individual well-being is central to any NPA^C axiology. Proponents of such axiologies may well disagree about the nature of well-being – about whether it is reducible to mental states such as pains and pleasures, to preference-satisfaction, to objective goods, etc. – and this article will be agnostic on the issue. I do assume that the account of well-being incorporated in a given NPA^C axiology, whatever its content, makes comparisons of well-being levels and well-being differences. Well-being level and difference comparisons are formalized using the concept of a ‘history’. A ‘history’ is a bundle of properties. More specifically, the history of a given individual in a given outcome is the property bundle comprised of all the well-being-relevant properties that the individual has in that outcome. The symbol ‘ $h_i(x)$ ’ denotes the history of individual i in outcome x .

A given outcome set \mathbf{O} and set of individuals \mathbf{I} yields a set of histories \mathbf{H} . \mathbf{H} includes all and only those histories that arise by pairing each outcome x in \mathbf{O} with each of the

¹⁴In short, \succeq^M is a quasiordering, possibly incomplete. See Appendix. Some philosophers argue that betterness (in particular moral and well-being betterness) is complete, while others defend the possibility of incompleteness. See Dorr *et al.* (2023), reviewing the literature and arguing for completeness. My intention in stipulating that \succeq^M as well as the well-being rankings introduced immediately below (\succeq^L and \succeq^D) are quasiorderings, *possibly* incomplete, is to avoid taking a position in this debate. This stipulation allows for, but does not require, incompleteness. In the course of the article’s analysis, I at some junctures introduce provisos meant to handle incompleteness. My aim in doing so is to ensure that my conclusions are robust to whether \succeq^M , \succeq^L , and \succeq^D are complete or incomplete – not to endorse either completeness or incompleteness.

individuals who exists in x .¹⁵ Well-being level comparisons are expressed as a ranking of \mathbf{H} (this ranking denoted as \succsim^L); well-being difference comparisons are expressed as a ranking of $\mathbf{H} \times \mathbf{H}$, the set of pairs of histories (this ranking denoted as \succsim^D).

I assume that the rankings of \mathbf{H} and $\mathbf{H} \times \mathbf{H}$ conform to a variety of structural axioms capturing truisms about well-being level and difference comparisons.¹⁶ These axioms do *not* include a stipulation that well-being level and difference comparisons are complete or measurable.¹⁷ None of the arguments presented in this article regarding the implications of an NPA^C axiology require an assumption of well-being completeness or measurability – the one exception being the argument in section 5 to the Repugnant Conclusion. The incomparability of some histories with respect to well-being precludes completeness and, hence, measurability too; even with completeness, the lexical priority of certain sources of well-being over others can preclude measurability. The analysis here (again, leaving aside the Repugnant-Conclusion portion of section 5) allows for both incomparability and lexicality with respect to well-being.

Even without completeness or measurability, it is meaningful to refer to a particular well-being level (level W^*) or difference (difference ΔW^*). A well-being level is an equivalence class with respect to the ranking of histories, and a well-being difference is an equivalence class with respect to the ranking of history pairs.¹⁸ I will use symbols such as ' W^* ' or ' ΔW^* ' to denote levels and differences, respectively. ' $W \succ^L W^*$ ' means that W is a higher well-being level than W^* , and ' $W \sim^L W^*$ ' that the two well-being levels are the same. Similarly, ' $\Delta W \succ^D \Delta W^*$ ' means that ΔW is a larger well-being difference than ΔW^* , and ' $\Delta W \sim^D \Delta W^*$ ' that the two well-being differences are the same.

For most of the article, in referring to a given well-being difference ΔW , I assume that ΔW is a *positive* well-being difference: a difference between some well-being level W^{++} and a lower level W^+ .¹⁹ If ΔW is not positive, I will say so explicitly.

The well-being at issue here is *lifetime* well-being. One can imagine a narrowly person-affecting axiology grounded, instead, in time-slice well-being or dimensional well-being. However, such an approach is, I believe, significantly less plausible than making lifetime well-being the currency of moral assessment. By NPA^C axiology, I mean an axiology such that the moral ranking of outcomes is grounded in gains and losses to persons with respect to *lifetime* well-being. For the remainder of the article, 'well-being' and cognate terms always have the implicit qualifier 'lifetime'.

As I've already stated, an NPA^C axiology is such that the moral comparison of any two outcomes depends upon the magnitude and weight of individuals' well-being gains and losses between the two (with well-being gains counting towards

¹⁵That, is $\mathbf{H} = \{h \text{ such that: } x \in \mathbf{O}, i \text{ exists in } x, \text{ and } h = h_i(x)\}$.

¹⁶See Appendix.

¹⁷Well-being level and difference comparisons are 'complete' if the quasiorderings that express such comparisons – \succsim^L and \succsim^D , respectively – are both complete. Well-being level and difference comparisons are 'measurable' if these quasiorderings are representable by a single real-valued well-being measure. Measurability implies completeness, but not vice versa. See Appendix.

¹⁸See Appendix.

¹⁹Let Δ^N denote the well-being difference between any history and itself. Then to say that ΔW is 'positive' means: $\Delta W \succ^D \Delta^N$. For every W^{++} , W^+ such that $W^{++} \succ^L W^+$, the difference between W^{++} and W^+ is positive. See Appendix.

moral betterness and well-being losses against). I will precisify this idea via a specific model of how individual well-being gains and losses give rise to the moral comparison: the claims-across-outcomes model. In the remainder of this section, I present the claims-across-outcomes model (for short, ‘claims’ model) for the fixed-population case. Section 5 generalizes the model to the variable-population case.

In the fixed-population case, the population I is a finite set of individuals each of whom exists in all of the outcomes in O . N is the number of such individuals. A claim-across-outcomes (‘claim’) is a relation between a given individual i and a given pair of outcomes x, y , with four possible valences: i has a claim to x over y , a claim to y over x , a null claim, or an incomparable claim. The valence of i ’s claim is determined by their well-being: i has a claim to x over y iff²⁰ they are better off in x than y ; a claim to y over x iff they are better off in y than x ; a null claim iff they are equally well off in the two outcomes; and an incomparable claim if their well-being levels in x and y are incomparable. Non-null claims also have a *strength*.

I use the shorthand ‘welfare-unaaffected’ as follows: an individual is ‘welfare-unaaffected’ as between two outcomes iff they are equally well off in the two, and is ‘welfare-affected’ if not welfare-unaaffected.

The grounding of moral betterness in individual well-being gains and losses is expressed, in the claims framework, via the following rules:

Supervenience. If the pattern of claims (in terms of valence and strength) between x and y is the same as between x^* and y^* , x is at least as good as y iff x^* is at least as good as y^* .

Claims as Pro Tanto Moral Considerations. If there is a claim to x over y , then x is better than y unless there is a claim to y over x or an incomparable claim.²¹

Two Person Conflicts. If one person has a claim to x over y , and a second person has a claim to y over x , with everyone else welfare-unaaffected, then: x is better than y if the first person’s claim is stronger; y is better than x if the second person’s claim is stronger; the two outcomes are equally good if the two claims are of equal strength; and the two outcomes are incomparable iff the two claims are of incomparable strength.

Equal Balance. If two persons have incomparable claims between outcomes x and y , with everyone else welfare-unaaffected, then: if the first person’s well-being level in x is the same as the second’s in y , and vice versa, the two outcomes are equally good.²²

²⁰Iff means if and only if.

²¹Why not adopt an alternative formulation of Claims as Pro Tanto Moral Considerations so that it reads: ‘If there is a claim to x over y , then x is better than y unless there is a claim to y over x ?’ That alternative formulation can lead to an intransitive outcome ranking. To see how, imagine that W^* , W^{**} , and W^+ are three well-being levels, with W^{**} a higher well-being level than W^* and W^+ incomparable with each. The well-being levels of three individuals, Ava, Bo, and Carlos, are as follows. Outcome x : Ava at W^* , Bo at W^+ , Carlos at W^{**} . Outcome y : Ava at W^{**} , Bo at W^* , Carlos at W^+ . Outcome z : Ava at W^+ , Bo at W^{**} , Carlos at W^* . Then, under the alternative formulation, y is better than x , z is better than y , and x is better than z . Thanks to two anonymous referees for this argument against the alternative formulation.

²²The Equal Balance rule comes into play only if well-being level comparisons are incomplete. (With complete such comparisons, of course, individuals will never be incomparably well off as between two

These rules use the strength of non-null claims to help determine the outcome ranking (claim strength is invoked by both Supervenience and Two Person Conflicts), but don't themselves explain how the strength of a non-null claim is assigned. An account of the assignment of claim strength will be developed as the article proceeds.

Additional rules might be added to the claims framework, but no more are needed for my purposes. What is remarkable is that these rules alone, combined with a plausible view about the assignment of claim strength, suffice to show that an NPA^C axiology's moral ranking satisfies both the Pareto and Pigou-Dalton axioms; is insensitive to desert considerations; and (with the rules generalized to the variable-population case) satisfies No Difference but yields the Repugnant Conclusion (with none of these implications, except the last, conditional on well-being completeness and measurability).²³

NPA^C axiologies respect the separateness-of-persons in two senses.²⁴ (1) The well-being gains and losses of each person are a distinct determinant of the moral ranking of outcomes. If April is one person and Barry a different person, then April's well-being is one factor that determines how outcomes morally compare, while Barry's well-being is a second, separate factor. In the claims model, this is captured by making each person a separate holder of claims. With N persons in the population, there are N claims between each pair of outcomes.

(2) How changes in well-being along multiple temporal or substantive dimensions figure into the moral ranking depends upon whether these are changes to the same person or to different persons. For example, imagine that x and y differ with respect to someone's well-being both at time t and at time t^* . Denote the first difference as ΔW and the second as ΔW^* .²⁵ Then how these well-being changes figure into the moral comparison of x and y depends on whether these are changes at different times to the same person, or rather changes to different persons. The same is true if there are multiple substantive dimensions of well-being (e.g. multiple well-being goods), and ΔW is a change to one dimension while ΔW^* is a change to a second.

NPA^C axiologies respect the separateness of persons in the second sense because it is each person's *lifetime* well-being that is registered as a distinct determinant of the moral ranking of outcomes. In the claims model, this is captured by making the valence and strength of each person's claim depend upon their lifetime well-being. Assume that ΔW and ΔW^* are both changes to the well-being of one person, April.

outcomes.) It is needed, in that case, to argue for Anonymity. See section 3.1.

If the incomparability of well-being levels arises as the intersection of a set of admissible complete rankings of histories (see Appendix), Equal Balance seems very plausible. If the incomparability of well-being levels arises in a different way, the case for Equal Balance is less clear. More research is needed on this topic and on the implications of dropping Equal Balance.

²³See sections 3–5.

²⁴See Adler (2012: Ch. 5), defending the claims-across-outcomes framework in light of the separateness of persons – here drawing on the work of Thomas Nagel (1979, 1991).

²⁵In this paragraph and the next, ΔW and ΔW^* denote changes to well-being at a time or along one dimension of well-being (and may be positive or negative differences). In the remainder of the article, ΔW and ΔW^* are changes to lifetime well-being and, unless otherwise noted, are positive differences.

Then the two changes are inputs into the x/y ranking via the very same channel, namely April's claim. They trade off against each other as ingredients in April's lifetime well-being, which in turn determines the valence and strength of that single claim. (For example, imagine that April is better off as a young adult in x than y , but worse off in middle age. Or, she is happier in x than y , but accomplishes less. Then whether April has a claim to x over y , to y over x , a null claim, or an incomparable claim depends on the net effect of these two temporal or substantive changes on April's lifetime well-being.) By contrast, if ΔW is a change to the well-being of one person, April, and ΔW^* to the well-being of a second, Barry, the two changes are inputs into the x/y ranking via two channels. The first change is reflected in April's claim, the second in Barry's. The changes trade off not as ingredients in the lifetime well-being of one person, but in a different way: at the level of claims. (For example, if April is happier in x than y , while Barry accomplishes less, with no other differences between the outcomes, then whether x is better than y depends on whether April's claim to x in light of her greater happiness in x is stronger than Barry's claim to y in light of his greater accomplishment there.)

2.2 Should NPA^C Axiology be Defined More Restrictively?

NPA^C axiology, as I have defined it, is such that the moral comparison of two outcomes depends upon the magnitude and weight of individuals' well-being gains and losses between the two, with well-being gains counting towards moral betterness and well-being losses against.

A more restrictive definition would stipulate that the comparison depends only upon the *magnitude* of individuals' well-being gains and losses. Losses and gains figure into the comparison *only* via the size of these losses and gains, with no upweighting or downweighting of these magnitudes by other considerations. As precisified by the claims framework, NPA^C axiology defined in this restrictive way would mean that the strength of an individual's non-null claim between two outcomes depends upon their well-being difference between the two – and not, in addition, their well-being level or desert.

I see no reason to define NPA^C axiology so restrictively. Note, first, that the restrictive and less restrictive versions are both linked to the narrow in-a-respect and all-things-considered person-affecting principles. Both versions imply these principles if well-being is complete.²⁶

Second, insisting on the restrictive definition of NPA^C axiology just begs the question whether a moral concern for equity (the Pigou-Dalton axiom) or desert can flow from a narrowly person-affecting account of how the outcome ranking should be justified. Rather than rule out such concerns from the get-go (as does the restrictive definition), we should adopt a wider definition of NPA^C axiology, which makes the moral role of equity and desert a matter for substantive argument. The role of well-being levels and desert as determinants of claim strength should be open for discussion, rather than definitionally precluded.

²⁶The derivation of those principles from NPA^C axiology with well-being complete (see Appendix) is independent of how claim strength is determined.

3. The Fixed-Population Case: Undifferentiated Desert

By ‘desert’, for purposes of an NPA^C axiology, I mean the properties of any individual that help to determine the moral weight of that individual’s well-being gain or loss between two outcomes, and that do so independently of helping to determine that individual’s well-being level (or anyone else’s well-being level) in those outcomes. Consider an individual, Cecelia, and the outcomes x and y . Any NPA^C axiology will take account of how x compares to y in light of Cecelia’s well-being. Cecelia will have various attributes that fix her well-being levels in x and y and the magnitude of her well-being difference between the two. (Which attributes these are depends on the theory of well-being.) Cecelia’s ‘desert’, for purposes of an NPA^C axiology, is something about her that helps determine how much moral weight to give to her well-being difference between x and y , *and* that does so independently of helping to fix her well-being levels (or anyone else’s well-being levels) in those outcomes.

Precisifying this idea via the claims model: in that model, an individual’s desert is something that helps to fix the strength of that individual’s claim between two outcomes, and does so other than by helping to fix their or anyone else’s well-being levels in the two. In a nutshell: *‘desert’ is a non-well-being feature of individuals that helps to determine the strength of claims.* Plausible candidates for ‘desert’, in this sense, are an individual’s degree of prudence or their moral deservingness. However, my analysis of desert will be generic; the analysis will hold good for *any* individual property that an NPA^C axiology might see as helping to determine the strength of claims independently of well-being.²⁷

This section considers the simplest case: a fixed population and undifferentiated desert. This covers two subcases: (a) The NPA^C axiology is such that it doesn’t include a desert component. (b) The NPA^C axiology *does* include a desert component, but the outcome set \mathbf{O} is such that desert does not vary either intrapersonally or interpersonally in \mathbf{O} . Each person has a constant desert level, the same in all outcomes; and this desert level is the same for all persons. (Section 4 will consider what happens if desert does vary intrapersonally or interpersonally.)

In the case of a fixed population and undifferentiated desert, NPA^C axiology yields a moral ranking that is *Paretian*, plausibly *equity-regarding*, and *anonymous*. That is: \succeq^M satisfies the Pareto axiom; plausibly the Pigou-Dalton axiom (equity); and the Anonymity axiom. In what follows, I first use the claims model to argue that

²⁷‘Desert’ understood as a non-well-being feature of individuals that helps to determine the strength of claims is defined very broadly, so that it includes but is not limited to the individual properties that desert theorists typically categorize as constituting desert. Consider, for example, a human-centered NPA^C axiology which counts the claims of human persons as stronger than those of non-human persons, *ceteris paribus*. On such a view, species membership is a non-well-being feature of individuals that helps to determine the strength of claims, thus a kind of ‘desert’ by my definition – but desert theorists wouldn’t consider species membership to be a kind of desert.

I adopt this broad definition because it allows me to show that *anything* posited by desert theorists to be constitutive of desert is not plausibly relevant to the strength of claims, without taking a position (sure to be contentious) about the nature of desert. The argument presented in section 4.2 – (1) demonstrating that the claims framework with differentiated ‘desert’ (broadly defined) will lead to inconsistencies if ‘desert’ is intrapersonally variable, and (2) arguing that any morally plausible determinant of claim strength will be intrapersonally variable – covers *all* properties within this broad category, including the various kinds of properties discussed by desert theorists.

\succsim^M has these axiomatic properties. I then situate \succsim^M relative to utilitarianism and prioritarianism. The family of Paretian, equity-regarding, and anonymous moral rankings *excludes* utilitarianism; it includes, but is hardly limited to, prioritarianism.

3.1 Axioms: Pareto, Pigou-Dalton, Anonymity

With a fixed population and undifferentiated desert, NPA^C axiology supports three distinct axioms regarding the moral ranking (or so I'll argue here): Pareto (meaning the combination of Pareto Indifference and Strong Pareto); Anonymity; and, plausibly, Pigou-Dalton.

Pareto. (1) *Pareto Indifference.* If everyone is welfare-unaffected as between y and x , then y is equally good as x . (2) *Strong Pareto.* If at least one person is better off in y than x , and everyone is at least as well off in y as in x , then: y is better than x .

Anonymity. If the well-being levels in y are a permutation of the well-being levels in x , the two outcomes are equally good.

Pigou-Dalton. Let x and y be such that: (a) individual i is better off than individual j in x ; (b) relative to outcome x , individual i 's well-being in y decreases by ΔW , while individual j 's increases by the same amount; (c) individual i in y is better off than individual j in x ; and (d) everyone else is welfare-unaffected as between x and y . Then y is better than x .

Of course, none of these axioms follows from the minimal formal supposition that \succsim^M is transitive and reflexive. Further, the axioms are logically independent: none implies the other, and indeed no two imply the third. What NPA^C axiology does is to provide a common justificatory framework that argues for the first two and, plausibly, for the third as well.

I'll show this using the claims model. *Pareto: Pareto Indifference.* Note that any outcome z is equally good as itself. Further, in the z/z comparison, all individuals have null claims. Consider now any two outcomes x, y , that meet the antecedent condition of Pareto Indifference: each person is equally well off in x as in y . Thus each person has a null claim between x and y . Note now that the pattern of claims between x and y is the same as between z and itself (all null in both cases). By Supervenience, because z is equally good as itself, it follows that x is equally good as y .

Pareto: Strong Pareto. If outcomes y and x meet the antecedent condition of Strong Pareto, every person in the population falls into one of two groups. One group (with at least one member) are individuals who are better off in y than x . A second group (perhaps empty) are individuals who are welfare-unaffected as between the two outcomes. Individuals in the first group have claims to y over x ; individuals in the second group have null claims. By Claims as Pro Tanto Moral Considerations, y is better than x .

Anonymity. Let's say that any two outcomes z and zz are a 'two person well-being swap' if there is some individual i who is at well-being level W in z and well-being level W^* in zz ; a second individual j who is at well-being level W^* in z and W in zz ;

Table 1. A Two-Person Well-Being Swap

	Outcome z	Outcome zz
Ike	W	W^*
Jake	W^*	W
Other individuals are welfare-unaffected as between z and zz		

Note: Outcomes z and zz are a two-person well-being swap. If $W^* \succ^L W$, then Ike has a claim to zz over z , and Jake an equally strong claim to z over zz . Alternatively, if $W \succ^L W^*$, then Jake has a claim to zz over z , and Ike an equally strong claim to z over zz .

and everyone else is welfare-unaffected. Given undifferentiated desert, the claims model argues that z and zz are equally good.

Why? (1) If $W \sim^L W^*$, then z and zz are equally good by Pareto Indifference.

(2) Assume instead that $W^* \succ^L W$. If so, i has a claim to zz over z , and j has a claim to z over zz , with everyone else welfare-unaffected. The Two Person Conflicts rule comes into play. In general, when an individual is better off in a second outcome than a first, and therefore has a claim to the second outcome over the first, there are three factors that might determine the strength of their claim: their starting point well-being level, their well-being difference, and their desert. With undifferentiated desert, the last factor drops away. It follows that the two individuals, i and j , have equally strong claims. Each starts at the same well-being level (W) and moves up by the same amount (the well-being difference between W^* and W). See Table 1.

Thus i has a claim to zz over z , while j has a conflicting, equally strong, claim to z over zz ; and everyone else has null claims. By Two Person Conflicts, z is equally good as zz .²⁸

If, alternatively, $W \succ^L W^*$, it will be j with a claim to zz over z , and i a claim to z over zz ; but the very same reasoning will show that the two claims are of equal strength, and thus z is equally good as zz .

²⁸The preceding analysis ignores a potential fourth factor relevant to claim strength: namely how the individual’s well-being level both in the outcome where they are worse off and in the outcome where they are better off compares to the well-being levels of everyone else in the population in each outcome. I am skeptical that this fourth factor (for short, the ‘relational’ factor) should figure into the strength of claims. See Adler (2012: 351-56). In any event, including this fourth factor doesn’t undercut the argument that a pair of outcomes which are a two-person well-being swap are equally good.

In Table 1, assume that the $(N - 2)$ individuals other than Ike and Jake, the welfare-unaffected, are at well-being levels $W_1, \dots, W_{(N-2)}$. Assume that $W^* \succ^L W$ (a parallel analysis covers the case of $W \succ^L W^*$). Consider Ike’s claim to zz over z . In the outcome (z) in which Ike is worse off, at level W , the persons in the population other than Ike are at well-being levels W^* (Jake) and $W_1, \dots, W_{(N-2)}$ (the welfare-unaffected). In the outcome (zz) in which Ike is better off, at level W^* , the persons in the population other than Ike are at well-being levels W (Jake) and $W_1, \dots, W_{(N-2)}$. Consider, now, Jake’s claim to z over zz . In the outcome (zz) in which Jake is worse off, at level W , the persons in the population other than Jake are at well-being levels W^* (Ike) and $W_1, \dots, W_{(N-2)}$. In the outcome (z) in which Jake is better off, at level W^* , the persons in the population other than Jake are at well-being levels W (Ike) and $W_1, \dots, W_{(N-2)}$.

In short, the relational factor, whatever its relevance to claim strength, has the very same impact on the strength of Ike’s claim as on the strength of Jake’s.

(4) The final possibility is that W^* and W are incomparable. Then, by the Equal Balance rule, x and y are equally good.

(5) Assume that y and x meet the antecedent condition for Anonymity, namely: the well-being levels in y are a permutation of those in x . Note that every permutation of an ordered list of N well-being levels (N finite) can be expressed as a finite sequence of two-person well-being swaps (Hall 1959: 60). Thus, there exists a finite sequence of outcomes x^1, \dots, x^M , such that x^1 and x are a two-person well-being swap; each outcome and the one that succeeds it in the sequence are a two-person well-being swap; and y and x^M are a two-person well-being swap.²⁹ Therefore x^1 is equally good as x ; x^2 is equally good as x^1 ; \dots ; y is equally good as x^M . By the transitivity of \succeq^M , y is equally good as x .

Pigou-Dalton. If the antecedent conditions for the Pigou-Dalton axiom are met, individual i has a claim to x over y , while j has a claim to y over x , and everyone else has null claims. So the Two Person Conflicts rule applies. What are the well-being levels and differences at issue in the conflicting claims of i and j ? Let W^{**} and W' denote the well-being levels of i and j , respectively, in x . Let W^* denote the well-being level of i in y , and W'' the well-being level of j in y . ΔW is the well-being difference between W^{**} and W^* , and also the well-being difference between W'' and W' . One of the antecedent conditions for Pigou-Dalton is that i in y is better off than j in x ; this means that $W^* \succ^L W'$.

In short: i 's claim is a claim to move up from well-being level W^* by difference ΔW , while j 's claim is a claim to move up from well-being level W' by the same difference (ΔW), with $W^* \succ^L W'$. See Table 2.

By Two Person Conflicts, y is better than x iff j 's claim is stronger than i 's. As above in the discussion of Anonymity, we observe: With undifferentiated desert, the strength of a claim is some function of the starting-point well-being level and the well-being difference.

In order to determine the comparative strength of the two claims in the Pigou-Dalton case, we *don't* need a full account of how well-being levels and differences interact to determine claim strength. All we need is a *ceteris paribus* account, explaining how two claims compare in strength when two individuals start at different well-being levels, one level higher than the other, and the differences are the same. There are four possibilities, here: (a) the claims are equally strong; (b) the individual who starts at the higher well-being level has the stronger claim; (c) the individual who starts at the lower well-being level has the stronger claim; or (d) the claims are incomparable in strength.

Of these four possibilities, I find (c) to be the most plausible. It is supported by two intuitions – call these the ‘Weak-Priority-of-the-Worse-Off Intuition’ and the ‘Structural Intuition’. (I have these intuitions and the reader may as well.) The Weak-Priority-of-the-Worse-Off Intuition is this: if we have to choose which of two equally deserving individuals to receive a benefit, and the two individuals stand to benefit by the same amount in well-being terms, the worse-off individual should receive the benefit. The Structural Intuition is this. Comparisons of levels

²⁹The argument here assumes that the outcome set O is sufficiently ‘rich’ that: for any outcome x in O , with x corresponding to an ordered list L of N well-being levels, and any ordered list L^* identical to L except for a two-person swap of the well-being levels in L , there is an outcome x^* corresponding to L^* .

Table 2. The Pigou-Dalton Axiom

	Outcome <i>x</i>	Outcome <i>y</i>
Irene	W^{**}	W^*
Jade	W'	W''
Other individuals are welfare-unaffected as between <i>x</i> and <i>y</i>		

Note: Outcomes *x* and *y* meet the antecedent conditions for the Pigou-Dalton axiom. Thus $W^{**} >^L W'$; $W^{**} >^L W^*$; $W'' >^L W'$; the difference between W^{**} and W^* (ΔW) is equal to the difference between W'' and W' ; and $W^* >^L W'$.

are at least as fundamental to the structure of well-being as comparisons of differences.³⁰ It therefore seems arbitrary to make claim strength *wholly* a function of well-being differences, and to deny well-being levels any role – even the minimal, tie-breaker role of determining who has the stronger claim when differences are equal.

The proponent of account (a) might try to appeal to the following intuition (call it the Bigger-Benefit Intuition): if we have to choose which of two equally deserving individuals to receive a benefit, and the first stands to benefit by more in well-being terms than the second, the first individual should receive the benefit.³¹ I don't have the Bigger-Benefit Intuition. In any event, this intuition does not support account (a). What the Bigger-Benefit Intuition does support is a *different* proposition about claim strength, namely this: in a two-person conflict in which the well-being differences are unequal, the individual who stands to gain more has a stronger claim, regardless of the two individuals' well-being levels.³² Account (a) says that, *even* in the Pigou-Dalton case, in which the well-being differences are the *same*, the two individuals' well-being levels are irrelevant to the strength of their claims.

Perhaps account (a) can be supported in a different way. I do not go so far as to assert that account (a) is implausible.³³ What I do assert is that account (c) is also quite plausible, in light of the Weak-Priority-of-the-Worse-Off Intuition and the Structural Intuition.³⁴

³⁰For example, there is nothing odd in allowing for comparisons of well-being levels but rejecting comparisons of well-being differences. This is the traditional 'ordinalist' position in economics; see Abdellaoui *et al.* (2007: 358–61). By contrast, it would be quite odd to allow for comparisons of well-being differences but reject comparisons of well-being levels. I am not aware of any scholarship that endorses such a view.

³¹See Harsanyi (1975: 319). Thanks to an anonymous referee for this citation.

³²Note that the Weak Utilitarian outcome ranking (see section 3.2) both is consistent with the Bigger Benefit Intuition and satisfies Pigou-Dalton.

³³The strongest argument for account (a), I believe, points to the way in which the ranking of choices under conditions of uncertainty, and in light of a Pigou-Dalton-respecting outcome ranking, runs afoul of the *ex ante* Pareto axiom. I believe that the proponent of the Pigou-Dalton axiom can address this line of objection by denying the moral force of the *ex ante* Pareto axiom. See Adler (2012: Ch. 7; 2019: Ch. 4). Thus the objection does not, in my view, cancel the plausibility of account (c); but it does make account (a) plausible. Space constraints preclude a discussion of uncertainty here; the reader is referred to the cited works.

³⁴Introducing the fourth 'relational' factor as an additional determinant of claim strength (see note 28) does not weaken the argument for Pigou-Dalton. In Table 2, assume that the ($N - 2$) individuals other than Irene and Jade, the welfare-unaffected, are at well-being levels $W_1, \dots, W_{(N-2)}$. Irene has a claim to *x* over *y*. In the outcome where she is worse off (*y*), Irene is at level W^* and the others in the population are at level

Account (b) is implausible. It is consistent with the Structural Intuition, but flies in the face of the Weak-Priority-of-the-Worse-Off Intuition and gains no support from the Bigger-Benefit Intuition. Account (b) yields a reverse Pigou-Dalton axiom³⁵ that is nowhere defended in the contemporary philosophical literature. Finally, account (d) is also hard to justify: since the two individuals' starting point well-being levels are comparable, and the differences are comparable (indeed, the same), how does incomparability in the strength of the two claims arise?

If account (c) is adopted, j 's claim to y over x (a claim to move up by difference ΔW from starting-point well-being level W') is stronger than i 's claim to x over y (a claim to move up by difference ΔW from starting-point well-being level W^* , with $W^* \succ^L W'$). Hence, by Two Person Conflicts, y is better than x .

If account (a) is adopted rather than account (c) – that is, the proposition that well-being differences are the sole determinant of claim strength with undifferentiated desert is endorsed – the upshot is to reject the Pigou-Dalton axiom and instead endorse the 'Difference Comparison' axiom in the case of undifferentiated desert.

Difference Comparison. Let x and y be such that: individual i is better off in outcome y than outcome x , while individual j is better off in outcome x than y , and everyone else is welfare-unaffected. The difference between i 's well-being in y and x is ΔW , while the difference between j 's well-being in x and y is ΔW^* . Then y is better than x if $\Delta W \succ^D \Delta W^*$; x is better than y if $\Delta W^* \succ^D \Delta W$; and the two outcomes are equally good if $\Delta W \sim^D \Delta W^*$.

W'' (Jade) and $W_1, \dots, W_{(N-2)}$ (the welfare-unaffected). In the outcome where she is better off (x), Irene is at level W^{**} and the others in the population are at level W' and $W_1, \dots, W_{(N-2)}$.

Jade has a claim to y over x . In the outcome where she is worse off (x), Jade is at level W' and everyone else in the population is level W^{**} (Irene) and $W_1, \dots, W_{(N-2)}$. In the outcome where she is better off (y), Jade is at level W'' and the others in the population are at level W^* and $W_1, \dots, W_{(N-2)}$.

Thus, both in the outcomes where they are worse off, and in the outcomes where they are better off, Jade is relatively worse off as compared to the welfare-unaffected than Irene (because $W^* \succ^L W'$ and $W^{**} \succ^L W''$). Further, consider the difference between (a) Irene's well-being in the outcome in which she is worse off and that of the other welfare-affected person (Jade) in that outcome, i.e. the difference between W^* and W'' ; (b) Irene's well-being in the outcome in which she is worse off and that of the other welfare-affected person in the outcome in which Irene is better off, i.e. the difference between W^* and W' ; (c) Irene's well-being in the outcome in which she is better off and that of the other welfare-affected person in the outcome in which Irene is worse off, i.e. the difference between W^{**} and W'' ; and (d) Irene's well-being in the outcome in which she is better off and that of the other welfare-affected person in that outcome, i.e. the difference between W^{**} and W' . Each of these differences (positive or negative) is greater than the corresponding differences for Jade, namely (a) the difference between W' and W^{**} ; (b) the difference between W' and W^* ; (c) the difference between W'' and W^{**} ; and (d) the difference between W'' and W^* .

Thus, assuming that the relational factor increases in strength as individuals become relatively worse off relative to the rest of the population, this factor cuts in favour of Jade.

³⁵The reverse Pigou-Dalton axiom says that: if one individual is at least as well off as a second in outcome x , and in outcome y the first person's well-being has increased by ΔW , and the second's has decreased by ΔW , with everyone else welfare-unaffected, then y is better than x .

3.2 Eligible Rankings

The previous section argued that an NPA^C axiology endorses the Pareto and Anonymity axioms and plausibly the Pigou-Dalton axiom as well. Consider the universe of transitive, reflexive, moral rankings of a given outcome set O , with a fixed population I . Which satisfy this combination of axioms?

The class of Paretian, Anonymous, and Pigou-Dalton-respecting rankings is an *inclusive* class. It includes not only *prioritarianism* but also a number of other well-known rankings, listed immediately below. In describing these various rankings, I assume well-being completeness and measurability; this will make the statement of the ranking rule much easier.³⁶

Prioritarianism: Ranks outcomes by summing well-being numbers plugged into a strictly increasing, strictly concave transformation function. Satisfies Continuity and Separability axioms along with Pareto, Anonymity, and Pigou-Dalton.

Leximin. Compares two outcomes by comparing the well-being levels of the worst-off individuals; if those are equal, the second-worst-off; etc. Satisfies Pareto and Anonymity. Satisfies not only Pigou-Dalton but a much stronger equity axiom, ‘Hammond Equity’. Satisfies Separability but not Continuity.

Prioritarianism with a Lexical Threshold. Accords absolute priority to those below a stipulated well-being threshold, over those above. Ranks outcomes in which all welfare-affected individuals remain below the threshold via the prioritarian formula, and similarly for outcomes in which all welfare-affected individuals remain above. Satisfies Pareto, Anonymity, and Pigou-Dalton – and indeed Hammond Equity for tradeoffs between those below the threshold and those above. Satisfies Separability but not Continuity.

Relative Prioritarianism. These rankings satisfy Pareto, Anonymity and Pigou-Dalton, and also Continuity but not Separability. A paradigmatic such ranking is the ‘rank weighted’ (‘generalized Gini’) ranking, which sums well-being numbers multiplied by weights that are a decreasing function of well-being level.

Weak Utilitarianism. Weak utilitarianism uses a two-step approach. (1) If one outcome has a greater sum total of well-being than a second, the first outcome is better. (2) If two outcomes have the same sum total of well-being, then they are compared using some outcome-ranking rule that satisfies Anonymity and Pigou-Dalton. This ranking satisfies Pareto, Anonymity and Pigou-Dalton; may (but need not) satisfy Separability; and violates Continuity.

³⁶These rankings (except for weak utilitarianism) are discussed in detail in Adler (2019), as are the axioms of Separability and Continuity. Prioritarianism is there referred to as ‘continuous prioritarianism’. On the rank-weighted ranking as an expression of ‘relative prioritarianism’, see Buchak (2023). On Hammond Equity, see Weymark (2016: 151).

By contrast, the class of Paretian, Anonymous, and Pigou-Dalton-respecting rankings excludes those that violate Pareto (such as *Strong Egalitarianism*); those that violate Anonymity (such as *Weighted Utilitarianism*); and those that satisfy Pareto and Anonymity but violate Pigou-Dalton (such as *Utilitarianism* or *Sufficientism*).³⁷

In short, endorsing the combination of Pareto, Anonymity and Pigou-Dalton has significant implications for the form of the moral ranking – by ruling out strong egalitarianism, weighted utilitarianism, utilitarianism, and sufficientism – but does not get us all the way to a specific ranking. Making further progress within the confines of NPA^C axiology as precisified by the claims-across-outcomes model will require additional stipulations regarding claim strength – a matter beyond the scope of the present article.

If the Difference Comparison axiom is adopted in lieu of Pigou-Dalton, we do end up with a specific ranking. It can be shown that Pareto, Anonymity, and Difference Comparison imply the utilitarian ranking.³⁸

4. The Fixed-Population Case: Differentiated Desert

Recall that ‘desert’, in the claims model, is something about an individual that helps to fix the strength of that individual’s claim between two outcomes, and does so other than by helping to fix their or anyone else’s well-being levels in the two – for example, the individual’s degree of prudence or level of moral virtue. I assume that desert can be formally expressed as a ranking of a set of desert-histories. Desert levels are equivalence classes of desert-histories with respect to the desert ranking; this ranking need not be complete or measurable.³⁹ ‘*D*’ is used to indicate a desert level, and ‘ \succeq^{DE} ’ denotes the desert ranking.

Introducing differentiated desert to the fixed-population case does not change the claims framework – except in one way. A claim-across-outcomes remains a relation between a given individual and a given pair of outcomes, with four possible valences. The valence of an individual’s claim is still determined by their well-being. The basic rules – Supervenience, Claims as Pro Tanto Moral Considerations, Two Person Conflicts, and Equal Balance – remain in force. What *does* change is this: the strength of an individual’s claim depends upon their desert, and not merely their well-being level and difference.

In what follows, I set forth the axiomatic implications of the claims framework with differentiated desert; show that these axioms are inconsistent if desert is intrapersonally variable; and argue, in light of this inconsistency, that NPA^C axiology is best specified as desert-neutral.

³⁷On utilitarianism and sufficientism, see Adler (2019). Weighted utilitarianism is the sum of well-being multiplied by individual-specific weights. A standard inequality metric applied to well-being numbers would satisfy Anonymity and Pigou-Dalton but not Strong Pareto.

³⁸See Appendix.

³⁹See Appendix.

4.1 Axioms: Pareto, Desert-Modulated Anonymity, Desert-Modulated Pigou-Dalton, Priority for the More Deserving

With differentiated desert, the claims framework supports *four* distinct axioms regarding the moral ranking: Pareto, Desert-Modulated (DM) Anonymity, Desert-Modulated (DM) Pigou-Dalton, and Priority for the More Deserving. Pareto is exactly the same as above, and is restated here for convenience.

Pareto. (1) *Pareto Indifference.* If everyone is welfare-*unaffected* as between y and x , then y is equally good as x . (2) *Strong Pareto.* If at least one person is better off in y than x , and everyone is at least as well off in y as in x , then: y is better than x .

DM Anonymity. If the well-being/desert pairs of the N individuals in x are a permutation of the well-being/desert pairs of the N individuals in y , the two outcomes are equally good.

DM Pigou-Dalton. Let x and y be such that: (a) individual i is better off than individual j in x ; (b) relative to outcome x , individual i 's well-being in y decreases by ΔW , while individual j 's increases by the same amount; (c) individual i in y is better off than individual j in x ; (d) individual j 's desert level in each of the two outcomes is at least as high as individual i 's desert level in each of the two; (e) everyone else is welfare-*unaffected* as between x and y . Then y is better than x .

Priority for the More Deserving. Let x and y be such that: (a) in x , individual i is at well-being level W^* and individual j is at well-being level W , with $W^* >^L W$; (b) in y , the individuals swap well-being levels (now i is at W and j is at W^*); (c) individual j 's desert level in each of the two outcomes is higher than individual i 's in each of the two; and (d) everyone else is welfare-*unaffected* as between x and y . Then y is better than x .

The argument for Pareto is exactly the same as above. The arguments for the remaining three axioms are as follows.

DM Anonymity. Let's say that any two outcomes z and zz are a 'two person well-being/desert swap' if there is some person i whose well-being/desert pairs in z and zz , respectively, are (W, D) and (W^*, D^*) ; another person j whose well-being/desert pairs in z and zz respectively are (W^*, D^*) and (W, D) ; and every other person is welfare-*unaffected* and has the same desert levels in the two outcomes. If so, z and zz are equally good.

Why? (1) If $W \sim^L W^*$, then by Pareto Indifference z and zz are equally good.

(2) Assume instead that $W^* >^L W$. If so, i has a claim to zz over z , and j has a claim to z over zz , with everyone else having null claims. The rule for Two Person Conflicts comes into play. By symmetry, the two individuals have equally strong claims, and hence z is equally good as zz . Parallel reasoning shows that the two outcomes are equally good if $W >^L W^*$.

(3) The other possibility is that W^* and W are incomparable. Then, by a modified version of the Equal Balance rule, z and zz are equally good.⁴⁰

(4) If y and x meet the antecedent conditions for DM Anonymity, y can be reached from x by a finite sequence of two-person well-being/desert swaps. By the transitivity of \succeq^M , y is equally good as x .

DM Pigou-Dalton. If the antecedent conditions for the DM Pigou-Dalton axiom are met, individual i has a claim to x over y , while j has a claim to y over x , and everyone else has null claims. So the Two Person Conflicts rule applies. As with the discussion in section 3.1 of the straight Pigou-Dalton axiom, let W^{**} and W' denote the well-being levels of i and j , respectively, in x . Let W^* denote the well-being level of i in y , and W'' the well-being level of j in y . ΔW is the well-being difference between W^{**} and W^* , and also the well-being difference between W'' and W' . Since i in y is better off than j in x , it follows that $W^* \succ^L W'$.

In short: i 's claim is a claim to move up from well-being level W^* by difference ΔW , while j 's claim is a claim to move up from well-being level W' by the same difference (ΔW), with $W^* \succ^L W'$.

Which individual has the stronger claim? In section 3.1, defending the straight Pigou-Dalton axiom, I argued that an individual at a lower starting-point well-being level plausibly has a stronger claim, *ceteris paribus*. If the reader accepts this argument, then they should conclude that individual j has the stronger claim in the case at hand. Why? Individual j starts at a lower level than individual i , and the well-being differences are equal. The antecedent conditions for DM Pigou-Dalton posit that j 's desert level in each of the two outcomes is at least as high as i 's desert level in each of the two.

Assume, first, that the four desert levels are equal. If so, the two claims do not differ with respect to either well-being differences or desert, and (if indeed the individual at a lower starting-point well-being level has a stronger claim, *ceteris paribus*) it follows immediately that j has the stronger claim. Assume, next, that j 's desert level in at least one of the outcomes is higher than i 's in at least one. Surely this strengthens, rather than weakens, j 's claim relative to the case in which the four desert levels are equal.

Priority for the More Deserving. If the antecedent conditions for Priority for the More Deserving hold true, individual i has a claim to x over y , while j has a claim to y over x , and everyone else has null claims. See Table 3. So the Two Person Conflicts rule applies. Note now that both i and j have a claim to move from W to W^* . Thus, with respect to *two* potential determinants of claim strength – starting-point well-being level and well-being difference – the two individuals are identical. However, with respect to the *third* potential determinant, desert, the individuals are different. Individual j in each of the two outcomes is at a higher desert level than individual i in each of the two.

If an NPA^C axiology includes desert as a determinant of claim strength, then desert must *at least* have a *ceteris paribus* role. At the very least: if two claims do not

⁴⁰*Desert-modified Equal Balance:* Let two persons have incomparable claims between outcomes x and y , with everyone else welfare- unaffected. If (1) the first person's well-being level in x is the same as the second's in y , and vice versa and (2) the first person's desert level in x is the same as the second's in y , and vice versa, then: x and y are equally good.

Table 3. Priority for the More Deserving

	Outcome x	Outcome y
Ibrahim	W^*, D^+	W, D^{++}
Josie	W, D'	W^*, D''
Other individuals are welfare-unaffected as between x and y		

Note: Outcomes x and y meet the antecedent conditions for Priority for the More Deserving. Thus $W^* >^L W$; $D' >^{DE} D^+$, $D' >^{DE} D^{++}$; and $D'' >^{DE} D^+$, $D'' >^{DE} D^{++}$.

differ with respect to either starting-point well-being level or well-being difference, the comparative strength of the claims is determined by the individuals' comparative deserts. If so, j has the stronger claim.⁴¹

4.2 Inconsistencies

By saying that desert is 'intrapersonally fixed', I mean this: each individual is at a constant desert level in all of the outcomes in \mathbf{O} , the set of outcomes being ranked. Amy is at level D in all the outcomes; Bob is at level D^* in all the outcomes (which may or may not be the same as D); and so forth for each of the individuals. Desert is 'intrapersonally variable' if it is not intrapersonally fixed.

In what follows, I assume (as throughout the article) that the moral ranking \succeq^M is transitive and reflexive.

If desert is intrapersonally fixed, the four axioms – Pareto, DM Anonymity, DM Pigou-Dalton, and Priority for the More Deserving – are jointly consistent. It is possible for a transitive, reflexive \succeq^M to satisfy all four. To illustrate, consider a desert-modulated version of prioritarianism. There is some function $f(\cdot)$, which assigns each individual a number in a given outcome as a function of their well-being and their desert. $f(\cdot)$ is strictly increasing and strictly concave in well-being and satisfies the 'slope condition' in desert. See Figure 1. Each outcome is assigned a

⁴¹In my discussion of DM Anonymity, DM Pigou-Dalton, and Priority for the More Deserving, I have not discussed a potential fourth, 'relational' factor in determining claim strength: how the individual's well-being level both in the outcome where they are worse off and in the outcome where they are better off compares to the well-being levels of everyone else in the population in each outcome. See note 28. Introducing this factor does not undercut the case for these three axioms. In the case of DM Anonymity and DM Pigou-Dalton, the analysis is isomorphic to that set forth in notes 28 and 34, respectively.

To see that this fourth factor doesn't undercut the case for Priority for the More Deserving, consider Table 3. Assume that the $(N - 2)$ individuals other than Ibrahim and Josie, the welfare-unaffected, are at well-being levels $W_1, \dots, W_{(N - 2)}$. Consider Ibrahim's claim to x over y . In the outcome (y) in which Ibrahim is worse off, at level W , the persons in the population other than Ibrahim are at well-being levels W^* (Josie) and $W_1, \dots, W_{(N - 2)}$ (the welfare-unaffected). In the outcome (x) in which Ibrahim is better off, at level W^* , the persons in the population other than Ibrahim are at well-being levels W (Josie) and $W_1, \dots, W_{(N - 2)}$. Consider, now, Josie's claim to y over x . In the outcome in which Josie is worse off (x), at level W , the persons in the population other than Josie are at well-being levels W^* (Ibrahim) and $W_1, \dots, W_{(N - 2)}$. In the outcome (y) in which Josie is better off, at level W^* , the persons in the population other than Josie are at well-being levels W (Ibrahim) and $W_1, \dots, W_{(N - 2)}$.

In short, the relational factor, whatever its relevance to claim strength, has the very same impact on the strength of Ibrahim's claim as on the strength of Josie's.

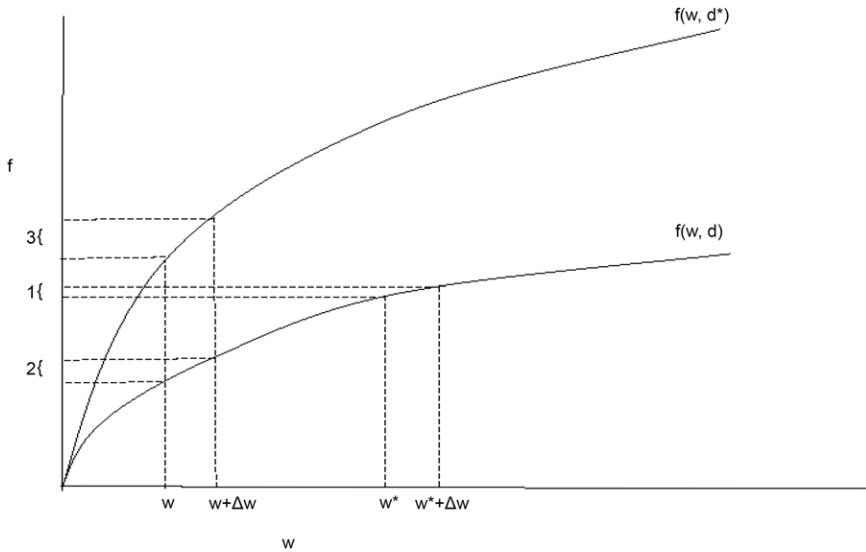


Figure 1. Desert-Modulated Prioritarianism.

Source: Adler (2018). Note: Well-being and desert are both measurable, by w and d numbers respectively. Desert-modulated prioritarianism assigns each outcome the score $\sum_{i=1}^N f(w_i, d_i)$ and ranks outcomes according to these scores. The figure illustrates $f(\cdot)$ as a function of well-being for two different levels of desert, with $d^* > d$. Note that $f(\cdot)$ is not merely strictly increasing and strictly concave in w for each given desert level, but satisfies the slope condition; at each level of w , $f(w, d^*)$ has a greater slope than $f(w, d)$. The dashed lines illustrate that the $\sum_{i=1}^N f(w_i, d_i)$ formula satisfies DM Pigou Dalton and Priority for the More Deserving with desert intrapersonally fixed.

score equaling the sum of individuals' $f(\cdot)$ values, and the outcomes are ranked in the order of these scores. It is not difficult to see that desert-modulated prioritarianism will yield a reflexive, transitive, ranking of outcomes that satisfies all four of the above axioms, if desert is intrapersonally fixed.⁴²

However, with intrapersonally variable desert, problems emerge. First, Priority for the More Deserving is internally inconsistent. That is, Priority for the More Deserving *on its own*, plus the basic premise of a reflexive, transitive \succeq^M , leads to a logical contradiction – even without positing additional axioms. See Table 4.

The internal inconsistency of Priority for the More Deserving might be remedied by shifting to a restricted version of Priority for the More Deserving, as follows:

Restricted Priority for the More Deserving. Let x and y be such that: (a) each person has the same desert level in y as in x ; (b) in x , individual i is at well-being level W^* and individual j is at well-being level W , with $W^* \succ^L W$; (c) in y , the individuals swap well-being levels (now i is at W and j is at W^*); (d) individual j 's desert level in the two outcomes is higher than individual i 's desert level in the two outcomes; and (e) everyone other than i and j is welfare-unaffected as between the two outcomes. Then y is better than x .

⁴²See Adler (2018).

Table 4. Priority for the More Deserving is Internally Inconsistent

	Outcome x	Outcome y	Outcome z	Outcome zz
Anya	W, D^+	W^*, D^+	W^{**}, D^+	W^{**}, D^+
Bill	W^*, D	W, D	W, D^{+++}	W^*, D^{+++}
Cara	W^{**}, D^{++}	W^{**}, D	W^*, D	W, D^{++}
Other individuals are welfare-unaffected as between the four outcomes				

Note: The well-being levels are such that $W^{**} >^L W^* >^L W$. The desert levels are such that $D^{+++} >^{DE} D^{++} >^{DE} D^+ >^{DE} D$. Priority for the More Deserving yields an intransitivity: it requires that $x >^M zz >^M z >^M y >^M x$.

Restricted Priority for the More Deserving differs from Priority for the More Deserving by adding the condition that each person’s desert level in x is the same as that person’s desert level in y .⁴³

Restricted Priority for the More Deserving is internally consistent, even in the case of intrapersonally variable desert. However, with intrapersonally variable desert, Restricted Priority for the More Deserving is inconsistent with Pareto Indifference. See Table 5.

What about Strong Pareto? If we assume that well-being and desert are measurable and that the moral ranking satisfies DM Anonymity and a continuity axiom, Restricted Priority for the More Deserving is inconsistent with Strong Pareto. See Table 6.⁴⁴

These results and related ones are summarized in Table 7.

4.3 An Objection

I have argued that NPA^C axiology with differentiated desert supports both the Pareto axiom and the axiom of Priority for the More Deserving (as well as DM Anonymity and, plausibly, DM Pigou-Dalton). Pareto and Priority for the More Deserving, in turn, lead to the inconsistencies summarized in Table 7, which arise when desert is intrapersonally variable.

It might be objected that NPA^C axiology with differentiated desert does not in fact support the Pareto axiom, but only a *restricted* Pareto axiom (Restricted Pareto Indifference and Restricted Strong Pareto). ‘Restricted’ signals that these axioms apply only if each person in the population has the same desert level in the two outcomes under comparison.

Restricted Pareto. (1) *Restricted Pareto Indifference.* If x and y are such that (a) each person has the same desert level in y as in x , and (b) everyone is welfare-unaffected as between y and x , then: y is equally good as x . (2) *Restricted Strong Pareto.* If x and y are such that (a) each person has the same desert level in y as

⁴³This is not the same as saying that desert is ‘intrapersonally fixed’, which (as that term is used here) means that each individual’s desert level remains constant in *all of the outcomes* in O , not merely x and y .

⁴⁴See Adler (2018) for discussion of the compatibility of Restricted Priority for the More Deserving and Strong Pareto if DM Continuity is dropped.

Table 5. Restricted Priority for the More Deserving is Inconsistent with Pareto Indifference

	Outcome x	Outcome y
Ingrid	W^*, D	W, D
Jim	W, D^*	W^*, D^*
	Outcome z	Outcome zz
Ingrid	W^*, D^*	W, D^*
Jim	W, D	W^*, D
Every other individual is welfare- unaffected as between the four outcomes and has the same desert level in each of the four		

Note: The well-being levels are such that $W^* >^L W$. The desert levels are such that $D^* >^{De} D$. Pareto Indifference requires that $x \sim^M z$ and $y \sim^M zz$. Restricted Priority for the More Deserving requires that $y >^M x$ and $z >^M zz$. Satisfying both requirements is inconsistent with the transitivity of \geq^M .

Table 6. Restricted Priority for the More Deserving and Strong Pareto

	Outcome x	Outcome y	Outcome z	Outcome zz
India	w^*, d	w, d	$w - \epsilon, d$	$w^* - \epsilon, d^*$
Javier	w, d^*	w^*, d^*	$w^* - \epsilon, d^*$	$w - \epsilon, d$
Every other individual is welfare- unaffected as between the four outcomes and has the same desert level in all four				

Note: w^* and w are well-being numbers, and d^* and d desert numbers, with $w^* > w$ and $d^* > d$. With well-being and desert both measurable, each outcome becomes a vector of individual well-being and desert numbers. DM Continuity requires that if one such vector is ranked above or below a second, then this ranking holds true for a sufficiently small region around the first vector. By Restricted Priority for the More Deserving, $y >^M x$. By DM Continuity, $z >^M x$ for $\epsilon > 0$ sufficiently small. By DM Anonymity, $zz \sim^M z$. By the transitivity of \geq^M , $zz >^M x$, which contradicts Strong Pareto.

in x , and (b) at least one person is better off in y than x , and everyone is at least as well off in y as in x , then: y is better than x .

The objection runs as follows.⁴⁵ The claims framework stipulates that the *valence* of an individual’s claim depends upon their well-being – an individual has a claim to x over y iff they are better off in x than y ; a claim to y over x iff they are better off in y than x ; a null claim iff they are equally well off in the two outcomes; and an incomparable claim iff their well-being levels in x and y are incomparable – and that non-null claims have a strength. With differentiated desert, claim valence should be understood a different way, allowing for the valence of someone’s claim to depend both on their well-being *and* their desert. (For example, if Jorge is equally well off in x and y , but at a higher desert level in y , we might wish to say that he has a claim to y over x – a claim to become more deserving – rather than a null claim.) With claim

⁴⁵Thanks to two anonymous referees for raising a version of this objection.

Table 7. A Summary

	Desert Intrapersonally Fixed	Desert Intrapersonally Variable
Priority for the More Deserving	Internally consistent and consistent with combination of DM Anonymity, DM Pigou-Dalton, Pareto Indifference, and Strong Pareto	Internally inconsistent
Restricted Priority for the More Deserving	This axiom is equivalent to Priority for the More Deserving	Internally consistent. Inconsistent with Pareto Indifference. Inconsistent with Strong Pareto if well-being and desert are measurable and \succeq^M satisfies DM Anonymity and a continuity axiom.
DM Anonymity, DM Pigou-Dalton, Pareto Indifference, Strong Pareto	The combination of these axioms is internally consistent and consistent with Priority for the More Deserving	The combination of these axioms is internally consistent

Note: The results in Table 7 presuppose the formal properties of \succeq^M , namely that it is transitive and reflexive. An axiom or axiom combination is “internally inconsistent” or “internally consistent” if, respectively, inconsistent or consistent with the formal properties of \succeq^M .

valence thus understood, the claims framework no longer implies Pareto but merely Restricted Pareto.

First, with claim valence allowed to depend upon both well-being and desert, Supervenience no longer implies Pareto Indifference, but merely Restricted Pareto Indifference. Why? Supervenience implies that, if the pattern of claims (in terms of valence and strength) between x and y is the same as that between any outcome z and itself, then x and y are equally good (since z is equally good as itself). Imagine that everyone is welfare-*unaffected* as between x and y but some individuals do not have the same desert level in y as in x . Then the pattern of claims, in term of valence and strength, is *not* necessarily the same between y and x as between z and itself. While everyone’s claim as between z and itself is null, that need not be the case as between y and x . If some individuals have non-null claims between y and x , because their desert levels vary even though they are welfare-*unaffected*, then Supervenience does *not* imply that x and y are equally good. It would imply that only if everyone were welfare-*unaffected* as between x and y and no one’s desert differed between the two – the antecedent condition for Restricted Pareto Indifference.

Second, with claim valence allowed to depend upon both well-being and desert, Claims as Pro Tanto Moral Considerations no longer implies Strong Pareto, but merely Restricted Strong Pareto. Why? Imagine that at least one person is better off in y than x , and everyone is at least as well off in y as in x . However, some individuals do not have the same desert level in y as in x . If so, it is possible that some of these individuals have claims to x over y or incomparable claims – in which case Claims as Pro Tanto Moral Considerations would not imply that y is better than x . Claims as Pro Tanto Moral Considerations only implies that y is better than x if at least one

person is better off in y than x , and everyone is at least as well off in y as in x , and no one's desert differs between the two outcomes – the antecedent condition for Restricted Strong Pareto.

An analogous objection can be made to Priority for the More Deserving. With claim valence allowed to depend upon both well-being and desert, the claims framework does not support that axiom – only Restricted Priority for the More Deserving.⁴⁶

With Pareto and Priority for the More Deserving replaced by Restricted Pareto and Restricted Priority for the More Deserving, respectively, the inconsistencies summarized in Table 7 go away. Restricted Priority for the More Deserving is both internally consistent and consistent with Restricted Pareto, whether desert is intrapersonally fixed or intrapersonally variable.⁴⁷

However, I believe that the objection fails. An NPA^C axiology, as I understand it, is an account of the moral ranking of outcomes such that the moral comparison of any two outcomes depends upon the magnitude and weight of individuals' well-being gains and losses between the two, with well-being gains counting toward moral betterness and well-being losses against. This is precisified, via the claims framework, by making the valence of an individual's claim depend upon their well-being – not their well-being *and* desert. If claim valence can depend upon both well-being and desert, so that Sue lacks a claim in favour of y over x even though better off in y (as supposed by the objection above to Strong Pareto), then Sue's well-being gain no longer counts towards the moral betterness of y . If claim valence can depend upon both well-being and desert, so that Cheng has a non-null claim between x and y even though equally well off in the two outcomes (as supposed by the objection above to Pareto Indifference), then there is something other than well-being gains and losses counting, respectively, towards moral betterness and worseness: namely, the change in Cheng's desert.

The response to the objection can also be framed in terms of the narrow all-things-considered and narrow in-a-respect person-affecting principles. NPA^C axiology, as I have stated it, is meant to articulate the thinking about the grounds of moral betterness underlying those principles. Leaving aside complications relating to well-being incompleteness, the claims framework as I have precisified it does imply those principles.⁴⁸ The claims framework, understood instead to have claim valence depend upon both well-being and desert, would not do so. Imagine that everyone is welfare-unaffected as between x and y , but some have

⁴⁶If claim valence depends on both well-being and desert, Ibrahim may no longer have a claim to x over y in Table 3, and Josie may no longer have a claim to y over x (since their desert levels may change). Further, the other individuals, although welfare-unaffected, may no longer have null claims. Thus the argument for Priority for the More Deserving (that the Two Person Conflicts rule applies to Table 3 and Josie has the stronger claim) no longer holds. However, if Table 3 is modified to meet the antecedent conditions for Restricted Priority for the More Deserving, Ibrahim does still have a claim to x over y ; Josie does still have a claim to y over x ; the remaining individuals have null claims; and Josie has the stronger claim.

⁴⁷Desert-modulated prioritarianism satisfies Restricted Pareto and Restricted Priority for the More Deserving with desert intrapersonally fixed or intrapersonally variable. It also satisfies DM Anonymity and a restricted version of DM Pigou-Dalton (which would be warranted, instead of DM Pigou-Dalton, if claim valence depends upon both well-being and desert).

⁴⁸See Appendix.

different desert levels in the two outcomes. Suppose that these individuals end up with claims in favour of y over x . Then, by Claims as Pro Tanto Moral Considerations, y is better than x even though not better for any person – contradicting the narrow all-things-considered person-affecting principle.

A claims-across-outcome framework with claim valence dependent upon both well-being and desert could well be a good precisification of some axiology. But it is not a good precisification of NPA^C axiology – or so I would argue. And thus the objection to my contention that NPA^C axiology supports the axioms of Pareto and Priority for the More Deserving does not succeed.

4.4 The Upshot: NPA^C Axiology is Best Understood to be Desert-Neutral

How might the proponent of NPA^C Axiology respond to the inconsistencies summarized in Table 7?

One possibility is to abandon the basic premise that \succeq^M is transitive. Without transitivity, Priority for the More Deserving is consistent with the remaining formal properties of \succeq^M and derivatively, \succ^M and \sim^M , and with the combination of Pareto Indifference, Strong Pareto, DM Pigou-Dalton and (a weakened version of) DM Anonymity.⁴⁹ It is well beyond the scope of this article to engage the debate about the transitivity of moral betterness and equal goodness. Suffice it to say that I find the case for transitivity to be compelling.

A second possibility is to posit that desert is intrapersonally fixed. The various difficulties summarized in Table 7 arise only with intrapersonally variable desert. But positing intrapersonally fixed desert is, substantively, very implausible. Desert is a non-well-being property of an individual that helps to determine the strength of their claim. Stated without reference to the claims framework: desert for purposes of an NPA^C axiology is an individual property that helps to determine the moral weight of that individual's well-being gain or loss between two outcomes, and that does so independently of helping to determine that individual's well-being level (or anyone else's well-being level) in those outcomes. Desert, thus defined, *could* be intrapersonally fixed. For example, a 'caste' conception of desert might suppose that there is a hierarchy of castes; each person is born into their caste and remains in it (whatever they might do) for their entire life; higher castes have higher levels of desert. But such a conception of desert (and any other that posits a fixed individual desert, which remains the same regardless of the individual's choices and efforts) is very unattractive. It is implausible that the moral weight of a well-being gain or loss to some person depends on a non-well-being factor that is wholly beyond the person's control. Individual prudence, moral deservingness, and other standard conceptions of desert in the philosophical literature certainly *do* allow that an individual, by their actions, can change how deserving they are.

⁴⁹The remaining formal properties of \succeq^M are that it is reflexive; that \succ^M is asymmetric; and that \sim^M is reflexive and symmetric. As regards DM Anonymity: the claims framework with differentiated desert argues directly for an axiom of indifference to two person well-being/desert swaps. The argument for the stronger axiom of DM Anonymity employs such indifference *plus* the transitivity of \succeq^M . See section 4.1. Without transitivity, DM Anonymity should be replaced with the weaker axiom.

A third is to restrict the Pareto axiom. I argued in the preceding section that doing so is inconsistent with NPA^{C} axiology. In any event, Priority for the More Deserving is inconsistent with the transitivity of \succeq^{M} ; this difficulty is not resolved by shifting from the full Pareto axiom to Restricted Pareto.

A fourth possibility is to maintain the transitivity of \succeq^{M} ; to allow for intrapersonally variable desert; to continue endorsing the full Pareto axiom; but to drop Priority for the More Deserving and replace it with Restricted Priority for the More Deserving. Restricted Priority for the More Deserving is ad hoc.⁵⁰ In any event, it conflicts with Pareto Indifference.

A fifth and final possibility is to drop both Priority for the More Deserving and Restricted Priority for the More Deserving, while retaining desert as a relevant consideration in other axioms (in particular, DM Pigou-Dalton and DM Anonymity). Again, however, this seems quite ad hoc.

I conclude that we should drop desert. NPA^{C} axiology is best understood *not* to include a desert component: a property of an individual that helps to determine the moral weight of that individual's well-being gain or loss between two outcomes, and that does so independently of helping to determine that individual's well-being level (or anyone else's well-being level) in those outcomes.

But the reader might object: *Many* philosophers have argued for the moral relevance of individual desert. And not only nonconsequentialists. A substantial and vibrant body of scholarship argues for the moral relevance of desert with respect to the moral ranking of outcomes (Feldman 1995; Carlson 1997; Arneson 2007; Hurka 2001; Arrhenius 2007; Kagan 2012; Skow 2012; Kershnar and Tooley 2022).

My conclusion does not undercut this literature. Rather, what I have argued is that desert is irrelevant to the outcome ranking *if* that ranking is transitive, desert is intrapersonally variable, and the ranking is grounded in NPA^{C} axiology. The theorist who wishes to retain desert as a factor helping to determine the outcome ranking – without denying transitivity or insisting (implausibly) that desert is intrapersonally fixed – can do so by rejecting NPA^{C} axiology.

5. Variable Population

To recall the general set-up of this article: there is a set of outcomes $\mathbf{O} = \{x, y, \dots\}$; a 'population', i.e. a set of individuals \mathbf{I} each of whom exists in at least one of the outcomes in \mathbf{O} ; and an axiology, which yields a moral ranking of the outcome set, \succeq^{M} , and an explanation for why this is the ranking.

In the fixed-population case, covered in sections 2 through 4, the population is a finite set of individuals each of whom exists in all of the outcomes. In the variable-population case, covered here, there are individuals who exist in some but not all outcomes. I assume that the number of existing individuals in a given outcome is finite; \mathbf{I} may be finite or infinite.

An NPA (narrowly person-affecting) axiology grounds moral betterness in well-being gains and losses to individuals. Such axiologies fall into two subclasses: NPA^{C}

⁵⁰ NPA^{C} axiology argues for Priority for the More Deserving, not merely the restricted version. The restriction is justified only if one shifts away from NPA^{C} axiology by having claim valence depend upon both well-being and desert. See section 4.3.

axiologies affirm, while NPA^{NC} axiologies deny, that well-being can be compared to nonexistence.

This section analyses the variable-population case through the lens of NPA^{C} axiology. Section 5.1 demonstrates how the claims model, presented in section 2 for the fixed-population case, can be generalized to the variable-population case. Sections 5.2 and 5.3 discuss the axiomatic upshots of this generalized model (in particular, satisfying generalized versions of the Pareto, Pigou-Dalton, and Anonymity axioms; satisfying No Difference; and yielding the Repugnant Conclusion).

Section 5.4 criticizes NPA^{NC} axiology. The project of grounding the outcome ranking in individuals' gains and losses is a nonstarter if well-being cannot be compared with nonexistence.

5.1 NPA^{C} Axiology and the Claims Model in the Variable-Population Case

The same 'history' setup that was used to explain well-being level and difference comparisons in the fixed-population case also applies to the variable-population case.⁵¹ A given history h is a bundle of well-being-relevant properties, with $h_i(x)$ denoting the bundle including all of individual i 's well-being-relevant properties in outcome x . \mathbf{H} is the set of histories. \mathbf{H} includes all and only those histories that arise by pairing each outcome x in \mathbf{O} with each of the individuals who exists in x . $\mathbf{H} \times \mathbf{H}$ is the set of history pairs. Well-being level comparisons are formalized as a ranking of \mathbf{H} , and difference comparisons as a ranking of $\mathbf{H} \times \mathbf{H}$.

In what follows, I use 'well-being better' as shorthand for 'better with respect to well-being' – and similarly for 'well-being worse', 'well-being equally good', and 'well-being incomparable'.

An NPA^{C} axiology claims that well-being *can* be compared to nonexistence. What, more precisely, does this mean? It *doesn't* mean this: for each history $h_i(x)$ of individual i , $h_i(x)$ is either well-being better than i 's nonexistence, well-being worse than i 's nonexistence, or well-being equally good as i 's nonexistence. If the well-being ranking of \mathbf{H} is incomplete,⁵² then there will be pairs of histories that are well-being incomparable. If the proponent of NPA^{C} axiology allows for this, they should surely allow that a history $h_i(x)$ *may* be well-being incomparable with the nonexistence of individual i .

What distinguishes NPA^{NC} and NPA^{C} axiology is this: the former insists, while the latter denies, that *every* history is well-being incomparable with nonexistence. NPA^{NC} axiology insists: for every combination of a set of outcomes \mathbf{O} and population \mathbf{I} , resulting in a set of histories \mathbf{H} , and for every history $h_i(x)$ in \mathbf{H} , $h_i(x)$ is well-being incomparable with the nonexistence of individual i . NPA^{C} axiology denies that this is the case.

The assertion that a given history $h_i(x)$ is well-being comparable with i 's nonexistence – that it is well-being better, well-being worse, or well-being equally good as i 's nonexistence – is, to be sure, controversial. Many population ethicists reject such an assertion as incoherent – as confused about the metaphysics of

⁵¹See section 2.1.

⁵²See note 14, explaining that the article allows for incompleteness in \succsim^M , \succsim^I and \succsim^D .

existence, the nature of well-being, or both.⁵³ One important critique of well-being comparisons to nonexistence might be termed the ‘subject-relativity’ critique. Well-being is goodness *for* a subject. History $h_i(x)$ is well-being better than history $h_i(y)$ iff outcome x is better *for* individual i than outcome y . But consider now the proposition that history $h_i(x)$ is well-being better than i ’s nonexistence. If so, outcome x is better *for* individual i than any outcome y in which i doesn’t exist. That in turn implies that y is worse *for* individual i than outcome x . But this is incoherent. Nonexistent beings don’t have properties, and so it can’t be the case that individual i in outcome y (an outcome in which they don’t exist) has the relational property of being worse off than in x .

On the other hand, some population ethicists defend well-being comparisons to nonexistence. For example, Gustaf Arrhenius, Wlodek Rabinowicz, and Nils Holtug have proposed to answer the subject-relativity critique along the following lines (Holtug 2010: Ch. 5; Arrhenius and Rabinowicz 2015). Consider any two outcomes, x and y , and individual i . If i exists in both outcomes, the proposition that ‘ x is better for i than y ’ should be understood as follows: (1) if x were to obtain, x would be better for i than y (and y would be worse for i than x); and (2) if y were to obtain, x would be better for i than y (and y would be worse for i than x). However, if i exists only in outcome x , not y , the proposition ‘ x is better for i than y ’ should be understood only to mean (1), not (1) and (2). To say that well-being involves goodness *for* a subject (subject-relativity) merely requires ascribing relational properties to individuals in outcomes where they exist, and not *also* in outcomes where they don’t exist (which *would* be incoherent).⁵⁴

I am persuaded by the Arrhenius/Rabinowicz/Holtug analysis and, thus, find it plausible that well-being can be compared to nonexistence. But the metaphysical and axiological issues at stake in the debate between those who accept and those who reject well-being comparisons to nonexistence are very thorny. This article does *not* attempt to engage those issues in detail and to take a definitive position in that debate. Rather, the approach here is provisional. An NPA^C axiology allows for well-being comparisons to nonexistence. Although such comparisons may turn out to be incoherent (confused about the metaphysics of existence, the nature of well-being, or both), such incoherence is not sufficiently clear that we should reject NPA^C axiology from the get-go. It is epistemically reasonable to endorse an NPA^C axiology and thus reasonable to explore its implications.

What, then, *are* the implications of NPA^C axiology in the variable-population case? The claims model can be extended to this case, as follows. For a given individual i , let a ‘zero history’ of that individual be a history which is equally good for them as their nonexistence. A bit more formally: let Z_i be the subset of the outcome set O such that (1) individual i exists in all of these outcomes, and (2) each of the outcomes in Z_i is equally good for that individual as i ’s nonexistence. Z_i might be empty. If Z_i is not empty, then every history $h_i(z)$, with z an outcome in Z_i , is a

⁵³See note 3.

⁵⁴For a different analysis of well-being comparisons to nonexistence, see Roberts (2003), Fleurbaey and Voorhoeve (2015) and Greaves and Cusbert (2022).

zero history of individual i . By the transitivity of well-being, all of i 's zero histories are at the same well-being level.⁵⁵

Assume now that the set of outcomes \mathbf{O} is sufficiently 'rich' that, for each individual i in the population of individuals \mathbf{I} , \mathbf{H} includes at least one zero history of that individual. We now have an easy way to define the well-being level of i 's nonexistence. Let y be any outcome in which i does not exist. Then i 's well-being level in y – the well-being level of i 's nonexistence – is the well-being level of i 's zero histories.

Note that this is an *indirect* definition of the well-being level of nonexistence. For any history $h_i(x)$, we can *directly* define the well-being level of that history, with reference to the well-being ranking of histories. A well-being level is an equivalence class of \mathbf{H} with respect to \succeq^L ; the well-being level of a particular history, $h_i(x)$, is the equivalence class to which it belongs. The well-being level of a given individual i 's nonexistence cannot be defined in this manner – since nonexistence is not a history of i . However, i 's zero history *is* a history of theirs; all of i 's zero histories do belong to an equivalence class of \mathbf{H} with respect to \succeq^L . Thus, since i 's nonexistence is equally good for them as each of their zero histories, we can indirectly define the well-being level of i 's nonexistence as the well-being level of i 's zero histories.

A parallel strategy can be followed to arrive at an indirect definition of well-being differences involving nonexistence. Recall that a well-being difference is an equivalence class of $\mathbf{H} \times \mathbf{H}$ with respect to the ranking of history pairs, \succeq^D . The well-being difference between i 's nonexistence and a history $h_j(x)$ is just the well-being difference between any zero history of i 's and $h_j(x)$. For example, consider a difference comparison involving i 's nonexistence and three histories: $h_j(y)$, $h_k(z)$, and $h_l(zz)$. Then the well-being difference between i 's nonexistence and $h_j(y)$ is greater than/less than/equal to/incomparable with the well-being difference between $h_k(z)$ and $h_l(zz)$ iff the well-being difference between a zero history of i 's and $h_j(y)$ is greater than/less than/equal to/incomparable with the well-being difference between $h_k(z)$ and $h_l(zz)$.

We can also define the notions of being 'better off', 'worse off', 'equally well off' and 'incomparably well-off' for the variable-population case. In the fixed-population case, it is a truism that individual i is better off/worse off/equally well off/incomparably well off in outcome x as compared to y iff i 's well-being level in x is higher than/lower than/equal to/incomparable with i 's well-being level in y . With our definition of the well-being level of i 's nonexistence in hand, we can readily analyse better off/worse off/equally well off/incomparably well-off in the variable-population case. Individual i in outcome x is better off/worse off/equally well off/incomparably well off as nonexistence iff i 's well-being level in x is higher

⁵⁵Let $h_i(x)$ and $h_i(y)$ be two zero histories of i . Let zz be any outcome in which i does not exist. Then x is equally good for i as zz , and zz is equally good for i as y . By the transitivity of equally-good-for, x is equally good for i as y . Thus $h_i(x)$ is equally well-being good as $h_i(y)$.

It is a further question whether zero histories of *different* individuals are at the same well-being level. The premise that they are (although quite plausible) is not required for purposes of this section (extending the claims framework to the variable-population case) or section 5.2 (using that framework to argue for generalized versions of the Pareto, Anonymity and Pigou-Dalton axioms). That premise *is* adopted in section 5.3.

than/lower than/equal to/incomparable with the well-being level of i 's nonexistence (i.e. the well-being level of any zero history of i 's).

Having defined well-being levels and well-being differences involving nonexistence, and having leveraged this definition to explain what it means to characterize a person as better off/worse off/equally well off/incomparably well-off as nonexistence, it is straightforward to state the claims framework for the variable-population case. For any two outcomes x , y , let I_{xy} be the set of ' x -or- y persons': those individuals who exist in x , in y , or in both outcomes. Each individual i in I_{xy} has a claim between x and y , with four possible valences: i has a claim in favour of x over y , in favour of y over x , a null claim, or an incomparable claim. The valence of i 's claim is determined by their well-being: i has a claim in favour of x over y iff they are better off in x than y ; a claim in favour of y over x iff they are better off in y than x ; a null claim iff they are equally well off in the two outcomes; and an incomparable claim iff their well-being levels in x and y are incomparable. Non-null claims also have a strength.

In the fixed-population case, various rules were stated to capture how the moral ranking depends upon the pattern of claims, in terms of claim valence and strength. These rules were: Supervenience; Claims as Pro Tanto Moral Considerations; Two Person Conflicts; and Equal Balance. The very same rules apply to the variable-population case. These rules take as given the valence and strength of claims. In order to fix a claim's *valence* for the variable-population case, we need to explicate the well-being level of nonexistence; in order to fix a claim's *strength* for the variable-population case, we need to do so, and also to explicate well-being differences involving nonexistence. Having provided *these* explications, we are in a position to assign claim valence and strength – and with *that* assignment in hand, we can apply the very same rules as in the fixed-population case, namely Supervenience; Claims as Pro Tanto Moral Considerations; Two Person Conflicts; and Equal Balance. These rules themselves do not need to change.

5.2 Axioms

Section 4 analysed the serious difficulties that arise from using desert as a determinant of claim strength. The analysis was undertaken for the fixed-population case; I concluded that claim strength in that case should depend *only* on well-being levels and differences, and not also desert. The difficulties demonstrated in section 4 would clearly carry over to the variable-population case, and so its conclusion applies to that case too.

If indeed claim strength in the variable-population case depends only on well-being levels and differences, the claims model argues for generalized versions of the Pareto and Anonymity axioms and, plausibly, for a generalized version of the Pigou-Dalton axiom as well.

Generalized Pareto. (1) *Pareto Indifference.* If each x -or- y person is equally well off in y as that person is in x , then y is equally good as x . (2) *Strong Pareto.* If at least one x -or- y person is better off in y than x , and each x -or- y person is at least as well off in y as that person is in x , then y is better than x .

Generalized Anonymity. If the well-being levels of the x -or- y persons in y are a permutation of their well-being levels in x , then the two outcomes are equally good.

Generalized Pigou-Dalton. Let x and y be such that the following holds true of the x -or- y persons: (a) individual i is better off than individual j in x ; (b) relative to outcome x , individual i 's well-being in y decreases by ΔW , while individual j 's increases by the same amount; (c) individual i in y is better off than individual j in x ; and (d) every other x -or- y person is welfare-unaffected as between x and y . Then y is better than x .

The arguments from the claims framework for Pareto, Anonymity, and Pigou-Dalton in the fixed-population case can be readily reconfigured to yield arguments for, respectively, Generalized Pareto, Generalized Anonymity and Generalized Pigou-Dalton in the variable-population case. The only difference is that the fixed-population arguments make reference to the claim valences and strengths of individuals in I (the individuals each of whom exists in all of the outcomes, including the outcomes x and y referenced by the axiom); while the variable-population arguments make reference to the claim valences and strengths of individuals in I_{xy} (the individuals who exist in one or both of the outcomes x and y referenced by the axiom).

Section 3.2 set forth an inclusive list of outcome-ranking rules that satisfy Pareto, Anonymity, and Pigou-Dalton in the fixed-population case: prioritarianism, leximin, prioritarianism with a lexical threshold, relative prioritarianism, and weak utilitarianism. Each such rule has multiple variable-population extensions. Some, but not all, of these extensions will satisfy Generalized Pareto, Generalized Anonymity and Generalized Pigou-Dalton. For example, prioritarianism in the fixed-population case ranks outcomes by summing well-being numbers plugged into a strictly increasing, strictly concave transformation function. Prioritarianism can be extended to the variable-population case via 'total prioritarianism', 'critical-level prioritarianism' or 'average prioritarianism', among other possibilities.⁵⁶ 'Total prioritarianism' satisfies the combination of Generalized Pareto, Generalized Anonymity and Generalized Pigou-Dalton, while 'critical-level prioritarianism' and 'average prioritarianism' do not.

5.3 Implications with Respect to Standard Population-Ethics Axioms

In this section, I assume that everyone's zero histories are at the same well-being level – a well-being level that I'll denote W^{zero} . This premise is required for some if not all of what follows,⁵⁷ and in any event seems very plausible.

⁵⁶See generally Blackorby *et al.* (2005: Ch. 5), discussing variable-population extensions of generalized utilitarianism, namely the sum of well-being transformed by a strictly increasing and continuous function (pp. 95–96). Prioritarianism is the species of generalized utilitarianism with this function strictly concave.

⁵⁷It is not required for the proposition that \succeq^M satisfies Mere Addition, Negative Mere Addition, Avoidance of the Sadistic Conclusion and Priority for Lives Worth Living; but *is* required for the proposition that \succeq^M satisfies No Difference and runs afoul of the Repugnant Conclusion.

A moral ranking \succeq^M that satisfies the Generalized Pareto, Generalized Anonymity and Generalized Pigou-Dalton axioms has various *further* properties with respect to axioms often discussed in the population-ethics literature. First, \succeq^M can be shown to satisfy axioms that are widely seen as attractive (Blackorby *et al.* 2005; Greaves 2017; Arrhenius *Forthcoming*), all of which are implied by Generalized Pareto: *Mere Addition*, *Negative Mere Addition*, *Avoidance of the Sadistic Conclusion* and *Priority for Lives Worth Living*.⁵⁸

Second, \succeq^M satisfies No Difference: the ranking of two outcomes in which the very same number of individuals exist does not depend upon whether those who exist in the first outcome are identical to those who exist in the second. No Difference is implied by Generalized Anonymity. Parfit endorses No Difference (Parfit 1987: Ch. 16; 2011: 217–31). It is foundational for much formal work on population ethics.⁵⁹

Third, however, *if* we assume that well-being is measurable, the Repugnant Conclusion (RC) holds true of \succeq^M .

The RC is expressed in various different ways in the literature (see e.g. Parfit 1987: Ch. 17; Blackorby *et al.* 2005: 162; Parfit 2016; Greaves 2017; Arrhenius *Forthcoming*). With the concept of W^{zero} in hand, it can be stated as follows.

The Repugnant Conclusion (RC). Let W^{high} and W^{low} be any two well-being levels, the first higher than the second, and both higher than W^{zero} . Let x be an outcome in which there are M individuals who exist, all at well-being level W^{high} ; and y an outcome in which there are N individuals who exist, all at well-being level W^{low} . Then, if N is sufficiently large, y is better than x .

Assume that well-being is measurable. If so, the combination of Generalized Pareto, Generalized Anonymity, and Generalized Pigou-Dalton implies the RC.

Proof. Let w^{high} , w^{low} , and w^{zero} be the well-being numbers corresponding to levels W^{high} , W^{low} , and W^{zero} , respectively. Pick N large enough that $Nw^{\text{low}} > Mw^{\text{high}} + (N - M)w^{\text{zero}}$. Let outcome x^* be such that the same M individuals who exist in x also exist in x^* , all with well-being w^{high} ; there are $(N - M)$ additional individuals, all at w^{zero} . By Generalized Pareto Indifference, x and x^* are equally good.

Let w^{lower} be such that $w^{\text{low}} > w^{\text{lower}} > w^{\text{zero}}$ and $Nw^{\text{lower}} = Mw^{\text{high}} + (N - M)w^{\text{zero}}$. Let outcome x^{**} be such that there are N existing individuals, the same

⁵⁸These axioms are expressed in various ways in the literature. Here, I state them informally and on the premise that well-being can be compared to nonexistence. *Mere Addition*: Adding an individual to the population whose life is better than nonexistence does not make an outcome worse. *Negative Mere Addition*: Adding an individual whose life is worse than nonexistence makes an outcome worse. *Avoidance of the Sadistic Conclusion*: It is never better to add individuals whose lives are worse than nonexistence, than to add individuals whose lives are better than nonexistence. *Priority for Lives Worth Living*: An outcome in which everyone is better off than nonexistence is better than an outcome in which everyone is worse off than nonexistence.

⁵⁹Formal work generally represents an outcome as a well-being vector, stating the number of existing individuals in that outcome and their well-being numbers, but not which particular individuals exist. See e.g. Blackorby *et al.* (2005: 67). This representation assumes No Difference.

individuals who exist in x^* , and all are at w^{lower} . By Pigou-Dalton and the transitivity of the moral ranking, x^{**} is better than x^* . (Note that any mean-preserving equalization of well-being can be achieved by a sequence of Pigou-Dalton transfers.⁶⁰)

Let x^{***} be such that there are N existing individuals, the same who exist in x^* and x^{**} , and all are at w^{low} . By Generalized Anonymity, y and x^{***} are equally good. By Strong Pareto, x^{***} is better than x^{**} . Thus we have that y is equally good as x^{***} , x^{***} is better than x^{**} , x^{**} is better than x^* , and x^* is equally good as x – hence by transitivity y is better than x .⁶¹

If Generalized Pigou-Dalton is dropped and replaced with a generalized version of the Difference Comparison axiom, the RC is still implied.⁶²

To see why the RC may not follow from the combination of Generalized Pareto, Generalized Anonymity, and Generalized Pigou-Dalton if well-being is not measurable, consider the following toy example, adapted from work by Teruji Thomas (2018).⁶³ Assume that there are two dimensions to well-being: knowledge and pleasure. A given history is assigned a pair of numbers, (k, p) , the first its knowledge number, the second its pleasure number. Well-being levels are tracked by these pairs, as follows – with knowledge taking lexical priority over pleasure.⁶⁴ If one history has a higher knowledge number than a second, it is better; if the knowledge numbers are equal, then the histories are ranked according to their pleasure numbers.

Assume now that outcomes are ranked using a two-step total-prioritarian rule: x is better than y if the total prioritarian value of x , calculated using its knowledge numbers, is greater than the total prioritarian value of y , calculated using its knowledge numbers; if the outcomes are ranked equal at this step, then x and y are compared according to their total-prioritarian values calculated using pleasure numbers.⁶⁵

It can be shown that this two-step total-prioritarian rule will satisfy Generalized Pareto, Generalized Anonymity, and a dimension-specific version of Generalized Pigou-Dalton.⁶⁶ However, it does not imply the Repugnant Conclusion. For

⁶⁰See Marshall and Olkin (1979: 21–22).

⁶¹The proof assumes that the outcome set \mathbf{O} is sufficiently ‘rich’ that it contains x^* , x^{**} , x^{***} , and additional outcomes sufficient to reach x^{**} from x^* by a sequence of Pigou-Dalton transfers.

⁶²If Difference Comparison holds true, a Pigou-Dalton transfer is a matter of moral indifference, and thus x^{**} is equally good as x^* . It still follows by transitivity that y is better than x .

⁶³See also Carlson (2022) and Nebel (2022).

⁶⁴If well-being is determined by two or more lexically ordered dimensions, with an uncountable number of locations on at least one of the dimensions, and with this dimension lexically superior to a dimension with at least two locations, then well-being is not measurable – for reasons first identified by Debreu (1954).

⁶⁵Let $k_i(z)$ and $p_i(z)$ be the knowledge and pleasure numbers, respectively, of individual i in a given outcome z . Let k^{zero} and p^{zero} be the knowledge and pleasure numbers of the zero history. Then the total-prioritarian value of z , calculated using knowledge numbers, equals $\sum (g(k_i(z)) - g(k^{\text{zero}}))$, summing over the individuals who exist in z , with $g(\cdot)$ strictly increasing and strictly concave; and the total-prioritarian value of z , calculated using pleasure numbers, equals $\sum (f(p_i(z)) - f(p^{\text{zero}}))$, again summing over the individuals who exist in z , with $f(\cdot)$ strictly increasing and strictly concave.

⁶⁶*Generalized Dimensional Pigou-Dalton*: Let x and y be such that i and j are both x -or- y persons and: (a) individual i is at a higher level than individual j in x with respect to one of the well-being dimensions

example, let $(1, 1)$ be the knowledge/pleasure numbers of the zero histories. Let W^{high} be histories with the numbers $(10, 10)$, and W^{low} be histories with the numbers $(1, 2)$. Note that the two-step total-prioritarian rule will rank any outcome in which the M existing individuals are all at W^{high} better than any outcome in which the N existing individuals are all at W^{low} , regardless of the magnitudes of M and N . So the RC does not hold true.

Further research is needed to establish the conditions under which NPA^{C} axiology does imply the RC even though well-being is not measurable.

5.4 NPA^{NC} Axiology?

NPA^{NC} axiology rejects well-being comparisons to nonexistence. A substantial number of philosophers believe that it is metaphysically impossible for an outcome in which someone exists to be better for, worse for, or equally good for that person as their nonexistence. NPA^{NC} axiology concurs in this view and therefore posits that: for every combination of a set of outcomes \mathbf{O} and population \mathbf{I} , resulting in a set of histories \mathbf{H} , and for every history $h_i(x)$ in \mathbf{H} , $h_i(x)$ is well-being incomparable with the nonexistence of individual i .

In the Introduction, I mentioned two highly counterintuitive implications of the narrow all-things-considered person-affecting principle. NPA^{NC} axiology, as precisified through the claims model, seems to have just these implications. Consider, first, a fixed-number case such that the same number of individuals exist in x and y , but there are individuals who exist in x but not y (the ‘ x individuals’); and individuals who exist in y but not x (the ‘ y individuals’). If each individual who exists in both outcomes is equally well off in both, then NPA^{NC} axiology implies that the outcomes are neither better nor worse than each other, regardless of the well-being levels of the x individuals and the y individuals – even if, for example, all of the x individuals have wonderful lives and all of the y individuals have terrible lives.

Why this implication? Each of the x individuals has an incomparable claim between the two outcomes, as does each of the y individuals; those who exist in both outcomes have null claims. Could the claims of the x and y individuals somehow balance against each other such that x is, on balance, better or worse than y ?

When well-being incomparability arises as the intersection of a set of admissible complete rankings,⁶⁷ incomparable claims *can* plausibly balance out in the manner just described. To illustrate, imagine that there is a set \mathbf{W} of pairs of admissible complete rankings of the sets \mathbf{H} and $\mathbf{H} \times \mathbf{H}$, respectively, with $(\succeq^{L^*}, \succeq^{D^*})$ one such pair. The rankings \succeq^L and \succeq^D arise as follows: history h is at least as good as history

(knowledge or pleasure); (b) relative to outcome x , individual i 's level in y on that dimension decreases by Δd , while individual j 's increases by the same amount; (c) the gap between their levels on that dimension in y is smaller than the gap in x ; (d) their levels on the other dimension do not change; and (e) everyone else is welfare-unaffected. Then y is better than x .

To be clear, I am *not* asserting that NPA^{C} axiology will endorse this dimensional axiom. Rather, I am using the toy example to highlight an open question: under what conditions will the axioms of NPA^{C} axiology imply the RC if well-being is not measurable? What the example illustrates is that two of those axioms plus a third, related one (Generalized Dimensional Pigou-Dalton) may fail to do so if well-being is not measurable.

⁶⁷See Appendix.

h^* iff h is at least as good as h^* according to every \succeq^{L^*} in \mathbf{W} ; and the difference between histories h and h^* is at least as large as the difference between histories h^+ and h^{++} iff the first difference is at least as large as the second according to every \succeq^{D^*} in \mathbf{W} .

Imagine now that two individuals, i and j , are each incomparably well off in x and y , with everyone else equally well off. It *could* be the case that, for every $(\succeq^{L^*}, \succeq^{D^*})$ pair, if one individual has a claim in favour of y , the other individual has a stronger claim in favour of x . That is, on each of the complete well-being rankings giving rise to \succeq^L and \succeq^D , the balance of claims is in favour of x . If so, x would be the better outcome even though i and j have incomparable claims and everyone else null claims.

But the incomparability between histories and nonexistence, according to NPA^{NC} axiology, does *not* arise as the intersection of a set of admissible complete rankings. If i exists in x but not y , then there is *no* metaphysically possible well-being ranking such that $h_i(x)$, i 's history in x , is better than, worse than, or equally good as i 's nonexistence in y . It's not that there are a multiplicity of eligible, conflicting, well-being comparisons between $h_i(x)$ and i 's nonexistence. Rather, $h_i(x)$ and i 's nonexistence simply are not the kinds of items that can be compared with respect to well-being. Thus, in the fixed-number case described four paragraphs above, it's very hard to see how the incomparable claims of the x individuals and y individuals could somehow balance out so that x is, on balance, better or worse than y .

A similar analysis suggests that NPA^{NC} axiology has a second highly counterintuitive implication. Consider now a different-number case such that there are individuals who exist in x but not y ; none exist in y but not x . If each individual who exists in both outcomes is equally well off in both, then NPA^{NC} axiology seems to imply that the outcomes are neither better nor worse than each other – even if the x individuals have wonderful lives or, instead, terrible ones. Note that the only non-null claims between x and y are the incomparable claims of the x individuals. Once more, it is hard to see how these could somehow balance out such that x is, on balance, better or worse than y .⁶⁸

If NPA^{NC} axiology indeed has these implications, as seems plausible, then we should reject it. The implications, together, amount to the following: outcome x is better or worse than outcome y only if there is at least one individual who exists in both and is not equally well off in the two. This is too counterintuitive to be believed. In short, the project of grounding the moral ranking in well-being gains and losses to individuals must, it seems, be abandoned if coupled with the premise that well-being cannot be compared to nonexistence.

⁶⁸Bader (2022) reaches a different conclusion, namely that person-affecting utilitarianism without well-being comparisons to nonexistence yields pervasive incomparability in different-number cases, but not fixed-number cases with varying identity (different individuals exist in the outcomes under comparison). Even if NPA^{NC} axiology does allow for moral comparability in fixed-number cases with varying identity, pervasive incomparability in different-number cases would be sufficient to reject NPA^{NC} axiology.

6. Conclusion

A narrowly person-affecting (NPA) axiology grounds the moral ranking of outcomes in individuals' well-being gains and losses. NPA^{NC} axiology rejects well-being comparisons to nonexistence and – as a consequence – has wildly counterintuitive upshots. This article, instead, has systematically explored the implications of NPA^C axiology, which allows for such comparisons. That exploration has been undertaken using the claims-across-outcomes framework, which precisifies NPA^C axiology.

NPA^C axiology plausibly yields three fundamental axioms for the outcome ranking in the fixed-population case – Pareto, Pigou-Dalton and Anonymity – and generalized versions of these for the variable-population case. Or so I have argued. Thus a striking feature of this axiology is that it offers a unified justification for efficiency (Pareto) and equity (Pigou-Dalton). It also leads to a *welfarist* outcome ranking – one that is independent of non-well-being (desert) considerations.

In short, NPA^C axiology is a plausible foundation for Paretian, equity-regarding welfarism. The attempt to ground the outcome ranking in narrowly person-affecting considerations has been much criticized in the philosophical literature; but (at least for welfarists) this approach warrants a serious second look.

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Appendix

A.1 Quasiorderings

Let $S = \{r, s, t \dots\}$ be an arbitrary set. A quasiordering on S , denoted as \succsim , is a transitive, reflexive, binary relation between its elements. ' $r \succsim s$ ' indicates that those two elements stand in that relation. *Transitivity*: if $r \succsim s$ and $s \succsim t$ then $r \succsim t$. *Reflexivity*: for all r , $r \succsim r$.

A quasiordering is a formal expression of the at-least-as-good relation. From \succsim we can derive two other binary relations, $>$ (better than) and \sim (equally good as). $r > s$ iff $r \succsim s$ and not $s \succsim r$. $r \sim s$ iff $r \succsim s$ and $s \succsim r$.

Two items r and s are incomparable (as I mean that term in this article) if: neither $r \succsim s$ nor $s \succsim r$. A quasiordering is 'complete' if no pairs of items are incomparable, otherwise 'incomplete'.

In this article, quasiorderings are used to formalize the moral ranking of outcomes, denoted ' \succsim^M '; the well-being rankings of histories and history pairs, denoted respectively as ' \succsim^L ' and ' \succsim^D '; and the ranking of desert histories, denoted ' \succsim^{DE} '.

A.2 Well-Being

Let $H = \{h, h^*, \dots\}$ be the set of histories, and $H \times H = \{(h, h^*), \dots\}$ the set of history pairs. An account of well-being makes comparisons of well-being levels and differences. These are expressed, respectively, as \succsim^L (a quasiordering on H) and \succsim^D (a quasiordering on $H \times H$). These quasiorderings conform to the following structural axioms, capturing truisms about well-being level and difference comparisons. *Linkage*: $h \succsim^L h^*$ iff $(h, h^*) \succsim^D (h^*, h^*)$. *Reversal*: $(h, h^*) \succsim^D (h^+, h^{++})$ iff $(h^{++}, h^+) \succsim^D (h^*, h)$. *Separability*: If $(h, h^+) \succsim^D (h^*, h^+)$ then $(h, h') \succsim^D (h^*, h')$; and if $(h^+, h) \succsim^D (h^+, h^*)$ then $(h', h) \succsim^D (h', h^*)$. *Neutrality*: $(h, h) \sim^D (h^*, h^*)$. *Concatenation*: If $(h, h^*) \succsim^D (h', h'')$ and $(h^*, h^{**}) \succsim^D (h'', h''')$ then $(h, h^{**}) \succsim^D (h', h''')$.

Well-being level and difference comparisons are 'complete' if \succsim^L and \succsim^D are both complete. Well-being level and difference comparisons are 'measurable' if there

exists a real-valued function $w(\cdot)$ that represents \succsim^L and \succsim^D as follows: $w(h) \geq w(h^*)$ iff $h \succsim^L h^*$; and $w(h) - w(h^*) \geq w(h^+) - w(h^{++})$ iff $(h, h^*) \succsim^D (h^+, h^{++})$. Measurability implies completeness, but not vice versa; see note 64. See Adler (2019: 268) for a statement of axioms that, together with the structural axioms above, and the completeness of \succsim^L and \succsim^D , imply measurability.

A quasiordering \succsim on any set \mathbf{S} partitions the set into a family of subsets, ‘equivalence classes’, each consisting of elements that stand in relation \sim to each other. A well-being level is an equivalence class of \mathbf{H} with respect to \succsim^L , namely a subset of \mathbf{H} whose members stand in relation \sim^L to each other. A well-being difference is an equivalence class of $\mathbf{H} \times \mathbf{H}$ with respect to \succsim^D , namely a subset of $\mathbf{H} \times \mathbf{H}$ whose members stand in relation \sim^D to each other.

A.3 Intersection and Equal Balance

To say that \succsim^L and \succsim^D ‘arise as the intersection’ of a set of admissible complete rankings’ means (I stipulate) the following. Cf. Rabinowicz (2008). There is a set $\mathbf{W} = \{(\succsim^{L^*}, \succsim^{D^*})\}$, such that each \succsim^{L^*} is a complete quasiordering of \mathbf{H} and each \succsim^{D^*} a complete quasiordering of $\mathbf{H} \times \mathbf{H}$; each $(\succsim^{L^*}, \succsim^{D^*})$ pair in \mathbf{W} is a permissible (although not required) precisification of the well-being theory at hand; each $(\succsim^{L^*}, \succsim^{D^*})$ pair satisfies the structural axioms (see section A.2); $h \succsim^L h^*$ iff $h \succsim^{L^*} h^*$ for each \succsim^{L^*} in a pair belonging to \mathbf{W} ; and $(h, h^*) \succsim^D (h^+, h^{++})$ iff $(h, h^*) \succsim^{D^*} (h^+, h^{++})$ for every \succsim^{D^*} in a pair belonging to \mathbf{W} .

Consider, now, the Equal Balance rule. Imagine that \succsim^L gives rise to well-being levels W and W^+ , which are incomparable; and that Amy is at well-being level W in x and W^+ in y , while Barry is at well-being level W^+ in x and W in y . If \succsim^L and \succsim^D arise as the intersection of a set of admissible complete rankings, then according to each $(\succsim^{L^*}, \succsim^{D^*})$ pair in \mathbf{W} either Amy has a claim to x over y and Barry has an equally strong claim to y over x ; or vice versa; or the two have null claims. Thus Equal Balance seems very plausible.

A.4 Difference Comparisons and Utilitarianism

I consider the fixed-population case and assume well-being completeness and measurability. On this assumption, the utilitarian ranking is as follows: $x \succsim^M y$ iff $\sum_{i=1}^N w_i(x) \geq \sum_{i=1}^N w_i(y)$. It is clear that if \succsim^M is the utilitarian ranking, then it satisfies Pareto, Anonymity, and Difference Comparison.

The converse can be shown, as follows. Let $\bar{w}(x)$ and $\bar{w}(y)$ denote, respectively, average well-being in outcome x and outcome y . Let x^* be an outcome in which all N individuals are at well-being level $\bar{w}(x)$, and y^* an outcome in which all N individuals are at well-being level $\bar{w}(y)$. Let a neutral transfer be such that one person gains some amount of well-being, a second person loses the same amount, and everyone else is welfare-unchanged. x^* can be reached by a series of neutral transfers from x , and y^* by a series of neutral transfers from y . See Blackorby *et al.* (2002: 568). Difference Comparison implies that two outcomes related by a neutral transfer are equally good. Thus, by Difference Comparison and the transitivity of \succsim^M , x is equally good as x^* and y is equally good as y^* .

By Pareto Indifference, $x^* \sim^M y^*$ if $\bar{w}(x) = \bar{w}(y)$. By Strong Pareto, $x^* \succ^M y^*$ if $\bar{w}(x) \succ \bar{w}(y)$ and $y^* \succ^M x^*$ if $\bar{w}(y) \succ \bar{w}(x)$. Of course, for any two outcomes z and zz , $\bar{w}(z) \geq \bar{w}(zz)$ iff $\sum_{i=1}^N w_i(z) \geq \sum_{i=1}^N w_i(zz)$. We thus have that $x \sim^M y$ if $\sum_{i=1}^N w_i(x) = \sum_{i=1}^N w_i(y)$; $x \succ^M y$ if $\sum_{i=1}^N w_i(x) > \sum_{i=1}^N w_i(y)$; and $y \succ^M x$ if $\sum_{i=1}^N w_i(y) > \sum_{i=1}^N w_i(x)$.

A.5 Desert

Let $d_i(x)$ denote the ‘desert history’ of individual i in outcome x , namely a bundle of all the desert-relevant properties of individual i in x . A given outcome set \mathbf{O} and set of individuals \mathbf{I} yields a set of desert-histories \mathbf{D} . \succ^{DE} is a quasiordering of \mathbf{D} (comparing desert-histories as better, worse, equal, or incomparable with respect to desert). A desert level is an equivalence class of \mathbf{D} with respect to \succ^{DE} .

A.6 Person-Affecting Principles

Narrow All-Things-Considered Person-Affecting Principle. If x is morally better than y , then there is at least one person i such that i is better off in x than y .

Narrow In-A-Respect Person-Affecting Principle. If x is morally better than y in any respect, then there is at least one person i such that i is better off in x than y .

As shorthand, I’ll refer to these as the ATC and IAR principles, respectively.

NPA^C axiology argues for the Pareto axiom. (See section 3.) If well-being level comparisons are complete (i.e. \succ^L is complete), the ATC principle is implied by Pareto. Why? Assume that no person is better off in x than y . If \succ^L is complete, then all individuals are at least as well off in y as compared to x . This in turn implies that either (a) all individuals are equally well off in the two outcomes (in which event, by Pareto Indifference, x and y are equally morally good), or (b) at least one individual is better off in y than x , and all are at least as well off in y as in x (in which event, by Strong Pareto, y is morally better than x).

If well-being level comparisons are *incomplete*, then NPA^C axiology does not imply the ATC principle. Indeed, because NPA^C axiology argues for the Anonymity axiom (see section 3), NPA^C axiology given well-being incompleteness requires rejecting the ATC principle (Nebel 2020). Assume that well-being level W^* is higher than well-being level W , and both are incomparable with well-being level W^+ . Let outcomes x , y , and z be such that individuals i and j are at the following levels (with everyone else welfare-unaffected as between these outcomes). Outcome x : i at W , j at W^+ . Outcome y : i at W^* , j at W^+ . Outcome z : i at W^+ , j at W^* . By Strong Pareto, y is better than x . By Anonymity, z is equally good as y . By transitivity, z is better than x , in violation of the ATC principle.

The content of the IAR principle depends on what it means for x to be morally better than y *in a respect*. See Broome (n.d.). I'll understand that as follows: x is better than y in a respect iff (a) x is better than y with respect to some moral value or (b) x is morally better than y .⁶⁹ How to define 'moral value' is, to be sure, contestable, but the following 'tight' conception of value seems plausible: a consideration is a moral value if outcomes can be ordered with respect to it and one outcome is pro tanto better than another if better with respect to this consideration. ('Tight' is by contrast to a 'loose' conception of value, which says: if outcomes can be ordered with respect to some consideration, and this consideration is relevant to determining how outcomes morally compare to each other, then the consideration is a moral value. The loose conception would allow that something can be a moral value if it figures somehow in moral betterness, even if it is not a pro tanto contributor.) Given an NPA^C axiology and a tight conception of value, the only values are each person's well-being. Thus, given an NPA^C axiology and a tight conception of value, the IAR principle becomes: If x is either morally better than y or better with respect to at least one person's well-being, then there is at least one person who is better off in x than y . This is equivalent to: if x is morally better than y , then there is at least one person who is better off in x than y . In short, given an NPA^C axiology and a tight conception of value, the IAR principle is equivalent to the ATC principle – hence true if well-being level comparisons are complete, but false otherwise.

The equivalence of the ATC and IAR principles is not implied by the tight conception of value, taken alone. Consider, for example, an egalitarian axiology such that each person's well-being is a value and the equality of well-being is also a value. With *these* values, the ATC and IAR principles are not equivalent.

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⁶⁹This second prong is needed to avoid cases in which one outcome is morally better than a second but not better in any respect. If 'better in a respect' is defined only using the first prong, then the case in the preceding paragraph would be such that z is not better than x in any respect and yet is morally better.

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