

**Social class, responsibility and the fair innings.\***

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**1. Introduction**

The “fair innings” concept [1] prioritises reducing health inequalities by placing lower weight on benefiting those who either have or who are expected to experience more health throughout their lifetimes. At the margin, more efficient treatments to those who are “better off” in health terms are sacrificed in order to provide less efficient treatments to those expected to experience less health. This paper aims to consider the possible role of a responsibility within the fair innings concept. It does so in response to suggestions that the fair innings concept would be improved were its focus redirected to promoting equality of opportunity in health rather than achieved (or expected) health [2].

In order to do this, we require a positive description of groups who do, and do not, take health-risking behaviours (including not taking health-preserving behaviours). In a strictly positive sense, this paper refers to groups who have been “health-preservers” and “health-riskers”. The label “responsible” is avoided as it could refer to either group depending on whether it refers to responsibility for health or responsibility for ill-health. These labels are also not intended to denote a normative judgement as to the behaviour of the respective parties, and particularly given concerns over whether individuals make some “irresponsible” decisions [3] freely.

The structure of the paper begins with Section 2 providing background. Section 3 outlines a social welfare function without responsibility, with Sections 3.1 to 3.3 then consider extensions to this framework that may allow responsibility to be addressed: 3.1 incorporates a general argument from the equality of opportunity literature; 3.2 considers what would happen if we were less sensitive to health differences as people risk their health more; and 3.3 considers the effect of adding an extra “responsibility” parameter to the social welfare function. Section 4 then summarises and discusses findings.

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## 2. Background

Health economics typically considers the role of efficiency (and occasionally equity) in the provision and demand for health care. However, health care accounts for only a small portion of what makes us healthy or unhealthy. The WHO defines these determinants as including income, social status, social support networks, education, the physical environment, genetics, and gender, as well as the access to and use of health services [4]. Of these, it is arguable that only gender and genetics are entirely out of a patient's control, suggesting that people have a degree of influence – and possibly responsibility - over their own health. The contrary argument suggests that whilst most of the determinants of health are partly within a patient's control, none are entirely within the patient's control, so that responsibility is an inappropriate criterion in resource allocation decisions. Inevitably, the normative status of responsibility as a criterion will be contentious but it provides, at the very least, a potential criterion in decision making, and one that features frequently in the public debate.

There appears to be a general reluctance to use responsibility in making resource allocation decisions within the UK. The NICE Citizen's Council, whose recommendations were accepted for use in determining provision for the English NHS, argued that it was rarely possible to determine whether an individual's condition was dependent on their own behaviour or not, and further that access to "NHS care should not depend on whether people 'deserved' it or not" [5]. However, where questionable behaviour continued and would be likely to render treatment non-cost effective, the Citizen's Council appears to allow a restriction of treatment. Thus, for NICE responsibility can matter, but only within a very narrow setting.

Several philosophical theories can be used to provide arguments in support of responsibility as a criterion, but many of these arguments are weak [6]. Buyx (2008) identifies luck-egalitarianism as the most promising justification. This focuses on the equality of opportunity in health, and refers to a range of theories that typically distinguish between factors that determine the exogenous circumstances facing an individual and those that an individual chooses freely [7-10]. Here, individuals have a valid claim to resources to correct inequalities resulting from things outside their scope of influence, but not from those things that they can control.

Rosa Dias and Jones [2] suggest that advances in (luck-) egalitarian theory and particularly contributions by Roemer [10-13] could be used to re-motivate the fair innings. Within Roemer's theory issues such as gender and social class that lie

beyond an individual's control (i.e. as *circumstances*) are distinguished from things within an individual's control (i.e. as *effort*). An analysis of inequality in this setting produces a set of distributions for groups defined by circumstances, where these distributions are ordered in terms of the degree of effort taken. Evidence of difference, say, between the health outcomes of the median-effort individual in Social Class I and the median-effort individual in Social Class V are evidence of an inequity in health. Only where the cumulative distributions are equal by type could we say that equality of opportunity is achieved.

This type of analysis is quite different in aim to William's fair innings, where the aim was to not to discuss the existence of health inequalities (for health disparities are known to exist) but instead to explore trade-offs between furthering efficiency and advancing equity. This exploration took place within a social welfare framework (SWF) that incorporates explicitly normative views rather than the more positive analysis within Roemer's version of luck-egalitarianism.

### 3. The social welfare function

Social welfare functions are used to capture normative views over the outcomes enjoyed by different groups or individuals. For simplicity, this paper uses the constant elasticity of substitution SWF for a three group case.

$$W = \left( \frac{1}{3} \cdot v_1^{-r} + \frac{1}{3} \cdot v_2^{-r} + \frac{1}{3} \cdot v_3^{-r} \right)^{-1/r}, \quad r \geq -1, r \neq 0$$

Here,  $W$  is the level of social welfare, and  $v_i$  an outcome measure reflecting lifetime health for three homogenous, equally sized groups. (For the purposes of this section, this can be thought of as the quality adjusted life expectancy (QALE).) The  $r$  parameter defines the degree to which individuals are sensitive to differences between groups. At  $r = -1$  the indifference curves are straight lines indicating the total amount of health received by all groups. In this sum-ranking SWF ( $W = \frac{1}{3} \cdot v_1 + \frac{1}{3} \cdot v_2 + \frac{1}{3} \cdot v_3$ ), social preferences coincide with the recommendations of standard cost-effectiveness analysis. As  $r$  increases, society has an increasingly strong preference towards reducing health inequalities (holding other factors equal): where  $r$  approaches zero, the SWF becomes a standard Cobb-Douglas form SWF ( $W = v_1^{\frac{1}{3}} v_2^{\frac{1}{3}} v_3^{\frac{1}{3}}$ ); where  $r$  approaches infinity, social welfare is assessed at the level of the worst off group ( $W = \min[v_1, v_2, v_3]$ ).

Within the social welfare function, the marginal rate of social substitution (MRSS) between any two groups is a function of the relative health achieved by those two groups. For example, the MRSS between Groups  $i$  and  $j$  is given by:

$$\frac{\partial v_i}{\partial v_j} = - \left( \frac{v_i}{v_j} \right)^{1+r}$$

Note that the health of the third group does not feature in the trade-off between these two groups. Where society has some preference for more equal health ( $r > -1$ ), we know that  $1+r$  is positive and so the ratio in which we are willing to give up the health of Group  $i$  over Group  $j$  increases as the health of Group  $i$  ( $v_i$ ) increases. Only where the health of the two groups is equal will a marginal improvement to the health of either group be deemed to be of equal worth. For all other cases, the SWF favours the group with less health.

Given that the basic SWF has a single parameter, there are few options for incorporating responsibility without increasing complexity.

In what follows,  $\varphi_i$  is used to reflect the degree of responsibility of those in Group  $i$  for any ill-health suffered with  $0 \leq \varphi_i \leq 1$ :  $\varphi_i=0$  denotes complete non-responsibility for health losses, with higher numbers denoting increased irresponsibility. At  $\varphi_i=1$ , any ill-health is assumed to be purely due to personal choice. Each case uses a standard example, where Group 1 is a group made up of higher social classes, and Groups 2 and 3 are lower social classes receiving less lifetime health. Of these latter groups, those in Group 2 are deemed health-preservers, whilst those in Group 3 are deemed health-riskers.

In the options explored here, we allow responsibility to (a) modify what is measured as the health outcome, (b) affect the sensitivity to differences in lifetime health, and (c) modify the fair innings level of health. Whilst these approaches are not an exhaustive list of possible approaches, they allow for some specific generalisations of the SWF.

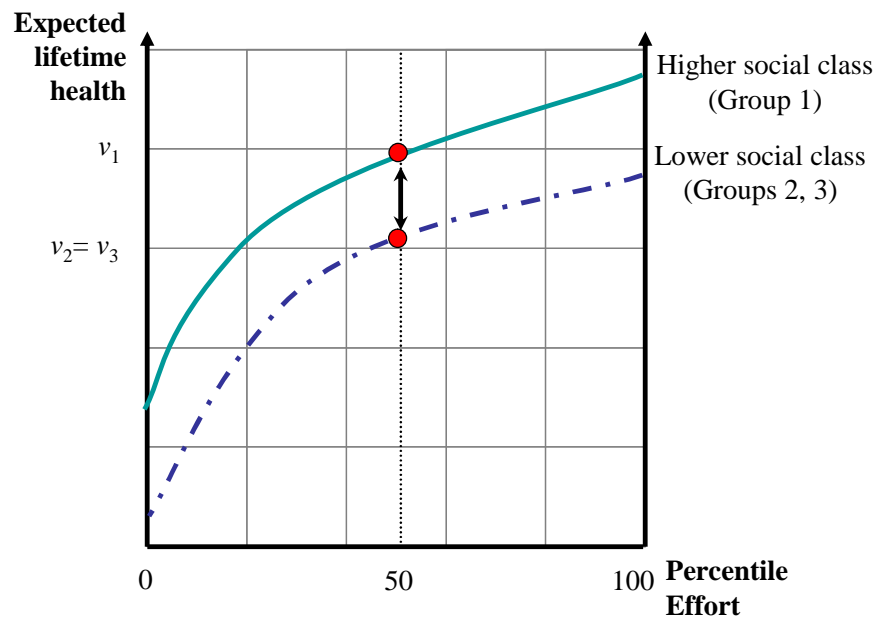
### *3.1 Modifications to 'lifetime health'*

The simplest SWF considered for responsibility leaves the SWF functional form unchanged but modifies its argument. In the standard SWF, the argument refers to the achieved lifetime health of individuals of homogeneous groups. In a modified social

welfare function, the argument could instead refer to health opportunities within groups defined by life circumstances.

Such an approach is consistent with econometric research into health inequalities. The type-dependent distributions produced in such an analysis can be used to show the health of those taking different levels of effort. These can be compared by considering the expected lifetime health of the median-effort person across groups. Within the example used here, Group 1 is of higher social class than Groups 2 and 3, who are similar except in the degree of effort taken. Figure 1 shows sample distributions of this type. Here  $v_1$ ,  $v_2$  and  $v_3$  are defined according to the median health of their appropriate type, with  $v_2 = v_3$  as Groups 2 and 3 both belong to the same general social class group. In the diagram, the gap in health  $v_1 - v_2$  is evidence of inequity of opportunity, and reflects an opportunity-adjusted deficit in expected health due to life circumstances.

**Figure 1: Equality of opportunity and health deficits**



Whilst Group 2 and 3 achieve different levels of health the modified SWF treats them as the same. This modification to the SWF would have no effect on the social priority of treating the median-effort individual but would affect the priority given to all others. Those who take less effort than the median individual have higher opportunity-adjusted health than they actually achieve – so that an opportunity-based social trade-off will give them less priority than an achievement-based trade-off. In contrast, those who take more effort than the median individual have a lower

opportunity-adjusted health than they achieve, so that they receive more priority than would be suggested by their own health achievement.

Whilst Figure 1 presents the percentile effort, this does not mean that the median effort in the high and low social class groups are the same, as socioeconomic factors will typically mean that those in the lower social class take fewer health-promoting behaviours [14-16]. Within this framework, it is recognised that people taking less absolute effort do so partly for social reasons: this method assumes that any difference between median-efforts is due to social factors and hence “circumstances” rather than “effort”.

Within the account given here, if the fair innings argument was modified to emphasise equality of opportunity, then those who gain less advantage through their life circumstances retain priority over those who are more advantaged, regardless of how “responsible” that particular person is. Further, *within* a group of people facing similar life circumstances, no priority would be given to treating those who are not responsible for their illness - rather equality of opportunity operates to prevent a priority that would otherwise accrue to those who have behaved less responsibly and suffered adverse health as a result.

There are some weaknesses in this type of modified analysis. Firstly, this modification is based on a normative principle employed in the econometric literature rather than societal preferences – as such, it is a restriction on societal preferences rather than expansion of the SWF. Secondly, the econometric assumption used here is that outcomes can be explained by effort within a class. Since large datasets cannot include detailed genetic breakdowns as variables, genetics cannot be easily included as circumstances, and hence any account of circumstances must be incomplete. This may mean that people who are less fortunate in their genetic predispositions to illness will be treated as identical to a median-effort individual who is likely to suffer fewer problems. Finally, such analysis requires broad assumptions over what constitutes “effort”, and those least fortunate in health terms may also be restricted in the effort that they would be able to take.

### *3.2 Responsibility and the inequality aversion parameter*

Algebraically, the simplest method of incorporating responsibility involves making the inequality aversion parameter a function of responsibility. Here, the more a group

risks their health the less sensitive we are to differences between their health and the health of other groups (a lower  $r$ ). The SWF here becomes:

$$W = \left( \frac{1}{3} \cdot v_1^{-r} + \frac{1}{3} \cdot v_2^{-r} + \frac{1}{3} v_3^{-r} \right)^{-1/r}, \quad r \geq -1, r \neq 0$$

where  $r = f(\varphi_1, \varphi_2, \varphi_3)$

The formula for MRSS remains as before:

$$\frac{\partial v_i}{\partial v_j} = - \left( \frac{v_i}{v_j} \right)^{1+r}$$

Recall that those in Group 3 are health-riskers, whilst those in Group 2 had not. If those in Group 3 receive less lifetime health than those in Group 2, then they receive greater priority in the absence of any responsibility weight. With a responsibility weight, society may be less concerned about differences in achieved health.

If the inequality aversion parameter decreases with responsibility ( $\frac{\partial f}{\partial \varphi_i} < 0$ ) then we would find less prominence given to obtaining equal utilities as a group is deemed risks their health by a greater degree. There are two problems with this proposal however.

As they are in a higher social class, we expect that Group 1 receives the most health, followed by Group 2, and then Group 3. We know that the MRSS for Groups 1 and 2 against Group 3 are equal to:

$$\frac{\partial v_1}{\partial v_3} = - \left( \frac{v_1}{v_3} \right)^{1+r} \quad \text{and} \quad \frac{\partial v_2}{\partial v_3} = - \left( \frac{v_2}{v_3} \right)^{1+r}$$

In these cases  $r$  is lower because those in Group 3 are deemed health-riskers.

However, here the trade-off between Groups 1 and 2 is:

$$\frac{\partial v_1}{\partial v_2} = - \frac{\partial v_1 / \partial v_3}{\partial v_2 / \partial v_3} = - \left( \frac{v_1}{v_3} \right)^{1+r} / \left( \frac{v_2}{v_3} \right)^{1+r} = \left( \frac{v_1}{v_2} \right)^{1+r}$$

So, we have the same sensitivity to inequalities in the case where both groups are health-preservers as in the cases where one group is responsible. In this case, society is less willing to help those receiving less health due to the circumstance of social class even where they are health-preservers. Those in Group 2 are given less weight because those in Group 3 are health-riskers.

A more troubling example occurs if the higher socioeconomic Group 1 was determined to be responsible for their ill-health. In this case, we would also expect the inequality aversion parameter to fall, so that society again gives less priority to equality in the distribution of health outcomes. But here, this would mean that society gives less weight to benefiting the health-preserving Group 2 over the health-risking Group 1.

Under this proposal a “blameless” group with less health suffers due to the “irresponsible” behaviour of others, whether they achieve more or less health than them. Whilst algebraically simple, decreasing inequality aversion due to responsibility does not appear to be a feasible solution.

### 3.3 Responsibility and the fair innings level

The third option to incorporate responsibility into the fair innings argument involves adding a parameter to the social welfare function. This parameter gives weights to the contributions of each group to overall social welfare. Each of these weights is a function of the responsibility of all three groups.

$$W = (\alpha_1 \cdot v_1^{-r} + \alpha_2 \cdot v_2^{-r} + \alpha_3 \cdot v_3^{-r})^{-1/r}, \quad r \geq -1, r \neq 0$$

$$\alpha_i = f_i(\varphi_1, \varphi_2, \varphi_3), \quad \sum_i \alpha_i = 1$$

Here, the higher is the  $\alpha_i$  weight associated with a group, the more strongly their health can contribute to social welfare, and so the more priority they receive. To see this, consider the marginal rate of social substitution between any two groups:

$$\frac{\partial v_i}{\partial v_j} = - \left( \frac{\alpha_j}{\alpha_i} \right) \left( \frac{v_i}{v_j} \right)^{1+r} \quad (1)$$

Here,  $\frac{\partial v_i}{\partial v_j}$  gives a social-welfare preserving trade-off between the health of Groups  $i$  and  $j$  for marginal changes in health, where lower values suggest a greater priority to Group  $i$ . Obviously, as either  $\alpha_i$  rises or  $\alpha_j$  falls the priority given to Group  $i$  increases: we would expect  $\alpha_i$  to be a decreasing function of own responsibility ( $\varphi_i$ ).<sup>1</sup> In this case, the impact of responsibility is to change the previous marginal rate of

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<sup>1</sup> The alpha weight is also likely to be an increasing function of the responsibility of any other group, since  $\alpha_j$  falls if Group  $j$  becomes less responsible ( $i \neq j$ ), and the restriction that alpha parameters sum to one.



substitution at all points. In essence, responsibility “tilts” the slope of the iso-welfare curves through every point.

Responsibility has an important implication for the fair innings. In the standard case where responsibility is ignored, each group receives a fair innings at a point where society is indifferent between aiding any group by a marginal health improvement. For this to occur, each must achieve the same level of lifetime health – that is, the fair innings. We suppose that Group 2, as a health-preserving group, receives a full fair innings ( $v_2^*$ ). Setting a fair innings for the other groups depends on finding a point where Group 2 receives their fair innings and the other groups receive equal priority for a marginal improvement in health: that is, the marginal rate of social substitution equals one. Solving for this in (1), we find:

$$v_i^* = v_2^* \left( \frac{\alpha_i}{\alpha_2} \right)^{\frac{1}{1+r}}$$

Within our example Group 3 has risked their health, so that  $\alpha_3 < \alpha_2$  and  $\frac{\alpha_3}{\alpha_2} < 1$ . The fair innings for Group 3 must therefore be lower than the fair innings for Group 2; the more Group 3 is deemed to have risked their health, and the smaller is  $\frac{\alpha_3}{\alpha_2}$ , the lower their fair innings.

More generally, the ratio of any two fair innings can be represented as function of the ratio of alpha parameters:

$$\frac{v_j^*}{v_i^*} = \left( \frac{\alpha_j}{\alpha_i} \right)^{\frac{1}{1+r}}$$

So now, we can replace the ratio of alpha parameters in the MRSS:

$$\frac{\partial v_i}{\partial v_j} = - \left( \frac{\alpha_j}{\alpha_i} \right) \left( \frac{v_i}{v_j} \right)^{1+r} = - \left( \frac{v_j^*}{v_i^*} \right)^{1+r} \left( \frac{v_i}{v_j} \right)^{1+r} = \left( \frac{v_i/v_i^*}{v_j/v_j^*} \right)^{1+r}$$

So the impact of incorporating responsibility is to change the interpretation of what the SWF measures – rather than trading off the health achievements of two groups, the SWF measures the relative success of both groups in reaching their fair innings. When responsibility is incorporated, these fair innings quantities may change.

This functional form is used in a forthcoming paper in the JHE [15], although not with this interpretation. In a two group model, the modal response in Dolan and Tsuchiya (2008) suggests  $\alpha_i=0.31$  for a group that “does not take care of itself”, as against

$\alpha_j=0.69$  for a group that does, alongside a modal  $r$  estimate of 1.96. If the fair innings to a “group that takes care of itself” is 70 years, then their findings suggest that the fair innings to a health-risker is reduced to 53 years:

$$v_i^* = 70 \left( \frac{0.31}{0.69} \right)^{\frac{1}{2.96}} = 53.4 \text{ years}$$

However, their study used a PTO question in which one group would die as a result of being denied immediate treatment, gave responsibility as the only factor provided on which the groups differed. It also used wording in which no other factor was suggested as a candidate for disease. For this reason, whilst the Dolan and Tsuchiya paper establishes that it is possible to find values within this functional form, but the values almost certainly overestimate the societal willingness to “punish” those who engage in health-risking behaviour.

Subsequently, the Social QALY project [16] used the same basic functional form but asked questions that described a health-risking scenario where people:

experience an illness that is caused by a combination of factors including poverty, genetics, pollution, and the patients’ lifestyles.

Whilst the health-preserving scenario (excluding a third possibility where illness was caused by the NHS) was described where people:

experience an illness that is caused by a combination of factors including poverty, genetics and pollution, but is not caused by patients’ lifestyles or by NHS error.

This study used a slightly different measure of lifetime health than the QALY. The adult healthy year equivalent (or AHYE) incorporates societal preferences for the health experienced at different stages in life (nearly double the weight to health experienced during childhood) and within year severity of health state (an insignificant but positive weight to treating more severe states). For compatibility, one year spent in full health as an adult generates one adult AHYE, so that here  $1 \text{ QALY} = 1 \text{ AHYE}$ .<sup>2</sup>

The Social QALY study found that responsibility does tilt the iso-welfare curves but that this had a relatively small impact. In two questions, the tilt reduced the importance of treating the group who partially caused their illness by 8.3% (95%CI:

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<sup>2</sup> More details on this portion of the Social QALY project can be found in [discussion paper]

0.8%, 15.8%) or 4.0% (95% CI: -0.1%, 8.1%).<sup>3</sup> In alpha terms,  $\alpha_i=0.48$  (or 0.49) for the group whose illness is partially caused by lifestyle, as against  $\alpha_j=0.52$  (or 0.51) for a group whose illness is not related to lifestyle.

Given the framework used in the Social QALY study, we have to calculate weights in terms of AHYEs in order to find a fair innings. Overall, 70 years of full health provides 84.9 AHYEs given the additional weight to childhood health.<sup>4</sup> The study found an  $r$  value of 6.32 and combining these with the alpha figures above, we find that the fair innings (in AHYE terms) for the health-risking group is only slightly reduced – at around 99% of the full fair innings in both cases.

Table 1 below gives the fair innings estimates in QALY terms, assuming full health throughout ones lifetime until death. These numbers will increase for those who experience poor health during childhood; a group experiencing ill health at 0.250 up to the age of 10 would have to receive 82.9 years of life to achieve the same AHYEs as a person living to 70 in full health. For those experiencing periods of severe ill health, the story is somewhat more complex.

Table 1: Fair innings periods spent in full health (generic)

Full fair innings	Reduced fair innings (to those whose lifestyles contribute to disease)	
	Estimate 1	Estimate 2
70 years	69 years	70 years
75 years	73.9 years	74.5 years
80 years	78.9 years	79.5 years
85 years	83.8 years	84.4 years
90 years	88.8 years	89.4 years

For men, life expectancy at birth (for those born in 2002-2005) differs by 7.3 years between Social Class I and Social Class V, and by 3.1 years between Social Classes IV and V[17]. For women, these figures are 7.0 years and 1.8 years. Those in Social Class I have life expectancies of 80.0 years for men and 85.1 years for women, and so we might reasonably take 80 years (men) and 85 years (women) as reasonable fair innings marks. If we assumed that Social Class I was health-preserving for illness but all other Social Classes were health-risking, then those in Social Class I achieve their

<sup>3</sup> The study observed an additional ‘tilt’ of approximately 15% when specifically considering obesity, but these figures are not easily translated into alpha values.

<sup>4</sup> The weight given to full health as a child is 1.828. So, 70 years in full health is equal to:  
 $1.828 \times 18 + 1.000 \times (70 - 18) = 84.9$  AHYEs.

fair innings. Of the ten other groups, only men in Social Class II (life expectancy 79.4 years) would make their revised fair innings target of 78.9 years; all other groups would receive at least some priority over Social Class I.

This finding is strengthened when we consider two factors that would increase the inequality highlighted above. Firstly, some people in Social Class I do take health-risking behaviours, and some people in other the social classes do not – suggesting both that that the fair innings for Social Class I may be slightly too high and that for the other classes too low. Secondly, were we to incorporate morbidity into this analysis, we might expect the gap between the social classes to grow.

As such, whilst there is potential for societal preferences to ‘punish’ those held to be responsible for their own illnesses, and whilst preferences do appear to reduce the fair innings levels, they probably do not do so by very much. The dominant concern in most cases appears to be that those who have taken risky behaviour have fallen ill, and not that they have brought illness upon themselves.

#### **4. Summary**

This paper has considered the ways that we may be able to incorporate notions of responsibility into resource allocation decisions via the concept of the fair innings. Three approaches were considered, with one discarded.

The volumes of econometric research undertaken on the determinants of health and health inequality provide an essential focus for decision makers on the scope and size of social inequities, where those in lower socioeconomic groups (amongst others) receive less health for similar effort (according to the distribution of effort they fall in). Using such literature, it should be possible to redefine the social welfare function so that it refers to the expected median-effort outcomes for a group facing similar circumstances. This approach would lead to greater priority being placed on those who suffer these adverse circumstances. This framework has the advantage of simplicity but does not actively engage with societal preferences, since at heart it is based on a normative judgement of what society ought to be interested in.

The alternative approach is to investigate these societal preferences to see what they can say about how responsibility affects the fair innings due to different groups. At present, our understanding of societal preferences – in terms of the fair innings argument and responsibility – is still relatively poor. There is relatively little literature

in this area, and the results found differ markedly – either responsibility drastically reduces the fair innings or leaves it largely untouched. On balance, the latter of the two conclusions is probably more likely.

Were responsibility (in comparison to inequality) to be of relatively little importance, we must ask whether we should want to incorporate responsibility into the general fair innings framework. Is responsibility best left alone? A focus on the equality of opportunity certainly does not *require* a role for responsibility in the way argued by Rosa Dias and Jones [2]. Daniels [18] notably distinguishes between the normal opportunity range, as the “array of life plans persons can reasonably choose in a given society”, and the effective opportunity a person faces conditional on their own circumstances, their choices, and luck. He advocates that the aim of health policy ought to be to protect (where feasible) fair shares of the normal opportunity range and to prevent job discrimination, not the equalisation of a modified notion of opportunities. Rather than viewing “irresponsible” behaviour as necessarily irrational or due to incomplete information, Daniels suggests that (p. 198):

Many health-threatening behaviours – smoking or not wearing seat belts – are not themselves evidence of diminished capacity for rational decision making. Many such behaviours are associated with desired natural effects – the relaxation of smoking, weight loss – that individuals may value differently. To intervene in such behaviour requires independent evidence that the behaviour is the result of diminished capacity to make decisions or is in some specifiable way involuntary.

For Daniels, the concern is not to punish those deemed to have taken risks with their health but instead to identify the specific cases in which people may not be choosing in an entirely free and adequate nature.

Whether we as health economists choose to incorporate responsibility into the fair innings or not we should be aware of the dangers of misunderstanding why individuals act in ways that appear damaging or irrational. Where such cases are found, it may be better to investigate with other disciplines why people behave in the way they do. Where people choose in what appears to be a perverse way even after information is provided, there may be scope to tailor interventions to capture missed opportunities for health. This type of approach may be a more human response than seeking to identify (and potentially punish) behaviour judged normatively irresponsible.

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