

“Liberal Resourcism: Problems and Possibilities”

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A basic question for egalitarians is the “equality of what?” question. This is an instance of the more general “distribution of what?” question for distributive justice. The question is of great importance both for theoretical work on distributive justice and for its practical implementations. A number of prominent theoretical contributions to this debate have argued against using *wellbeing* as the relevant currency in a theory of justice, including the primary goods theory of Rawls (1971), the market value theory of Dworkin (1981), and the functioning/capability theory of Sen (1987a). These approaches have also inspired the practical policy debate. Most prominently, the capability approach provided the theoretical foundation for the development of the Human Development Index used by UN, which is a composite index of a country’s performance in the dimension of income, education, and health. It has become an important policy measure of a country’s level of development, and is increasingly used as the basis for

allocating aid to developing countries.

A common feature of these alternative approaches is that they introduce a *multi-dimensional currency* for distributive justice (e.g., a list of primary goods, market goods, or capabilities). This raises the fundamental problem of how to construct an *overall measure of advantage*, where “advantage” is the generic term for the currency of distributive of justice. It is commonly argued (e.g., Sen 1987b, pp. 29-30) that, even though this may be a challenging task, it is straightforward when the bundle of one individual *dominates* the bundle of another person (e.g., more in each dimension). In these cases, one may argue that everyone, independently of their conception of the good life, agrees that the dominating bundle is more valuable, and thus that the person holding this bundle has greater advantage. We show, however, that even the dominance approach leads to incoherence, if the theory is sensitive to an individual’s own conception of the good life in *intrapersonal* comparisons.

We shall focus on *liberal resourcist theories of advantage*, where we take *resourcism* to be the view that whether one person gets at least as much advantage from her *resource* bundle as a second person gets from his *resource* bundle does not depend on any interpersonal comparisons of wellbeing. Throughout we place no restrictions on what may count as a resource (e.g., primary goods, market goods, capabilities, or other items). Resourcism is simply committed to assessing the advantage value of a resource bundle without any appeal to interpersonal comparisons of wellbeing. We take *liberal* resourcism to further hold that (1) *intrapersonal* rankings of the advantage of resource bundles must agree with (defer to) the person’s intrapersonal wellbeing ranking, and (2) *interpersonal* rankings of advantage of resource bundles must be neutral among different individual conceptions of the good life.

We argue that the fundamental problem of the above dominance approach is that it

implies no sensitivity to the individual conceptions of the good life in *interpersonal* comparisons of advantage, which is necessary to capture fully the liberal ambition of neutrality. We introduce a condition that formalizes this requirement and show that it makes possible a coherent liberal resourcist account of advantage. The resulting form of liberal resourcism, however, avoids incoherence only by being silent about the assessment of advantage for a broad range of resource bundles. We leave it as a challenge to liberal resourcists to determine whether this theory of advantage can be made more robust.

In the next sections, we clarify further the notions of resource, wellbeing, and advantage. We then introduce the fundamental problem of liberal resourcism and discuss possible solutions.

1. Resources

We shall take a *resource* to be anything the possession, use, or perception of which contributes positively to a good life for at least one person. This includes Rawlsian primary goods, Dworkinian resources, and Senian capabilities. For simplicity, we shall here assume that a person's goals for a good life are restricted to her wellbeing and that her wellbeing is determined (in some broad sense) by her possession of resources and her own conception of a good life.

The category of resources, so defined, is very broad. It may include external resources such as consumer goods and services, opportunities for goods and services (e.g., access to parks and other desirable locations and positive social connections), opportunities for being able to live for and in relations to others, and protections against bads (e.g., security against physical attack). Further, it may include internal resources such as productive capacities (e.g., to make a car or play the piano), consumption capacities (e.g., capacity for positive experiences), and invulnerabilities to consumption bads (e.g., invulnerability to negative experiences).¹ Thus, the

category of resources used in our analysis is compatible with a view of humans as truly social creatures defining themselves in relationships with others and with an atomistic individualistic view of humans as only caring about their own material welfare.

A *resource bundle* consists of a specified amount (on some specified scale) of each resource. For example, if there are just two resources, money (measured in dollars) and leisure (measured in hours), with money listed first, then $\langle 10, 5 \rangle$ is a particular resource bundle: 10 dollar and 5 hours of leisure. Throughout, we typically assume that each resource is measured on some implicitly specified arbitrary scale of measurement.

In the analysis, we shall appeal to resource dominance, which is a case where one resource bundle contains at least as much of each resource as another resource bundle. We consider the following three forms of resource dominance. A resource bundle *weakly dominates* another just in case it has at least as much of each resource (e.g., $\langle 10, 5 \rangle$ vs. $\langle 9, 5 \rangle$) or $\langle 10, 5 \rangle$ vs. $\langle 10, 5 \rangle$). It *strongly dominates* another just in case it weakly dominates it and it has *more of some* resources (e.g., $\langle 10, 5 \rangle$ vs. $\langle 9, 5 \rangle$). Finally, it *strictly dominates* another just in case it has *more of each* resource (e.g., $\langle 10, 5 \rangle$ vs. $\langle 9, 4 \rangle$). Strict dominance entails strong dominance, which entails weak dominance.

2. Wellbeing

We shall argue that, given a very plausible assumption about wellbeing, important accounts of liberal resourcism for advantage turn out to be either incoherent or to face problems of radical incompleteness. In this section, we identify the assumptions about wellbeing that will be used in the later analysis.

A person's wellbeing is a matter of how well her life goes for her, where throughout we

make the simplifying assumption that wellbeing is fully determined by the resource bundle an individual possesses and her own conception of a good life. We shall appeal to the wellbeing relation, \geq_w , for which $(x,i) \geq_w (y,j)$ just in case possession of resource bundle x by person i gives her at least as much wellbeing as possession of resource bundle y by person j . The *intrapersonal* wellbeing relation for a given person, i , is simply the relation \geq_w applied to that person. That is, bundle x gives i at least as much wellbeing as bundle y is represented as: $(x,i) \geq_w (y,i)$. Using the standard definitions, the *equal wellbeing relation*, $(x,i) \sim_w (y,j)$, is defined as $(x,i) \geq_w (y,j)$ and $(y,j) \geq_w (x,i)$, and the *more wellbeing relation*, $(x,i) >_w (y,j)$ is defined as $(x,i) \geq_w (y,j)$ but *not* $(y,j) \geq_w (x,i)$.

It is important to note that we do not assume in general that the wellbeing relation is complete, even for a given person. There may be many cases of *incomparability*, where neither $(x,i) \geq_w (y,i)$ nor $(y,i) \geq_w (x,i)$. For example, consider a person who is evaluating two different possible lifestyles: working long hours with a high income but little leisure versus a more relaxed life with little income. We do not assume that one bundle (lifestyle) gives her at least as much wellbeing as the other. We allow the ranking to be incomplete in cases like this. Nor do we assume that wellbeing is cardinally measurable (for intensity). Finally, we do not assume that wellbeing is interpersonally comparable (i.e., we do not assume that, for at least some x, y, i , and j , $(x,i) \geq_w (y,j)$).

We assume throughout that the intrapersonal part of the wellbeing relation satisfies some basic consistency requirements:

Transitivity for Intrapersonal Wellbeing: For any individual, i , and for any resource bundles, x, y , and z , if $(x,i) \geq_w (y,i)$, and $(y,i) \geq_w (z,i)$, then $(x,i) \geq_w (z,i)$.

We shall make three further assumptions about wellbeing. Two are to focus the problem and the other is crucial.

To focus the problem, we shall assume the following intrapersonal condition:

Intrapersonal Dominance for Wellbeing: If a resource bundle, x , weakly dominates another resource bundle, y , then for any individual, i , $(x,i) \geq_w (y,i)$.

This is a very standard assumption made when assessing and applying resourcist theories of advantage. In line with the Rawlsian idea of primary goods, it says that the resources we consider are such that, for all people, if no resources are decreased, then wellbeing is not decreased. We make this assumption, because our goal is to show that liberal resourcism faces a fundamental problem even when this resourcist-friendly condition holds. Thus, we shall restrict our attention to cases where individuals are similar with respect to what increases their wellbeing in the specific sense that, *if one resource bundle weakly dominates another* (i.e., at least as much of all resources), then the wellbeing of any two individuals is *ordinally* affected in the same way. This is compatible with their wellbeing being ordinally affected in different ways, when there is no weak resource dominance. It is also compatible with the wellbeing of two individuals being *cardinally* affected (i.e., how much wellbeing increases) in different ways under any conditions.

We also assume:

Continuity for Wellbeing: If, for a given individual, there are two bundles, x and y , such that $(x,i) >_w (y,i)$, then there is (1) a bundle x' that is strictly dominated by x , and (2) a

bundle y' that strictly dominates y , such that $(x',i) >_w (y',i)$.

This requires, for example, that, if bundle $\langle 2,4 \rangle$ gives someone greater wellbeing than bundle $\langle 3,3 \rangle$, then, for a sufficiently small positive e , $\langle 2-e,4-e \rangle$ gives her greater wellbeing than $\langle 3+e,3+e \rangle$.

Finally, we make a crucial—but extremely weak—assumption about people's wellbeing relations. We assume that it is possible for there to be a certain minimal variability in how individuals derive wellbeing from resources. More exactly:

Pluralistic Wellbeing: It is possible that there exist at least two resource bundles, x and y , and two individuals, i and j , such that $(x,i) >_w (y,i)$ and $(y,j) >_w (x,j)$.

This condition holds that it is possible for there to be some minimal pluralism in society about the conception of a good life. It says that it is possible that there are *at least two individuals, and at least two resource bundles*, for which one person derives more wellbeing from x than from y , and the other person derives less. For example, increasing the amount of money by a certain amount, and decreasing the amount of leisure by a certain amount, might increase one person's wellbeing but decrease another person's wellbeing.

Pluralist Wellbeing is completely silent about *interpersonal comparisons* of wellbeing. It does not compare one person's wellbeing level (or interval) with that of another. It merely holds that, for one person, the ranking of two bundles in terms of wellbeing can differ from the ranking of another person. It thus rules out wellbeing being *fully objective* in the sense that the impact on wellbeing of resource tradeoffs (more of some, less of others) being the same for all individuals.

We believe that a plausible account of wellbeing allows for the possibility for at least some variation among at least some individuals in the conception of a good life, and consequently, with respect to the impact of at least some such tradeoffs (e.g., money vs. leisure). We thus consider Pluralistic Wellbeing as extremely weak and highly plausible condition on the wellbeing relation, and fully in line with the standard view of wellbeing among defenders of liberal resourcist theories of advantage.²

Throughout, then, to focus on the most interesting cases for resourcism, we assume Transitivity for Wellbeing, Continuity for Wellbeing, and Strong Intrapersonal Dominance for Wellbeing. We further assume Pluralist Wellbeing, since we believe that it is true and uncontroversial among liberals.

3. Advantage

In later sections, we shall argue that liberal resourcism about advantage faces a fundamental problem. In this section, we explain what advantage is and what basic assumptions we make about it in our analysis.

Distributive justice, as we shall understand it, is concerned with the fair and efficient distribution of resources (e.g., based on equality, priority, desert, or sufficiency). We shall use the term *advantage* to denote this value and appeal to the advantage relation, \geq_A , for which $(x,i) \geq_A (y,j)$ just in case possession of resource bundle x by person i gives her at least as much advantage as possession of resource bundle y by person j . The relations $(x,i) \sim_A (y,j)$ and $(x,i) >_A (y,j)$ are defined in the standard way, where the intrapersonal part is simply the case where $i=j$.

As with the wellbeing relation, we do not assume that the advantage relation is complete:

some bundle-person pairs may be incomparable as other bundle-person pairs (neither more, nor less, or nor equally advantageous). For example, consider the case where one person has long working hours and a high income and another person has more leisure but less income. We do not assume that one has more, or equal, advantage as the other. Their lives may be incomparable.³

We believe, in line with almost all work in this area in political philosophy and social choice theory, that any plausible theory of advantage must satisfy two basic conditions. The first comes in three different forms:

Transitivity for Advantage (TA): For any (not necessarily distinct) individuals, i , j , and k , and for any three resource bundles, x , y , and z , if $(x,i) \geq_A (y,j)$, and $(y,j) \geq_A (z,k)$, then $(x,i) \geq_A (z,k)$.

Transitivity for Advantage is a relatively uncontroversial assumption about advantage. Although it imposes restrictions on the interpersonal part on the advantage relation, it does not presuppose that interpersonal comparisons, or even intrapersonal comparisons, of advantage are possible. It merely requires transitivity among whatever rankings are possible.

Some of our results will only appeal to weaker versions of this condition:

Consistency for Advantage (CSA): For any n (not necessarily distinct) individuals, $1, 2, \dots, n$, and for any n resource bundles, x_1, x_2, \dots and x_n , if $(x_1,1) \geq_A (x_2,2)$, $(x_2,2) \geq_A (x_3,3)$, \dots , $(x_{n-1},n-1) \geq_A (x_n,n)$, then it is not the case that $(x_n,n) >_A (x_1,1)$. Moreover, if for at least one of the individuals, i , other than n , $(x_i,i) >_A (x_{i+1},i+1)$, then it is not the case that (x_n,n)

$\geq_A (x_1, 1)$

Acyclicity for Advantage (AA): For any n (not necessarily distinct) individuals, $1, 2, n$, and for any n resource bundles, x_1, x_2, \dots and x_n , if $(x_1, 1) >_A (x_2, 2)$, $(x_2, 2) >_A (x_3, 3)$, \dots , $(x_{n-1}, n-1) >_A (x_n, n)$, then it is not the case that $(x_n, n) >_A (x_1, 1)$.

Consistency for Advantage is like Transitivity for Advantage, except that it allows incomparability between the first and last resource bundle (in addition to the first being at least as advantageous). Acyclicity for Advantage is a weak form of Consistency for Advantage that applies only to rankings of *strictly greater advantage* (as opposed to at least as great advantage). Moreover, it allows $(x_n, n) \sim_A (x_1, 1)$. For example, $(x_1, 1) >_A (x_2, 2)$, $(x_2, 2) >_A (x_3, 3)$, and $(x_2, 3) \sim_A (x_3, 1)$ satisfies Acyclicity, not the other two. Moreover, $(x_1, 1) >_A (x_2, 2)$, $(x_2, 2) >_A (x_3, 3)$, and neither $(x_2, 3) \geq_A (x_3, 1)$ nor $(x_2, 1) \geq_A (x_3, 3)$ (i.e., the two are incomparable), satisfies Consistency for Advantage (and hence Acyclicity for Advantage), but not Transitivity for Advantage.

The second basic condition on advantage is:

Continuity for Advantage (CA): If, for a given individual, there are two bundles, x and y , such that $(x, i) >_A (y, i)$, then there is (1) a bundle x' that is strictly dominated by x , and (2) a bundle y' that strictly dominates y , such that $(x', i) >_A (y', i)$.

This is the same condition as Continuity for Wellbeing except that it applies to advantage.

CA is relatively uncontroversial, since we can assume that the changes in resources from

x to x', and from y to y', can be as small as we like. It is not, however, entirely uncontroversial, since it rules out, for example, accounts of advantage for which some resources are *lexically prior* to others. Suppose, for example, that there are just two resources, money and health, and health is lexically prior to money in the account of advantage. This implies that any minimal increase in health increases advantage, no matter how great the accompanying loss in money. In that case, CA is violated. The lexical priority of some resources over others is, however, a relatively implausible account of advantage, since it is plausible that a large enough increase of one resource can offset a small enough decrease in another in terms of advantage. Hence, in what follows, we shall assume CA. It is important to note that CA is imposed on the advantage relation and not on the justice relation (being at least as just as). It thus does not rule out the possibility for a leximin justice relation, which is discontinuous in terms of advantage. CA only rules out discontinuous advantage relations (for a given individual).

4. Liberal Intrapersonal Advantage

Our focus is on liberal resourcism. We shall now identify the *intrapersonal* requirements of a *liberal* theory of advantage. These are the requirements on how to compare the advantage of a single individual across different situations. In later sections, we shall address *interpersonal* requirements on the theory.

Liberalism about advantage requires a certain kind of neutrality among conceptions of wellbeing. The idea of neutrality in liberal thought can be defined in quite different ways.⁴ One way of achieving neutrality is to be completely insensitive to wellbeing. A liberal theory of advantage, however, is committed, we believe, to deferring to each person's wellbeing with respect to *intrapersonal* comparisons of advantage. When one resource bundle is compared to

another with respect to the advantage *of a single individual*, a liberal theory of advantage defers to that individual's own wellbeing and does not impose any kind of perfectionistic account of advantage. More formally:

Liberal Intrapersonal Advantage (LIA): For a given individual, i , the intrapersonal part of the advantage relation is the same as her wellbeing relation, that is, for any two resource bundles x and y , $(x,i) \geq_A (y,i)$ if and only if $(x,i) \geq_W (y,i)$.

Liberal Intrapersonal Advantage states that the *intrapersonal* advantage ranking, for a given individual, is the same as her intrapersonal wellbeing ranking. This leaves completely open how *interpersonal* advantage is assessed. For example, if a person gets more wellbeing from long working hours and a high income than from more leisure but less income, then Liberal Intrapersonal Advantage states that this person has more advantage from long working hours and a high income than from more leisure but less income. It does not, however, say anything about how to compare advantage between two different individuals with these two life styles.

For some of our results, we will require only the following extremely weak version of liberal neutrality:

Minimal Liberal Intrapersonal Advantage (MLIA): It is possible that there exist at least two resource bundles, x and y , and two individuals, i and j , such that $(x,i) >_A (y,i)$ and $(y,j) >_A (x,j)$.

This is exactly like Pluralist Wellbeing, above, except expressed in terms of advantage. It

holds that there is at least some minimal variability among individuals with respect to how the advantage relation ranks resource bundles. For one individual, a resource bundle, x , can be more advantageous than a resource bundle, y , and, for another person, x can be less advantageous than y . MLIA does not require any appeal to interpersonal comparisons of advantage; it only imposes some structure on ordinal intrapersonal advantage.

Given our background assumption of Pluralist Wellbeing, LIA entails MLIA. Pluralist Wellbeing implies that there are two individuals who differ in their intrapersonal wellbeing relation. LIA states that their intrapersonal advantage relation should reflect the intrapersonal wellbeing relation. As a result, it follows that there are cases where these two individuals differ in their intrapersonal advantage relation, which is exactly what MLIA requires. MLIA is thus effectively an extremely weak version of LIA. It ensures that the intrapersonal advantage relation is minimally sensitive to the individual's wellbeing.⁵

A possible reason for being skeptical of LIA and MLIA is the view that justice, and consequently advantage, must be suitably *public*, in the sense that they are limited to matters that can be publicly and intersubjectively confirmed with reasonable reliability (e.g., Rawls 1999, pp. 327-330). We doubt that the basic principles of justice and advantage (as opposed to their application) require any such publicity, but, even if they do, we deny that this rules out the kind of appeal to wellbeing required by the liberal intrapersonal conditions. The conditions only require information about a person's *ordinal* wellbeing relation, which can be (fallibly) inferred from her behavior (e.g., she buys apples but not oranges when both are available at the same price). Moreover, it is possible that brain scans will someday reveal reliable information about a person's wellbeing relation. Facts about a person's ordinal wellbeing relation may ultimately be no less public in principle than are facts about her kidneys or her visual cortex. *Interpersonal*

comparisons may not satisfy the publicity requirement, but the liberal *intrapersonal* conditions do not appeal to those. So, even if publicity is required, this does not rule out appeals to non-comparable ordinal wellbeing in principle, and hence, does not rule out that advantage may be suitably pluralistic.

Because we focus on *liberal* theories of advantage, we assume throughout Minimal Liberal Intrapersonal Advantage (and sometimes Liberal Intrapersonal Advantage).

5. Liberal Interpersonal Advantage: Problems for Dominance

We have not yet introduced any *interpersonal* condition on advantage for liberal resourcism. Thus, we do not yet have any basis to compare advantage across individuals. A common approach is to appeal to resource dominance, which entails, for example, that, if a person has more of all resources than another person, then the first person has more advantage than the second person. This is considered an attractive approach for liberal theories of advantage, since it does not imply any particular weighting of the different resources and thus is neutral towards different conceptions of a good life. In this section, we formalize several versions of this idea and show that each is incompatible with liberal *intrapersonal* advantage.

Consider the following interpersonal condition:

Interpersonal Dominance (I⁺D): If a resource bundle, x , weakly dominates another resource bundle, y , then for any two individuals, i and j , $(x,i) \geq_A (y,j)$.

The condition states that in a case where one bundle has at least as much of all resources than the other, then the former resource bundle gives at least as much advantage, even across

individuals. This is a standard resourcist condition on advantage, which does not involve any interpersonal comparison of wellbeing and does not impose any weights on the different resources.

It may seem that Interpersonal Dominance (I^+D) and Liberal Intrapersonal Advantage (LIA) offer a promising basis for liberal resourcist theory of advantage. Consider, for example, the following advantage relation:

- (1) *Intrapersonal advantage*: If resource bundle x gives an individual at least as much wellbeing as resource bundle y , then she has at least as much advantage with x as with y .
- (2) *Interpersonal greater advantage*: If resource bundle x strongly dominates resource bundle y , then an individual with x has greater advantage than another individual with y .
- (3) *Interpersonal equal advantage*: If for two resource bundles, x and y , neither strongly dominates the other, then an individual with x has equal advantage as another individual with y .

This relation satisfies both LIA and I^+D , but unfortunately, it violates Consistency. To see the violation, consider a two-person and two-resource case, and suppose person 1 gets more wellbeing from $\langle 2,4 \rangle$ than from $\langle 3,3 \rangle$. The above relation then entails: $\langle \langle 2,4 \rangle, 1 \rangle >_A \langle \langle 3,3 \rangle, 1 \rangle$ by (1), $\langle \langle 3,3 \rangle, 1 \rangle >_A \langle \langle 3,2 \rangle, 2 \rangle$ by (2), and $\langle \langle 2,4 \rangle, 1 \rangle =_A \langle \langle 3,2 \rangle, 2 \rangle$ by (3). This satisfies Acyclicity, which only rules out $\langle \langle 3,2 \rangle, 2 \rangle >_A \langle \langle 2,4 \rangle, 1 \rangle$, but it violates Consistency, which requires that it not be the case that $\langle \langle 2,4 \rangle, 1 \rangle \geq_A \langle \langle 3,2 \rangle, 2 \rangle$.

More generally, I^+D is incompatible with Consistency, even if we substantially weaken Liberal Intrapersonal Advantage and only require Minimal Liberal Intrapersonal Advantage:

Impossibility of Liberal Resourceism with I^+D : No advantage relation satisfies Interpersonal Dominance (I^+D), Minimal Liberal Intrapersonal Advantage (MLIA), and Consistency for Advantage (CSA).

The proof is as follows:

Step 1: By MLIA, there exist resource bundles, x and y , such that $(x,i) >_A (y,i)$ and $(y,j) >_A (x,j)$.

Step 2: By I^+D , (1) $(x,j) \geq_A (x,i)$, and (2) $(y,i) \geq_A (y,j)$.

Step 3: By combining Step 1 and Step 2, it follows that $(x,j) \geq_A (x,i)$, $(x,i) >_A (y,i)$, $(y,i) \geq_A (y,j)$, $(y,j) >_A (x,j)$, which violates CSA.

The problem is that MLIA and I^+D interact to produce rankings (in Step 3) that violate CSA. Given that CSA is uncontroversial, and MLIA, we have argued, is highly plausible, I^+D must be rejected. In what follows, we shall explore whether the impossibility disappears, if this condition is weakened in various ways.

Consider first:

Equal Advantage for Same Resources: For any resource bundle, x , and any two individuals, i and j , $(x,i) \sim_A (x,j)$.

This condition states that the advantage of a given resource bundle is the same for everyone. It is an implication of I^+D , since, any bundle, x , weakly dominates itself, and hence, for any two individuals, i and j , $(x,i) \geq_A (x,j)$ and $(x,j) \geq_A (x,i)$, which is equivalent to $(x,i) \sim_A$

(x,j). It is, however, weaker than I^+D , since it is silent in all interpersonal comparisons involving different resource bundles.

Replacing I^+D with Equal Advantage for Same Resources does not, however, eliminate the impossibility. Indeed, the above proof works equally well for the latter condition. The problem is that *there is a deep conflict between Equal Advantage for Same Resources and Minimal Liberal Intrapersonal Advantage*.

This shows, we believe, that a strong, but common, form of resourcism must be rejected. Equal Advantage for Same Resources defines this strong form of resourcism. It requires that advantage be fully determined by the resource bundle, and not be sensitive in any way to the person's intrapersonal wellbeing. This fails to defer to the individual's own wellbeing relation for intrapersonal advantage. We shall therefore explore some weakenings of Interpersonal Dominance that do not entail this strong form of resourcism.

Consider the following weakening:

Weak Interpersonal Dominance (WI^+D): If a resource bundle, x , strongly dominates another resource bundle, y , then for any two individuals, i and j , $(x,i) \geq_A (y,j)$.

This is like Interpersonal Dominance, except that it requires strong dominance (more of some resources) rather than merely weak dominance (at least as much of each resource).

Consequently, it does not entail Equal Advantage for Same Resources. This is a weaker version of what Sen has endorsed: "If an individual i has more of a significant functioning than person j , and at least as much of all other functionings, then person i has higher-valued functioning vector than j does" Sen (1997, p. 205). Sen here claims that a strongly dominating bundle gives more

advantage, whereas the above condition only requires that it be at least as good.

Although the above impossibility proof does not apply if the dominance condition is so weakened, the impossibility reappears if Consistency for Advantage is strengthened to Transitivity for Advantage and Continuity for Advantage is added (Pattanaik and Xu (2007; Proposition 1):

Impossibility of Liberal Resourcism with WI^+D : No advantage relation satisfies Weak Interpersonal Dominance (WI^+D), Minimal Liberal Intrapersonal Advantage (MLIA), Transitivity for Advantage (TA), and Continuity for Advantage (CA).⁶

In fact, an impossibility remains, even if Transitivity for Advantage is weakened to Consistency for Advantage, and the dominance principle is further weakened. Consider:

Very Weak Interpersonal Dominance (VWI^+D): If a resource bundle, x , *strictly* dominates another resource bundle, y , then for any two individuals, i and j , $(x,i) \geq_A (y,j)$.

This is the same as Strong Interpersonal Dominance, except it applies only when there is more of *each* resource (and not merely more of some and less of none).

The following impossibility result shows that even VWI^+D is not plausible.

The Impossibility of Liberal Resourcism with VWI^+D : There is no advantage relation satisfying Very Weak Interpersonal Dominance (VWI^+D), Minimal Liberal Intrapersonal Advantage MLIA, Consistency for Advantage (CSA), and Continuity for Advantage

(CA).

The proof is:

Step 1: By MLIA, there exist resource bundles, x and y such that $(x,i) >_A (y,i)$ and $(y,j) >_A (x,j)$.

Step 2: By CA applied to $(y,j) >_A (x,j)$, there exist w and z , where y strictly dominates w , and z strictly dominates x , and such that $(w,j) >_A (z,j)$.

Step 3: By VWI⁺D, it follows that $(y,i) \geq_A (w,j)$ and $(z,j) \geq_A (x,i)$.

Step 4: Combining steps 1-3, it follows that $(w,j) >_A (z,j)$ (Step 2), $(z,j) \geq_A (x,i)$ (Step 3), $(x,i) >_A (y,i)$ (Step 1), $(y,i) \geq_A (w,j)$ (Step 3), which violates CSA.

Again, the crucial problem is that the dominance condition and the liberal intrapersonal advantage condition interact to generate rankings that violate CSA.

The significance of this impossibility result depends, of course, on how plausible the assumptions are as formalizations of the liberal resourcist framework. We believe that MLIA, CA, and CSA are each highly plausible. We therefore conclude that VWI⁺D must be rejected as a way of capturing the liberal ideal in interpersonal comparisons of advantage.

The implausibility of VWI⁺D for liberal resourcism can be also established in a more direct manner. The basic problem is that it is not sufficiently liberal in interpersonal comparisons of advantage, since it does not take into account how resources may affect people's wellbeing in different ways due to different tradeoffs among resources (see also Fleurbaey, 2007). This is what Liberal Intrapersonal Advantage and the weaker Minimal Liberal Intrapersonal Advantage require for intrapersonal comparisons. The basic conflict between VWI⁺D and MLIA (or LIA) thus reflects a conflict between an interpersonal dominance condition and a liberal intrapersonal

condition that requires deference to the individual's wellbeing relation for intrapersonal advantage. To illustrate this, consider a two-person, two-resource case (apples and oranges), where person *x* has 100 oranges and 1 apple, and person *j* has 99 oranges and 0 apples. Suppose further that person *i* cares almost exclusively for apples, whereas person *j*, by contrast, cares almost exclusively for oranges. In such a case, it seems implausible, within a liberal framework, to claim that person *i* has more advantage than person *j*, even though she has more of each resource. Person *i* possesses very little of the resource that she cares most about (apples), whereas person *j* possesses a large amount of the resource that she cares most about (oranges). Thus, VWI⁺D favors person *j*'s conception of a good life in that it holds that person *i* has more advantage than person *j*. It is therefore an implausible condition within a liberal resourcist framework.

We conclude, then, that liberal resourcism must reject the standard dominance approach. Given that all traditional forms of liberal resourcism have endorsed VWI⁺D, all traditional forms of liberal resourcism must be rejected. This formal impossibility result has substantive implications, since it shows in a precise manner that a seemingly attractive way of reasoning about advantage is not feasible within a liberal framework. In the remainder of the paper, we shall examine alternative ways of making liberal interpersonal comparisons of advantage within a resourcist framework.

6. Liberal Interpersonal Advantage: Some Possibilities

In this section, we propose a new conception of liberal neutrality in *interpersonal* comparisons and show that it is compatible with Liberal Intrapersonal Advantage (LIA), Continuity for Advantage (CA), and Transitivity for Advantage (TA).

We start by introducing a minimal version of liberal interpersonal neutrality, which only requires that the identity of the individual does not matter for the advantage relation.

Minimal Liberal Interpersonal Neutrality (MLI⁺N): For any two individuals, i and j , *with identical wellbeing relations*, and for any resource bundle, x , $(x,i) \sim_A (x,j)$.⁷

If the advantage relation also satisfies Liberal Intrapersonal Advantage (LIA) and Transitivity for Advantage (TA), then it follows straightforwardly that it satisfies the following minimal dominance condition.

Minimal Liberal Interpersonal Dominance (MLI⁺D): For any two individuals, i and j , *with identical wellbeing relations*, (a) if a resource bundle, x , weakly dominates another resource bundle, y , then $(x,i) \geq_A (y,j)$ and (b) if a resource bundle, x , strongly dominates another resource bundle, y , then $(x,i) >_A (y,j)$.

MLI⁺D is also consistent with Continuity for Advantage (CA), and thus we have a possibility result for liberal resourcism:

Minimal Possibility of Liberal Resourcism: There exists a resourcist advantage relation that satisfies Minimal Liberal Interpersonal Dominance (MLI⁺D), Liberal Intrapersonal Advantage (LIA), Continuity for Advantage (CA), and Transitivity for Advantage (TA).

The following advantage relation satisfies all the listed conditions:

Intrapersonal advantage: If resource bundle x gives an individual at least as much wellbeing as resource bundle y , then she has at least as much advantage with x as with y .

Interpersonal advantage: If i and j have identical wellbeing relations, and resource bundle x weakly dominates resource bundle y , then i with x has at least as much advantage as j with y .

Silence elsewhere: No other rankings of advantage are made.

This advantage relation is radically incomplete, since it only makes interpersonal comparisons between individuals with the same wellbeing relations. We now consider the possibility of extending the notion of liberal neutrality to cases where individuals have different wellbeing relations.

The basic idea of interpersonal liberal neutrality for advantage is that advantage should not favor one person's conception of the good life over that of another. This requires, we claim (as explained below), that, if two individuals have structurally identical wellbeing relations, with perhaps different resources playing the given structural roles, then, if one person has the structural counterpart of the other person's bundle, then the two individuals have the same advantage. Suppose, for example, that apples and oranges are the only two resources, and one person's wellbeing equates two extra apples with one extra orange, and the other person's wellbeing equates two extra oranges with one extra apple. Interpersonal liberal neutrality requires that the first person with two apples and one orange has the same advantage as the second person with one apple and two oranges. Let us now formulate the idea of two wellbeing relations being "structurally equivalent" more formally in terms of the following definition of

being “permutational isomorphic”, where a permutation of resource quantities is simply a reassignment of the quantities of resources, including the original assignment (e.g., $\langle 1,2,3 \rangle$ has six permutations: $\langle 1,2,3 \rangle$, $\langle 1,3,2 \rangle$, $\langle 2,1,3 \rangle$, $\langle 2,3,1 \rangle$, $\langle 3,1,2 \rangle$, and $\langle 3,2,1 \rangle$).

Let us say that the wellbeing relations of two individuals, i and j , are *permutationally isomorphic* just in case, relative to *some* set of scales for measuring each resource, for some permutation of resource quantities, π , for any two bundle of resources, x and y , $(x,i) \succeq_w (y,i)$ if and only if $(\pi(x),j) \succeq_w (\pi(y),j)$. If the wellbeing relations of two individuals are permutationally isomorphic, then, for some set of scales, one for each resource, and for some permutation, the “role” of each resource in the first wellbeing relation is the same as the role of the permuted resource of the second wellbeing relation. For example, for a two-resource case, suppose that, on a given set of scales, there is an isomorphic permutation for two wellbeing relations. Thus, either the permutation is the identity permutation, or the first wellbeing relation ranks $\langle 2,1 \rangle$ and $\langle 3,0 \rangle$ exactly as the second ranks $\langle 1,2 \rangle$ and $\langle 0,3 \rangle$.⁸

It’s important to note that, even when two wellbeing relations are permutationally isomorphic, it is not generally the case that, *for a given set of scales*, there is a permutation that makes the first relation rank bundles exactly as the second relation. To see this, suppose that, in the above example of a permutational isomorphism, we change the scale for the first resource, by making its unit half as large (and thus doubling the number of units represented). The numbers for the above resource bundles, on the new scale, are now $\langle 2,2 \rangle$, $\langle 0,3 \rangle$, $\langle 4,1 \rangle$, and $\langle 6,0 \rangle$. On this new scale, the second two bundles are not permutations of the first two. Still, for the two wellbeing relations, the second two bundles are *permutational counterparts* of the first two bundles.

If two wellbeing relations are permutationally isomorphic, then for some set of scales,

and some permutation, one ranks bundles as the other ranks their permutations. In this case, the permuted bundle is the permutational counterpart of the first (e.g., $\langle 1,2 \rangle$ is the permutational counterpart of $\langle 2,1 \rangle$). For any other set of scales, the permutational counterpart of a given bundle can be determined as follows: First, rescale the given bundle to the scale on which there is a permutational isomorphism, then determine the relevant permutation of the given bundle, and finally rescale that permutation back to the starting scale. For example, suppose that two wellbeing relations are permutationally isomorphic relative to a given set of scales. Consider a different set of scales for which the unit for the first resource is halved, with no change to the unit for the second resource. Relative to these new scales, the permutational counterpart of $\langle 2,2 \rangle$ is not $\langle 2,2 \rangle$ but rather $\langle 4,1 \rangle$. This is because $\langle 2,2 \rangle$ on the new scale is the same as $\langle 1,2 \rangle$ on the permutational isomorphism scale, and the permutational counterpart on that scale is $\langle 2,1 \rangle$, which is just $\langle 4,1 \rangle$ on the new scale. Thus, for isomorphic wellbeing relations, although the isomorphic permutation holds only for certain scales, it fully determines the (isomorphic) permutational counterparts for all scales.⁹

We now introduce what we consider the core interpersonal liberal neutrality condition.

Liberal Interpersonal Neutrality (LI⁺N): For any two individuals, i and j , and any two resource bundles, x and y , if (1) i and j have permutationally isomorphic wellbeing relations, and (2) for a given scale, x is i 's permutational counterpart, relative to j , of y , then $(x,i) \sim_A (y,j)$.¹⁰

LI⁺N captures the liberal resourcist idea that advantage should be neutral with respect to different notions of the good life. It avoids all interpersonal comparisons of wellbeing, and it

makes interpersonal comparisons of advantage on the basis of the intrapersonal wellbeing rankings of individuals. It states that, if one person's bundle is the functional equivalent for him, relative to another person, of the other person's bundle, then the two have equal advantage. It holds that the advantage ranking does not depend on which particular resources play a given role for someone's wellbeing relation, and that captures the liberal neutrality towards different conceptions of the good. We claim that all plausible liberal resourcist theories of advantage must satisfy this neutrality condition.

The above condition requires that permutational counterparts be judged interpersonally equally advantageous. If the advantage relation also satisfies Liberal Intrapersonal Advantage (LIA) and Transitivity for Advantage (TA), then it follows straightforwardly again that it satisfies the following corresponding minimal dominance condition.

Liberal Interpersonal Dominance (LI⁺D): For any two individuals, *i* and *j*, and any two resource bundles, *x* and *y*, if (1) *i* and *j* have permutationally isomorphic wellbeing relations, and (2) for a given scale, *x* weakly dominates *i*'s permutational counterpart, relative to *j*, of *y*, then $(x,i) \geq_A (y,j)$.¹¹

LI⁺D is stronger than Minimal Liberal Interpersonal Dominance, since identical wellbeing relations are permutationally isomorphic. It is not, however, weaker, or stronger, than Very Weak Interpersonal Dominance. It is not stronger, because it is silent in cases of strict resource dominance when the wellbeing relations are not permutationally isomorphic. It is not weaker, because it imposes a ranking when one person's bundle strictly dominates the permutational counterpart bundle of the other, even if there is no strict dominance for the actual

bundles. For example, if $\langle 4,2 \rangle$ for j is the permutational counterpart of $\langle 2,4 \rangle$ for i , then LI^+D ranks $\langle 5,3 \rangle$ as more advantageous than $\langle 2,4 \rangle$, even though there is no strict dominance. LI^+D also entails LI^+N , since, if x weakly dominates i 's permutational counterpart, relative to j , of y , *and vice-versa*, then the condition entails both $(x,i) \geq_A (y,j)$ and $(y,j) \geq_A (x,i)$, which is just $(x,i) \sim_A (y,j)$.

LI^+D is consistent with all the other conditions (other than the dominance conditions) that we have imposed on a liberal resourcist theory of advantage:

The Possibility of Liberal Resourcism: There exists a resourcist advantage relation that satisfies Liberal Interpersonal Dominance (LI^+D), Liberal Intrapersonal Advantage (LI^+A), Continuity for Advantage (CA), and Transitivity for Advantage (TA).

The following advantage relation satisfies all the listed conditions (a proof is in the appendix):

- (1) *Intrapersonal advantage:* If resource bundle x gives an individual at least as much wellbeing as resource bundle y , then she has at least as much advantage with x as with y .
- (2) *Interpersonal advantage:* If i and j have permutationally isomorphic wellbeing relations, and on a given scale, resource bundle x weakly dominates i 's permutational counterpart, relative to j , of resource bundle y , then i with x has at least as much advantage as j with y .
- (3) *Transitive Closure:* If $(x,i) \geq_A (y,j)$ from 1 or 2, and $(y,j) \geq_A (z,k)$ from 1 or 2, then $(x,i) \geq_A (z,k)$.
- (4) *Silence elsewhere:* No other rankings of advantage are made.

This advantage relation provides, in our view, an attractive core of the liberal resourcist idea. It provides a liberal account of *intrapersonal* advantage, since it is ordinally equivalent to intrapersonal wellbeing. More importantly, it makes interpersonal comparisons of advantage between individuals in a liberal resourcist way, since it is neutral between permutationally isomorphic wellbeing relations.

The advantage relation is, however, completely silent about interpersonal comparisons of advantage between individuals who do not have permutationally isomorphic wellbeing relations. This is a problem because relatively few people may have permutationally isomorphic wellbeing relation. The above advantage relation is thus an extremely weak theory of advantage, although quite plausible as far as it goes. A complete interpersonal advantage relation is perhaps too much to hope for, but radical incompleteness will limit the role that advantage can play in the theory of justice. A crucial challenge for liberal resourcism is thus to see whether this advantage relation can be extended to make interpersonal comparisons of advantage between individuals who do not have permutationally isomorphic wellbeing relations.

We shall here consider possible extensions of interpersonal comparisons for liberal resourcism and suggest that none is promising. First, one might consider the possibility of weakening the kind of isomorphism that is required for equal advantage to something less than permutational isomorphism. If this were plausible, then one could reformulate the liberal neutrality condition to cover these cases, and the theory would cover more ground in interpersonal comparisons. We do not, however, see any plausible way of doing this. Liberal interpersonal neutrality about the good clearly applies when individuals have permutationally isomorphic wellbeing relations (i.e., the same structure, but with different resources playing the

given roles), but there appears to be no basis within the idea of liberal neutrality to go beyond that.

A second way of strengthening the liberal interpersonal advantage relation is to be more sensitive to the wellbeing relations of the individuals. One possibility, of course, is to appeal to interpersonal comparisons of wellbeing. Resourcists, however, are by definition committed to the irrelevance of such interpersonal comparisons. This is reflected, for example, in Minimal Liberal Interpersonal Neutrality, which requires that, if two individuals have the same (ordinal) wellbeing relation and the same resource bundle, then they have the same advantage. But two people having the same wellbeing relations do not necessarily have the same level of wellbeing from the same bundle. Thus, a condition on interpersonal comparisons of advantage requiring that higher wellbeing means more advantage is incompatible with Minimal Liberal Interpersonal Neutrality.

An alternative way of appealing to wellbeing consideration is to rely on the *shared intrapersonal* (ordinal) comparisons of resource bundles in terms of wellbeing. Indeed, Sen (1992, p. 47) suggests that “[t]he ‘intersection approach’, which articulates only those judgments that are *shared* implications of *all* of the possible alternative weights, can indeed take us quite a distance.” We claim, however, that the intersection approach takes us *too great a distance*. Given that we here restrict resources to goods (and not bads), the weights must be positive, and thus all wellbeing assessments will rank a resource bundle at least as high as one that it weakly dominates. The intersection approach thus entails Interpersonal Dominance, which requires that a bundle give at least as much advantage to one person as a weakly dominated bundle gives to another. That, as we saw, gave rise to the first impossibility result above.

So, the second way of extending the liberal interpersonal advantage relation, by appealing

to the wellbeing relations of individuals, seems unpromising.

A third way of extending the liberal interpersonal advantage relation is to appeal to some *standard external to individual wellbeing*. We shall consider two versions.

One version is to invoke a privileged *reference wellbeing relation*. This might be a morally specified relation (e.g., a “normatively ideal” wellbeing relation¹²) or, if wellbeing is cardinally measurable and interpersonally comparable, it might be the average of the existing wellbeing functions (“statistically normal”). (The latter approach presupposes cardinality and interpersonally comparable wellbeing but does not invoke such comparisons directly in assessments of advantage.) One bundle for *i* is assessed as at least as advantageous as a second bundle for *j* just in case the reference wellbeing relation judges the first bundle to be at least as valuable. On this method, if the reference wellbeing relation is complete, then so is the interpersonal advantage relation. One problem with this approach is justifying the specification of the reference wellbeing relation. More importantly, however, this approach violates both Liberal Intrapersonal Advantage and the weaker Minimal Liberal Intrapersonal Advantage (which states that it is possible that there exist at least two resource bundles, *x* and *y*, and two individuals, *i* and *j*, such that $(x,i) >_A (y,i)$ and $(y,j) >_A (x,j)$). Given that advantage is assessed on the basis of the same reference wellbeing relation for everyone, there is no room for such interpersonal variation.

Finally, an alternative version of the external standard approach is to invoke a privileged *reference bundle* to make interpersonal comparisons of advantage.¹³ For example, suppose that, on some specified set of scales, a bundle with one unit of each resource is the reference bundle. For any two people, if one gets the same wellbeing from his bundle as *m* units of the reference bundle, and the other gets the same wellbeing from her bundle as *n* units of the reference bundle,

then the first person's advantage is at least as great as the second just in case $m \geq n$. On this method, if intrapersonal wellbeing relations are complete, then so is the interpersonal advantage relation.

As with the reference wellbeing relation approach, one problem with this approach is justifying any particular reference bundle. More importantly, it violates Liberal Interpersonal Neutrality. For given set of permutationally isomorphic wellbeing relations, Liberal Interpersonal Neutrality requires that the reference bundle be the unit vector (one unit of each resource) *on the scales for which there is the permutational isomorphism*. The problem is that the unit vector on the permutational scale of one set of permutationally isomorphic wellbeing relations *is a different physical bundle* from the unit vector on the permutational scale of a set of permutationally isomorphic wellbeing relations that are not permutationally isomorphic to members of the first set. Hence, a single reference bundle will violate Liberal Interpersonal Neutrality for all but perhaps one class of permutationally isomorphic wellbeing relations. Moreover, if this approach is revised to allow different reference bundles for each class of permutationally isomorphic wellbeing relations, then it will fail to extend interpersonal comparisons of advantage beyond those internal to a permutational isomorphism class.

So, it's far from clear that there is some way for liberal resourcism to strengthen the interpersonal comparison of advantage beyond those generated by Liberal Interpersonal Dominance. First, the intuitive idea of liberal interpersonal neutrality seems to be exhausted by the requirement that, for individuals with permutationally isomorphic wellbeing relations, one resource bundle gives one person the same advantage as the permutational counterpart bundle give the other. Second, strengthening the liberal interpersonal advantage relation by being more sensitive to the wellbeing relations of the individuals does not work: appealing to interpersonal

comparison of wellbeing is ruled out by the very definition of resourcism, and appealing to universally shared rankings (the intersection approach, which involves no interpersonal comparisons of wellbeing) entails the problematic dominance conditions that are incompatible with Minimal Liberal Intrapersonal Advantage, Transitivity for Advantage, and Continuity for Advantage. Third, appealing to an externally standard is also unpromising: appealing to a privileged wellbeing relation violates Liberal Intrapersonal Advantage and the weaker Minimal Liberal Intrapersonal Advantage, and appealing to a privileged reference bundle violates Liberal Interpersonal Neutrality.

We therefore believe that a fundamental challenge facing liberal resourcism is to give a plausible account of how its theory of interpersonal advantage goes beyond that of Interpersonal Liberal Dominance.

7. Conclusion

Resourcist theories of advantage typically hold that one resource bundle gives *a given person* more advantage than a second bundle, if the former strictly dominates the latter. This *intrapersonal* condition is reasonably plausible and has been assumed throughout. Resourcist theories also typically hold that the *interpersonal* version of this condition (I^+D) holds. We have argued, however, that this is incompatible (assuming continuity and consistency) with the liberal view that the advantage ranking of two bundles can be different for two individuals (e.g., because their intrapersonal wellbeing rankings are different and the advantage is sensitive to differences among individual with respect to tradeoffs among resources). Liberal resourcist must therefore reject the standard dominance approach. This means that the standard Rawlsian primary good approach, the standard Dworkinian market value approach, and the standard Senian capabilities approach must be rejected.

This does not, however, mean that liberals must reject all appeals to resource dominance (and thus reject resourcism). Instead, Very Weak Interpersonal Dominance can be replaced with Ultra Weak Interpersonal Dominance. This condition requires that, for two individuals *with the same wellbeing relation*, if the resource bundle of one individual strictly dominates the resource bundle of the other, then the first individual has greater advantage. This weaker condition represents, we believe, a minimally plausible version of interpersonal liberal resourcism for advantage. We have further suggested that strengthening this condition to Liberal Interpersonal Dominance seems plausible for liberal resourcists: for two individuals, *i* and *j*, *with permutationally isomorphic wellbeing relations*, if, for a given set of scales for resources, *i*'s bundle weakly dominates the permutational counterpart for *i*, relative to *j*, of *j*'s bundle, then *i* gets at least as much advantage from her bundle as *j* gets from his. Isomorphic wellbeing relations make the same kinds of tradeoff among resources, but with different resources playing, perhaps, different roles (e.g., one relation may deem two apples as equally good as one orange and the other may deem two oranges equally good as one apple). Both of the above conditions are compatible with all the conditions imposed in this paper, and we have provided an example of an attractive liberal resourcist relation satisfying them and the other conditions. It is, however, an open question whether a liberal resourcist advantage relation can avoid the problem of radical incompleteness.

If the arguments of this paper are correct, then liberal resourcists must (1) give up the standard dominance approach and replace it with a *liberal* interpersonal dominance approach, and (2) develop an account of advantage that extends the assessment of advantage beyond the simple intrapersonal and interpersonal cases discussed above. If it cannot do this, it will fail to serve as a practical theory of justice that can guide social policies.¹⁴

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Appendix

We here provide the proof for:

The Possibility of Liberal Resourcism: There exists a resourcist advantage relation that satisfies Liberal Interpersonal Dominance (LI^+D), Liberal Intrapersonal Advantage (LIA), Continuity for Advantage (CA), and Transitivity for Advantage (TA).

The following advantage relation satisfies all the listed conditions:

- (1) *Intrapersonal advantage:* If resource bundle x gives an individual at least as much wellbeing as resource bundle y , then she has at least as much advantage with x as with y .
- (2) *Interpersonal advantage:* If i and j have permutationally isomorphic wellbeing relations, and on a given scale, resource bundle x weakly dominates i 's permutational counterpart, relative to j , of resource bundle y , then i with x has at least as much advantage as j with y .
- (3) *Transitive Closure:* If $(x,i) \geq_A (y,j)$ from 1 or 2, and $(y,j) \geq_A (z,k)$ from 1 or 2, then $(x,i) \geq_A (z,k)$.
- (4) *Silence elsewhere:* No other rankings of advantage are made.

The first two clauses respectively entail LIA and LI^+D , and the third clause entails TA .

We must, however, establish that the third clause is consistent with the first two. Suppose that $(x,i) \geq_A (y,j)$ by (1) or (2), and $(y,j) \geq_A (z,k)$ by (1) or (2). (3) then requires that $(x,i) \geq_A (z,k)$, but we need to show that this is consistent with (1) and (2). There are four possibilities:

- (1) $(x,i) \geq_A (y,j)$ by (1), and $(y,j) \geq_A (z,k)$ by (1): Thus, $i=j=k$, and the transitivity of intrapersonal wellbeing combined with (1) then entail that $(x,i) \geq_A (z,k)$, as required.

(2) $(x,i) \geq_A (y,j)$ by (2), and $(y,j) \geq_A (z,k)$ by (2): Thus, i and j have permutationally isomorphic wellbeing relations, as do j and k . The transitivity of having permutationally isomorphic wellbeing relations ensures that i and k also have permutationally isomorphic wellbeing relations. The transitivity of dominance of permutational intrapersonal counterparts and (2) then entail that $(x,i) \geq_A (z,k)$, as required.

(3) $(x,i) \geq_A (y,j)$ by (1), and $(y,j) \geq_A (z,k)$ by (2): Thus, $i=j$ and j 's wellbeing relation is permutationally isomorphic with that of k . Because identity is a permutational isomorphism, logic of the second case applies here as well.

(4) $(x,i) \geq_A (y,j)$ by (2), and $(y,j) \geq_A (z,k)$ by (1): Thus, i 's wellbeing relation is permutationally isomorphic with that of j , and $j=k$. Because identity is a permutational isomorphism, logic of the second case applies here as well.

Finally, to show that the defined relation satisfies CA, we need to consider three cases:

(5) $(x,i) >_A (y,j)$ by (1): Thus $i=j$, and the continuity for wellbeing combined with (1) entail that $(x',i) >_A (y',i)$, where x' and y' are as specified in CA.

(6) $(x,i) >_A (y,j)$ by (2): It follows straightforwardly that, for any x' and y' as specified in CA, x' dominates i 's permutational counterpart, relative to j , of y' , and (2) then entails $(x',i) >_A (y',j)$, as required.

(7) $(x,i) >_A (y,j)$ by (3): We here have to consider the four cases (1)-(4) in the first part of the proof. Case (1) is covered by (5) and cases 2-4 by (6).

¹ See Rawls (1971, e.g., p. 62), Dworkin (1981), Griffin (1986), Sen (1992), Kolm (1996, e.g., p. 218), Nussbaum (1999), Pogge (2002), and Anderson (2010) for further discussion of various

kinds of resources.

² We agree, of course, that, whatever the correct normative account of wellbeing, general empirical laws determine everyone's wellbeing in the same way, with the same factors, etc. (as urged by Kolm (1971, pp. 165-167; 1996; p. 164) and Harsanyi (1955, 1977, 1979)). This, however, does not establish that there is no variation among individuals in how tradeoffs among resources affect their wellbeing rankings of resources bundles. It only explains how such differences arise in terms of the extent to which they have been exposed to different factors.

³ Throughout, we focus on the resource bundle an individual possesses. Our results, however, also apply to theories of advantage that focus on a person's *opportunity* to consume resources (e.g., where the bundles are tradable), with suitable reformulations of the different conditions. See Pattanaik and Xu (2007) for an example of how to reformulate the conditions for opportunity sets. See also, the closely related Pattanaik and Xu (2012).

⁴ See, e.g., Rawls (1999), pp. 457-460.

⁵ A further reason to endorse MLI A is that justice will violate a standard Pareto efficiency condition, if advantage is detached from intrapersonal wellbeing.

⁶ Minimal Liberal Intrapersonal Advantage is the condition Pattanaik and Xu call "minimal relativism", and Weak Interpersonal Dominance is what they call "weak dominance". For related results in the formal social choice literature, see Gibbard (1979), Fleurbaey and Trannoy (2003), Brun and Tungodden (2004), and Fleurbaey (2007).

⁷ The conditionality on having the same wellbeing relation is similar in spirit to the Equal Wellbeing for Equal Utility condition in Fleurbaey (2008, p. 105). An important difference is that his condition is on the justice relation with respect to the distribution of wellbeing, whereas

our condition is on the interpersonal advantage relation.

⁸ Of course, if one resource has an upper limit (e.g., leisure time) and another does not (e.g., income), then no permutation of the quantities of the one to the other will be a permutational *isomorphism* (since they can't play the same role in wellbeing relations). That is as it should be.

⁹ For two wellbeing relations, each of which is never indifferent between distinct bundles, there is at most one permutational counterpart for a given bundle. Where each of the two wellbeing relations is indifferent between distinct bundles, there can be more than one permutational counterpart. In such cases, however, the other wellbeing relation must view the different counterparts of a given bundle as equally good, and that is all that is needed for our conditions. For simplicity, we write as if there is a unique counterpart.

¹⁰ This condition can be further weakened by making it conditional on the two wellbeing relations also being *cardinally* isomorphic permutations, if wellbeing is cardinally measurable (which does not require any interpersonal comparability of wellbeing). In addition to ordinal isomorphism, the cardinal version requires that the two wellbeing relations have isomorphic interval scales. For simplicity, we focus on the stronger condition.

¹¹ LI⁺D is an internally consistent condition in that, if it judges $(x,i) >_A (y,j)$, then it does not judge $(y,j) \geq_A (x,i)$. This is so, because the condition makes the first judgment only if x and y have permutationally isomorphic wellbeing relations, and x strongly dominates i 's counterpart bundle of (y,j) . That, however, ensures that (y,j) does not weakly dominate j 's counterpart bundle of (x,i) , and hence that the condition does not judge $(x,i) \geq_A (y,j)$.

¹² For example, the normatively specified reference wellbeing relation might be based solely on the impact of resources *for human dignity*. Although Nussbaum (2006, p. 166) rejects the

commensurability of different resources for human dignity, and thus rejects this approach, she agrees with the need to appeal to some normatively specified standard: “There must be a prior evaluation, deciding which [capabilities, or resources] are good, and, among the good, which are most central, most clearly involved in defining the minimum conditions for a life with human dignity.”

¹³ This account of advantage is loosely related to the egalitarian equivalent approaches to equality of resources. See Fleurbaey (2008), ch. 4.

¹⁴ For helpful comments, we thank Marc Fleurbaey, Joe Mazor, Serena Olsaretti, and Alex Voorhoeve, Yongsheng Xu, and two anonymous referees.