Measuring people's preferences regarding ageism in health: some methodological issues and some fresh evidence

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Abstract

In this paper, we outline the three main concepts of 'ageism'; health maximisation ageism, productivity ageism, and fair innings ageism. We provide a methodological overview of the existing empirical literature on people's preferences regarding age and classify these studies according to the types of questions that have been asked. We consider some of the methodological issues involved in eliciting preferences regarding ageism and propose using a fixed duration of benefit rather than, as some studies have done, a benefit that lasts for a full lifetime. Informed by this discussion, we present the results from our own empirical study, carried out in the UK, which combines qualitative and quantitative methods to explore the reasons people have for choosing one age over another. In so doing, we are able to consider the extent to which respondents might bring extraneous factors to bear on their responses and/or disregard relevant information (such as that relating to the fixed nature of the benefit). The results suggest that people are broadly in favour of giving priority to younger over older people, based on arguments relating to both productivity ageism and fair innings ageism. However, respondents appear to assume that a benefit would last for a full lifetime (even if they are told to assume a fixed benefit), unless they are asked to consider a 'full-life' benefit first. This particular framing effect has important implications for preference elicitation studies, suggesting that if you want people to answer the question you have in mind, first ask them the question you think they may have in mind.

Introduction

Deciding the principles upon which health care should be distributed has become a crucial policy issue for most publicly funded health care systems. There are many possible characteristics of the recipients of health care (including their age, sex, and degree of responsibility for their illness) that could be taken into account when setting priorities. A number of empirical studies have been undertaken to determine the extent to which members of the general public wish to take account of such characteristics when setting priorities (Olsen, Dolan, Richardson, & Menzel, 2001). One of the most hotly debated characteristics, and the focus of this paper, is the *age* of the patient (Evans, 1997; Williams, 1997a).

In this paper, we provide a methodological review of the existing empirical literature on people's preferences regarding ageism.[1] We classify these studies according to the types of questions that have been asked and then

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[1] In lay language, this term may suggest unacceptable discrimination on the basis of age, but, in this paper, the term is neutral with regard to the legal, ethical and political appropriateness of differential treatment by age.

consider some of the issues that are involved in trying to provide quantitative information about people's preferences concerning age. In particular, we note that there is a lack of any qualitative element in the studies and, as such, we do not really know what respondents were thinking about when their preferences were elicited. Informed by the review, we present the results from our own empirical study, which was designed to uncover people's reasoning behind their preferences over age.

Concepts of ageism

According to Tsuchiya (1999), there are three main types of ageism. In this paper, the first type of ageism will be referred to as "health maximisation ageism" (HMA).[2] This is compatible with the assumption that each unit of health—expressed, for example, in terms of quality-adjusted life-years (QALYs)—is of equal value, irrespective of who receives those QALYs. Fig. 1a depicts the case where the relative value given to a year of life at different ages is constant. Since all ages are given equal weights, the relative value is at 1.0. Therefore, ceteris paribus, HMA will give priority to a younger person over an older one since the former will usually experience any health gains for longer. The central concept in HMA, then, is not age per se; rather it is life expectancy, which will depend heavily (but not exclusively) on current age.

The second type of ageism is "productivity ageism" (PA). This gives priority to young adults because they are more productive—in a wide sense rather than in a narrow market-oriented way—at home and in society. A given health gain at different ages will then be valued differently according to the expected level of productivity at each age. The value given to a year of life at different ages will typically start at a relatively low value, increase rapidly to young adulthood, and then decrease more slowly towards old age (see Fig. 1b). The age weights used in the calculation of the Burden of Disease follow this pattern (Murray, 1996).[3]

The third type of ageism will be referred to as "fair innings ageism" (FIA).[4] This looks at people's lifetime health, which could be quantified as the number of QALYs people can expect to have over their lifetime. In

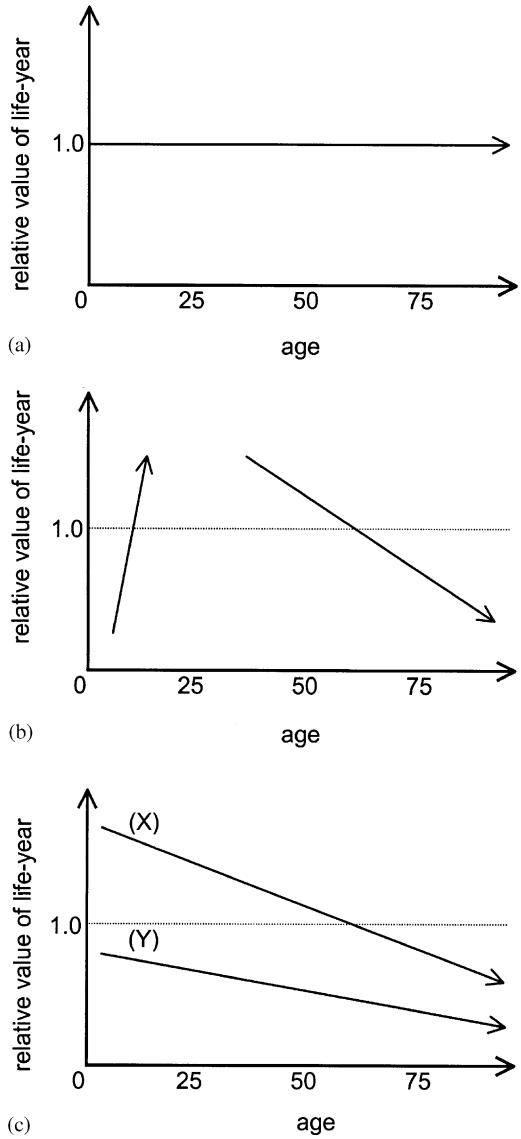


Fig. 1. (a) Health maximisation ageism; (b) productivity ageism; (c) fair innings ageism.

its extreme form, FIA will set some discontinuous threshold or cut-off corresponding to the fair innings, beyond which people will be denied health care. In its less extreme form, the fair innings represents the point at which people will be given a relative weight of one in the priority-setting calculus. If an individual has poorer (better) lifetime health prospects than the fair innings, they will be given relative weights larger (smaller) than one. This form of FIA will give priority to a younger person over an older one because, ceteris paribus, the former has a smaller number of expected lifetime QALYs than the latter (Williams, 1997b). FIA will

[2] This has sometimes been referred to as 'utilitarian ageism' (Nord, Richardson, Stret, Kuhse, & Singer, 1996) but this would imply the maximisation of utility rather than health.

[3] This age weighting function starts at zero, reaches a peak at age 25 with a relative weight of 1.5, and then falls but never reaches a relative weight of 0.0. These weights have no meaning in any absolute sense but simply reflect the relative weight at one age as compared to another.

[4] Nord et al. (1996) refer to a similar concept, and call it 'egalitarian ageism'. However, this is rather imprecise since there are many types of egalitarianism, and it is not clear from this name what should be equalised across people.

Table 1
Classification of empirical studies of preferences regarding ageism

Quantification the benefit	Unquantified	Quantified in terms of number of people	Quantified in terms of the benefit
Life saving, for remaining life	Charny, Lewis, and Farrow (1989) Nord, Richardson, Street, Kuhse, and Singer (1995) Nord et al. (1996)	Cropper, Aydede, and Portney (1994) Johannesson and Johansson (1997)	
Life saving, for fixed period	*This study*	Nord et al. (1996) Ratcliffe (2000)	Rodríguez and Pinto (2000) Ratcliffe (2000)
Health improvement, for remaining life	Nord et al. (1995)		
Health improvement, for fixed period		Nord et al. (1996)	Busschbach, Hessings, and de Charro (1993) Tsuchiya (2001)

also give higher relative value to a person from a disadvantaged background than to a person from a more advantaged background, because, ceteris paribus, the former has less expected lifetime QALYs than the latter. Fig. 1c illustrates two cases: line X is for those who have a lower expected number of lifetime QALYs than the fair innings when they are young (so that they are given a relative weight greater than one up until the point at which they are expected to achieve the fair innings); and line Y is for those whose odds of achieving the fair innings is always greater than one.

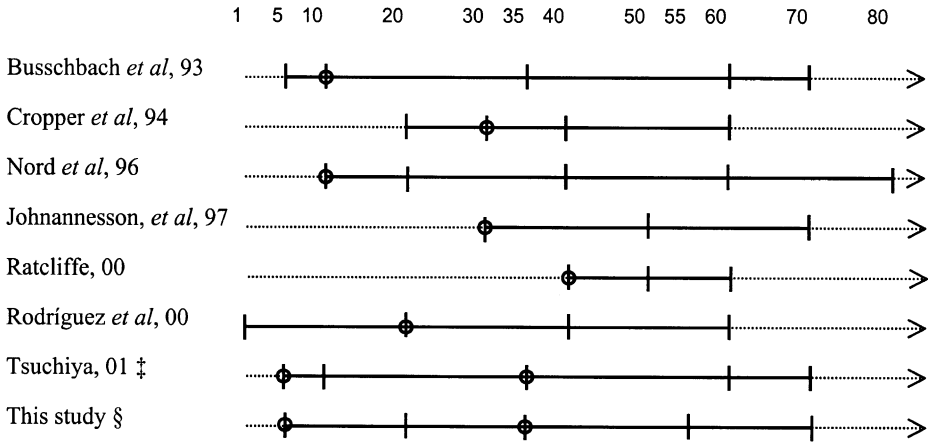
Studies of ageism

There have been several attempts to study people's preferences about age weighting in health (for a review of some of these, see Tsuchiya, 1999). The usual approach involves asking respondents which of two patients or groups of different ages should be given priority over the other when it is not possible to treat both at once. Table 1 classifies these studies according to the types of questions that have been asked. Some studies appear in more than one cell because they have used more than one kind of question. Whether and how the studies have tried to quantify the extent to which one patient or group is preferred over the other is shown in the columns of the table. Some studies have elicited only ordinal preferences, whilst those that have attempted to quantify preferences have done so in three ways—by varying the number of people of treated, by changing the size of the health benefits that each patient or group can expect, or by varying both simultaneously.

The rows of Table 1 represent the different ways in which health benefits have been expressed. There are two elements for consideration. The first is whether health benefits are presented as life saving or as improvements in health. If the basic assumption of the QALY concept holds, a given health gain will have the same social value regardless of how that health gain is comprised, so it will not matter whether preferences over different ages have been quantified through trade-offs in terms of length or quality of life. However, to our knowledge, no study has presented benefits in terms of life saving *and* health improvement, so it is unclear whether this basic assumption of the QALY holds in this context. The second element for consideration is whether benefits are presented as lasting for the rest of the recipients' lives or for a shorter fixed period. If the objective of quantifying ageist preferences is to design age weights for use in cost-per-QALY studies, then it will be more helpful to generate a set of weights reflecting the relative values of a single year of life at different ages, rather than the relative values of various durations starting at different ages.

Fig. 2 shows the ages used in those studies that have attempted to quantify preferences. While some studies cover a wide age range, starting from early childhood to advanced age, other studies only cover middle age onwards. When the implied relative values of a healthy year at different ages are compared, there are no studies where respondents as a whole supported indifference across the ages, and in all studies the relative value is observed to decline after middle age.[5] Therefore, in terms of the concepts of ageism, the results from these studies do not support simple HMA but instead provide some support for PA and FIA, depending on whether the relative value function increases before decreasing or

[5] These results have been found to be largely independent of the respondent's own age and other background characteristics.



† The ages used in each empirical study are indicated along the horizontal axes.
The bold part indicates the range of the ages used.
The circle indicates the observed age where relative value peaked.
‡ Peak age depended on respondent age group: older respondents chose 35 as peak.
§ Peak age depended on question format: see text for details.

Fig. 2. The ages used in the empirical studies. The ages used in each empirical study are indicated along the horizontal axes. The bold part indicates the range of the ages used. The circle indicates the observed age where relative value peaked. ‡ Peak age depended on respondent age group: older respondents chose 35 as peak. § Peak age depended on question format: see text for details.

whether it decreases monotonically with age. It is difficult to distinguish between PA and FIA from the studies to date since few have looked at the relative values given to younger people and, amongst those that have, the evidence seems mixed.

An additional difficulty is that, even when the study is designed to elicit PA-related preferences by controlling for FIA, it is unclear to what extent respondents have been able to separate out the two concepts of ageism when generating their responses (see Tsuchiya, 2001). This is a consequence of the wider issue that very few studies have asked respondents for the reasons behind their responses (but see Tsuchiya (2001) for some discussion of this). Both qualitative and quantitative methods are required to gain a comprehensive understanding of the complexity of people's preferences about age weighting, and so our empirical study was designed to discriminate between the different concepts of ageism and to explore the reasons people have for choosing one age over another. Moreover, there is now plenty of evidence to suggest that people's preferences are influenced by a range of framing effects (for a review, see Rabin, 1998) and so, by looking at the reasons for people's responses, we might shed some light on what factor(s) influenced those responses. In particular, it has been shown that people sometimes edit out of information common to all alternatives (Payne & Bettman, 1992), which, in this study, might result in them disregarding the size of the benefit afforded to each age group.

Overall study design

In order to distinguish between efficiency or productivity reasons (i.e. younger people getting more out of given health benefits) and equity or fair innings reasons (i.e. younger people having smaller expected lifetime health), the main set of interviews were preceded by preliminary interviews (using a different group of respondents) that gathered qualitative data on the reasons behind people's preferences. Further, the main set of interviews were carried out in two rounds (with two different groups of respondents). This allowed lessons learnt from round one to be fed into the design of round two. Respondents in all phases of the study were presented with five ages—5-year olds, 20-year olds, 35-year olds, 55-year olds and 70-year olds—chosen to represent five different stages in the life cycle. The main task was to rank order these age groups.

Methodological issues

Table 1 suggests that there are a number of considerations when deciding upon which question format to use. For the purposes of this study, which aims to discriminate between different concepts of ageism rather than to quantify those preferences, we can simply ask people to choose between two groups of equal numbers of people differing initially only in age (i.e. the first column in Table 1). Now consider the rows in Table 1. There are difficulties with expressing benefits

over the remaining lifetime (i.e. the first and third rows). The weights for individual years of life at different ages will be a function of the life expectancy of the recipients as perceived by the respondent and the rate at which the respondent discounts health benefits. Since neither of these can be observed directly, it makes more sense to use a fixed and shorter duration of benefit; that is, to use the question formats in the second and fourth rows of Table 1. We chose 5 years as the fixed duration of benefit, which should be long enough to be considered as a meaningful benefit by most respondents. The use of a fixed duration also means that, in principle, we can control for HMA since this would imply indifference between the ages.

Things can perhaps be narrowed down further, since there is a complication in eliciting preferences in terms of health improvements. The standard assumption in the literature on QALYs is that the decrement in quality of life due to a given health problem is independent of the person's age. However, we suspect that many respondents would be more likely to think that a given health problem (having problems walking about, say) would represent a larger loss to a younger person than to an older one, and so the loss in quality of life will vary—in the respondent's mind—according to the age of the person experiencing that loss. In order to mitigate this possible confounding factor, we decided to represent benefit in terms of years of life in full health.

Table 2
Respondent characteristics

Category	Round 1	Round 2	Yorks and Humberside
Sex			
Male (%)	48	49	47
Female (%)	52	51	53
Age			
<44 years (%)	48	51	49
>45 years (%)	52	49	51
Mean age	50	48	
Dependants[a]			
Children (%)	57	76	66
No-children (%)	43	24	34
Smoking status			
Smoker (%)	15	17	27
Non-smoker (%)	85	88	73
Economic status			
Employed (%)	60	49	56
Other (%)	40	51	44
N	60	70	4014

[a] Characteristic with different distribution between the two rounds ($p<0.05$, χ^2 test).

The samples

Every eighth person on the electoral register in three wards in York, England, was contacted and invited to participate. Out of a total of 1500 letters of invitation, 467 people (31%) agreed to take part. To ensure that the achieved sample of the survey was broadly representative of the wider population, 140 respondents were chosen, based on information on a broad range of characteristics obtained from their reply slips. Ten preliminary interviews were carried out, followed by 60 in round one and 70 in round two. All interviews were carried out by one of the authors and two other researchers. Table 2 shows the characteristics of the samples in rounds one and two. Those included in the study have background characteristics similar to the Yorkshire and Humberside population, although smokers are under-represented. Whether or not the respondent has dependant children is the only item where the two samples are statistically significantly different from one another ($p = 0.02$, χ^2 test).

Analysis

The results of the ranking exercise from the two rounds of interviews are presented in terms of the proportion of respondents who give a particular rank to each age, and aggregate rankings are summarised as Borda scores.[6] (To adjust for different numbers of respondents in the two rounds, the aggregated rank is divided by n.) To compare the pattern of ranking for a particular age, two tests were employed. One is the χ^2 test for trend (or for linear-by-linear association), which compares the distribution of ranks given to a particular age across rounds. Since the rank given to a particular age is not independent of the ranks given to the other ages, the test is only applied to those ages where the modal preference for that age is to rank it first. The other test is a Mann–Whitney U test of the ranks given by individuals to a particular age across rounds. In addition, χ^2 tests for independence were used to test for any association between the ranking and the reasons for them, and for the effect of respondent background characteristics on the rankings and reasons for them. All

[6] Borda scores are calculated by treating the ordinal information as if they were expressed on an interval scale. For each respondent, the first through fifth ranked ages are given scores of 5 through 1. These scores are then added up across the respondents for each age, so that the age with the largest total score is ranked first and the age with the lowest score is ranked last.

Table 3
Ranking results in round one—5-year benefit question

Age	Rank 1(%)	Rank 2(%)	Rank 3(%)	Rank 4(%)	Rank5(%)	Borda score
5	**53**	10	23	10	3	4.0
20	20	**60**	10	8	2	3.9
35	22	20	**53**	5	0	3.6
55	2	10	10	**75**	3	2.3
70	3	0	3	2	**92**	1.3

Modal rank is in bold.

differences reported are at the 5% level of significance unless otherwise stated.

The empirical study

The preliminary interviews

The preliminary interviews were tape-recorded and transcribed. Respondents were first presented with the five ages and told that the people in each of these groups would die in a few days. They were then asked to rank the ages in the order in which they would treat them, assuming that they would each receive a fixed benefit of 5 years. Respondents were asked to give reasons for each of their rankings. Through a template-based identification of codes and themes (Crabtree & Miller, 1992), a small number of categories were identified. These categories were:

(1) Lived less life / had a 'fair innings'—a typical quote: "*The 5-year old has lived less life and deserves a chance*".

(2) Benefit to society—"*The 35-year old could give a lot to society if given an extra 5 years—financially and to his family*".

(3) Family and/or other responsibilities—"*The 35-year old might have children and an extra 5 years would be very valuable, as the child would have a parent for that extra bit of time*".

(4) Five years may be more valuable to some people than others—"*The 35-year old would have 5 more years in which to look after their child whereas the 5-year old wouldn't really understand what they were getting*".

Notice that the first reason is related to FIA, whilst all other reasons concern PA. The results from these interviews suggested that people are quite capable of dealing with issues of life saving at different ages.

The first round of interviews

Design

Given the above, in the first round of interviews, respondents were asked exactly the same question; that is, to rank the ages on the basis of a 5-year benefit, assuming that people of each age would die in a few days without treatment. The respondent was asked to explain the reason of their choice, and their replies were coded by the interviewer using categories (1)–(4) above. Most respondents only gave one reason, but if more than one reason were given, the interviewer asked which was the main one for coding. In order to accommodate any responses that might not fit with these reasons, two additional categories were included. These were:

(5) Capacity to benefit (treat the younger because they have a longer life expectancy).

(6) Other (any other response that the interviewer recorded verbatim).

Category (5) was included in order to detect any respondent who was mistakenly thinking in terms of full-life benefit. However, not using this category does not necessarily guarantee that respondents were not mistaken.

Results

Table 3 shows how the respondents in the first round of interviews ranked the five ages. The most common response was to rank the ages in ascending order, from 5-year olds first to 70-year olds last—45% of respondents had this particular ranking and the Borda scores decrease monotonically from age 5 to age 70. The reasons for the rankings are shown in the first column of Table 6, where it can be seen that two-thirds of the respondents give reasons that were coded 'have lived less life'. This reason was more likely to come from those who ranked the ages in ascending order as compared to those who had some other ordering (χ^2 test, $p<0.001$). In addition, those who have 35-year olds ranked first were more likely to give 'family responsibilities, etc.' as the reason for their ranking (χ^2 test, $p<0.001$). There was little evidence that the rankings or the reasons for them are related to particular respondent characteristics, including age.

Tables 3 and 6 show quite clearly that the majority of respondents in round one rank the five ages in ascending order. Now, if preferences across the sample are such that the intensity of the preferences of a minority with 35-year olds ranked first was stronger than the intensity of the preferences of the majority with 5-year olds

Table 4
Ranking results in round two—full-life benefit question

Age	Rank 1(%)	Rank 2(%)	Rank 3(%)	Rank 4(%)	Rank 5(%)	Borda score
5	**76**	13	10	1	0	4.6
20	13	**76**	10	1	0	4.0
35	10	7	**80**	1	1	3.2
55	0	3	0	**96**	1	2.0
70	1	1	0	0	**97**	1.1

Modal rank is in bold.

Table 5
Ranking results in round two—5-year benefit question

Age	Rank 1(%)	Rank 2(%)	Rank 3(%)	Rank 4(%)	Rank 5(%)	Borda score
5	**39**	3	17	24	17	3.2
20	14	**56**	17	13	0	3.7
35	**43**	17	39	0	1	4.0
55	3	24	23	**50**	0	2.8
70	1	0	4	13	**81**	1.3

Modal rank is in bold.

ranked first, then a 'hump-shaped' age weighting function might, on average, still be possible.[7] But we have no reason to suppose that this is the case and the results suggest that there is general support for FIA over PA amongst the sample. If this is the case, the results contrast with those of other studies that have included young ages, and which suggest a 'hump-shaped' age weighting function rather than a monotonically decreasing one. The results reported here imply that some respondents might not have taken full account of the 5-year benefit and perhaps instead thought of the benefit lasting for a full lifetime, thus allowing their responses to be contaminated by HMA.

The second round of interviews

Design

One way of testing for the possibility that differences in normal life expectancy across the ages might be confounding responses (even if it is not mentioned as the reason given) is to ask respondents to first rank the five ages on the basis that they would live a normal life expectancy if treated. Reasons for this ranking could then be probed, and then the 5-year benefit question asked in the same way as in round one (followed by further probing). The juxtaposition of the 5-year benefit question with a 'full-life' benefit question should highlight the fixed and limited nature of the benefit in the main ranking question.

[7] We are grateful to one of the referees for pointing this out.

If the results from round one are genuine, and FIA dominates, then the full-life benefit question in round two should not affect the rankings in the 5-year benefit question that follows it. Therefore, the results for the 5-year benefit question will be comparable across the two rounds. If, on the other hand, the results from round one are confounded by HMA, then the addition of the full-life benefit question in round two will serve to reduce this artefact. Therefore, the results from the 5-year benefit questions will differ across the two rounds, with the ages in round two less likely to be ranked in ascending age order. The stronger the artefactual explanation, the closer the results for the 5-year benefit question in round one will be to the results for the full-life benefit question in round two.

Results

Table 4 shows how the respondents in round two ranked the five ages in the full-life benefit question. Here, the overwhelming majority of respondents rank the ages in ascending order, with 76% ranking age 5 first. The Borda scores decrease monotonically from age 5 to age 70 even faster than they do for the rankings shown in Table 3. The reasons for the rankings are shown in the second column of Table 6. It can be seen that the three concepts of ageism are mentioned as the main reason for the ranking by one-third of respondents each.

Table 5 shows how these respondents then ranked the five ages in the 5-year benefit question. There are clear differences between rounds one and two. Only 39% of

Table 6
Reasons for rankings (numbers are percentage of respondents)

Reason	Round 1: 5-year benefit	Round 2: full-life benefit	Round 2: 5-year benefit
1. Have lived less life (FIA)	67	33	37
2. Greater benefit to society (PA)	8	23	17
3. Family responsibilities, etc. (PA)	22	10	23
4. Five years is more valuable to some (PA)	0	0	21
5. Capacity to benefit (HMA)	0	33	0
6. Other	3	1	2

Reason (1) is consistent with fair innings ageism.
Reasons (2)–(4) are consistent with productivity ageism.
Reason (5) is consistent with health maximisation ageism.

respondents ranked 5-year olds first, compared with 53% in round one (two-sided z-test, $p = 0.092$). The modal rank for the 35-year olds changed and the percentage of respondents who rank this age first doubled. Further, the percentage of those placing 5-year olds at ranks 4 and 5 tripled, those placing 55-year olds at rank 2 doubled, and those placing age 70 at rank 4 had a large increase. The Borda scores imply a hump-shaped profile with age 35 as the peak age.

An inspection of the Borda scores reported in Tables 3–5 suggests that the aggregated ranking of the 5-year benefit question in round one more closely resembles the full-life benefit question in round two, rather than the same 5-year benefit question in round two. It should be noted, however, that the Borda scores for the 5-year benefit question in round two are not very stable and a couple of respondents changing their minds could make these closer to the scores for the 5-year benefit question in round one. Moreover, in terms of the percentage of respondents who ranked the ages in ascending order (45% in Table 3, 73% in Table 4, 33% in Table 5), the 5-year benefit question in round one lies somewhere between the two questions asked in round two.

To explore the extent to which the results of the 5-year benefit questions in the two rounds are similar to each other, χ^2 tests for trend on the distribution of the ranking was carried out on 5- and 35-year olds, and it was found that the patterns differ across rounds ($p = 0.02$ for 5-year olds, $p = 0.013$ for 35-year olds). Further, the Mann–Whitney U tests for rank scores indicates that while the scores for 20- and 70-year olds do not differ across the rounds, the scores for the other ages do: $p = 0.040$ for 5-year olds; $p = 0.010$ for 35-year olds; and $p = 0.001$ for 55-year olds. Thus, the results presented in Table 3 are different from those in Table 5.

The same set of tests indicates that the results from the 5-year benefit question in round one are different from the results of the full-life benefit question in round two. The χ^2 test for 5-year olds has $p = 0.001$, and, for 35-year olds, $p = 0.013$. Mann–Whitney U tests do not suggest significant differences in the rankings for 20- and 70-year olds between the two questions, but do indicate significant differences for the other ages ($p = 0.020$ for 5-year olds; $p = 0.010$ for 35-year olds; $p = 0.007$ for 55-year olds.

Given that the backgrounds of respondents of the two rounds differed in terms of having children or not, there is the possibility that the observed difference across rounds may be due to different composition of respondents. To address this, χ^2 tests for trend comparing the ranks given to 5-year olds in the 5-year benefit question in the two rounds were carried out on subgroups of respondents with or without children. The difference between the rounds is significant both amongst those with children ($p = 0.03$) and those without ($p = 0.02$). Thus, it is unlikely that the different composition of respondents across the rounds has caused the different ranking results.

On the other hand, by doing the same for other background characteristics that are roughly comparable across the rounds, those characteristics that are affected more or less by the insertion of the full-life benefit question were picked up. The ranking for the 5-year olds by those in employment, those in age groups 16–34, and 65+ is stable across the rounds, while this is not the case with those not in employment ($p = 0.002$) and those in age group 35–64 ($p = 0.012$).

The reasons for these rankings are shown in the third column of Table 6, where it can be seen that there are also striking differences between the rounds in the reasons for the rankings—differences that have important implications for the possible concepts of ageism used. This time, unlike responses in round one that favoured FIA, responses are much more evenly spread across the response categories (so that support for PA now totals 61%). Notice also that 21% of respondents in round two cite '5 years is more valuable to some' as compared to nobody in round one. Respondents who ranked the ages in ascending order are, as in round one, more likely to give 'have lived less life' as their reason (χ^2 test, $p = 0.005$).

Discussion

There a number of ways in which preferences regarding the three concepts of ageism—HMA, PA and FIA—have been elicited, and this paper has discussed the relative merits of some of them. Our contention that it is better to present respondents with a fixed duration of benefit (thus controlling for HMA) across a broad range of ages that facilitates discrimination between FIA and PA. The results from round one of our study suggest that FIA is the dominant concern, with little support for PA. We found the extent of this preference to be a little surprising and, despite the fact that no respondent gave 'capacity to benefit' as the reason for their ranking, we suspected that some might not have taken full account of the 5-year benefit and perhaps instead thought of the benefit lasting for a full lifetime.

The results from round two, which tested for the possible confounding effects of HMA by preceding the 5-year benefit question with a full-life benefit question, confirm our suspicions. The overall ranking of the ages in the 5-year benefit question in round one is the same as that of the ages in the full-life benefit question in round two but is significantly different from the overall ranking of the ages in the 5 year-benefit question which followed the full-life benefit question in round two. However, the results of the 5-year benefit question are also not close to the results of the full-life benefit question in round two. In other words, the responses in round one stand somewhere in between the response to the two questions in round two, and so the responses to the 5-year benefit question in round one would seem to be partly (rather than fully) confounded by HMA.

These results provide quite strong support for the idea that a proportion of respondents in round one failed to appreciate—or edited out—the fixed nature of the benefit. As noted earlier, this is in keeping with the psychological research that shows how respondents when faced with complex choices will often adopt simplifying strategies, including the editing out of information common to all alternatives. This strategy has been used to explain similar visual analogue values for states lasting very different durations i.e. respondents highlight the severity of each state but put on one side the (common) length of time spent in each state (see Robinson, Dolan, & Williams, 1997).

The idea that some respondents did not have the 5 year benefit at the forefront of their minds is reinforced by the reasons given for the rankings, where a fifth of respondents in round two gave '5 years is more valuable to some' as the reason for their ranking, as compared to no-one giving this reason in round one. There seems to be little doubt that the juxtaposing of the full-life benefit question with the 5-year benefit question highlights the limited nature of the benefit in the latter question, and so the important methodological message from the results of round two is, if you want people to answer the question *you* have in mind, first ask them the question you think *they* may have in mind.

There are, of course, limitations to this study. Apart from those shortcomings that are common to studies that ask members of the public hypothetical questions, there are two main limitations here. Firstly, we did not allow respondents to rank any of the ages equally, and so some respondents might have been forced to make a choice when they were truly indifferent between two or more ages. On the other hand, people are used to making clear choices and indifference is a concept used mainly by economists. We are aware of one study that compared the extent to which two groups of respondents wished to give priority to severely ill people, when one group was allowed to 'give equal priority' (Ubel, 1999). The results suggest that the inclusion of this option had a significant effect on the distribution of responses. Whether or not the inclusion of an indifference option results in more 'valid' data is, as the authors themselves suggest, open to debate.

Secondly, and perhaps of greater concern here, is the fact the samples in rounds one and two differed slightly, particularly in relation to whether or not respondents had dependents (children). Therefore, some of the differences between rounds might be attributable to differences between the two groups of respondents. However, statistical tests suggest otherwise.

A final word of caution concerning the qualitative data. Whilst qualitative information certainly helps us to 'get behind the numbers', it is only really effective when respondents themselves are aware of the reasons for the choices they make. It would seem from the results in this study, where no respondent in round one gave 'capacity to benefit' as their reason, that qualitative data will not detect a respondent's own editing-out of relevant information. However, by combining quantitative data across two rounds of interviews with qualitative analysis, this study has reached a better understanding of the respondents' ageist preferences.

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