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1

Consensual ideas for Prioritising Patients: Correlates of preferences in the allocation of

medical resources

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2

**Abstract** 

Five hundred adults indicated their preferences about the fairness and ethics of allocating scarce

medical interventions. They also completed an IQ test, a measure of self-esteem and the extent

to which they believed in a Just World, as well as General Conspiracy Theories. Results

confirmed previous studies which showed a strong preference for the Utilitarian "saves most

lives", followed by the Prioritization "sickest first" and "youngest first", preferences.

Correlations and regressions indicated relatively few significant individual difference

correlates of allocation preferences, with IQ being the major exception. Implications and

limitations are discussed.

Key Words: Scare resources; Allocation; Covid-19; Medical ethics; Utilitarianism

#### Introduction

There is an extensive literature on the allocation of medical resources in many disciplines including ethics, law, medicine, psychology and sociology (Cicognani et al., 2007; Krütli et al., 2016; Persad 2017ab; Lee et al., 2021; Selvaraj et al., 2019; Volpe et al., 2021). Indeed, the fair allocation of medical treatments is constantly debated (Emanuel et al., 2020; Hoffmaster & Hooker, 2013). This study set out to explore individual difference correlates of preferences in the allocation of medical resources. It examined demographic (age, sex), ideological (political and religious beliefs), ability (IQ), and self-assessment (self-esteem) factors, as well as specific belief systems (Belief in a Just World, Conspiracy Theories), as possible correlates of specific preferences. Relatively few studies have attempted to understand individual differences in these ethical decisions (Grover et al., 2020).

The study was conducted in 2021 when the Covid-19 pandemic made the issue of the allocation of scare medical resources particularly salient (DeJong, 2020). The pandemic put a huge strain on many country's medical resources, which increased the interest in fair allocation (Daugherty Biddison, et al., 2019; Cardona et al., 2021; Pauls et al., 2020; Pinho, 2021; Naidoo & Naidoo, 2021; White & Lo, 2002). The study was planned in early 2021 when there was a shortage of vaccines in many countries, but completed later in that year when things had changed a little for the better in most countries.

Ethical positions on resource allocation can, very crudely, be divided into *teleological* or *deontological* approaches. Teleological theories focus on the outcome of a decision such as *utilitarianism*; the greatest amount of pleasure/desirable outcome resulting from a decision (Stein, 2012). Deontology focuses on the nature of the action rather than its consequences such as *egalitarianism*; which argues that all people should have an equal chance of a good outcome. This can be achieved by in medical settings by using random allocation or some other pre-

planned system (Freund, 1971; Stein, 2012). This issue is currently widely debated in the media because of the Covid-19 pandemic occurring when this study was run.

Persad, Wertheimer and Emanuel (2009) listed eight primary ethical principles for medical resource allocation. Two *utilitarian* allocation principles are: *saving the most number of lives* and *the most number of life-years*. The *lottery* and *first-come*, *first-served* methods support an *egalitarian* approach to the allocation of resources. Prioritising the disadvantaged gives rise to two other possible allocation methods: *sickest first* and *youngest first*. Other criteria of social usefulness are *instrumental value* and *reciprocity*. Instrumental value involves prioritising those with specific skills and usefulness such thus requiring fewer medical resources. Reciprocity means essentially prioritising those who have been useful to society, though this could have many different meanings. For instance, it could be argued that compliance with Covid-19 vaccinations could be seen as fulfilling the principle of reciprocity.

Krütli et al. (2016) explored how lay people, general practitioners, medical students and other health professionals evaluated the fairness of allocation principles for scarce medical resources: 'sickest first', 'waiting list', 'prognosis', 'behaviour', 'instrumental value' 'combination of criteria' (i.e., 'youngest first', 'prognosis', and 'lottery' principles), 'reciprocity', 'youngest first', 'lottery', and 'monetary contribution'. They found that medical background was a major predictor of fairness evaluations. General practitioners showed different response patterns for all three allocation ssenarios, while lay people did not differentiate. The lay people sample rated 'sickest first' and 'waiting list' as most important.

Recently Grover et al. (2020) asked 515 individuals using the Persad et al. (2009) criteria to show their preferences. There was a strong preference for the 'saves most lives' and 'first-come, first-served' options, with 'reciprocity' and a 'lottery' being least favoured. There was essentially unanimity in responses. When their preference were compared to expert

recommendations, a few interesting differences were noted: experts favoured a good prognosis much higher than did lay people.

The Covid-19 pandemic and crisis with its associated allocation issues has spurred on this research including a paper by Emanuel et al. (2020) quoted nearly 2000 times in two years, indicating its importance and contribution. This is an exceptional recognition response and attests to both the importance and timeliness of the paper. It had with it six recommendations: 1: In the context of a the Covid-19 pandemic, the value of maximizing benefits is most important, 2: Critical Covid-19 interventions should go first to front-line health care workers and carers for ill patients, particularly those who face a high risk of infection and whose training makes them difficult to replace, 3: For patients with similar prognoses, the equality principle should be used through random allocation (lottery), rather than a first-come, first-served allocation process, 4: Prioritization guidelines should differ by particular intervention and should respond to changing evidence of the disease, 5: Researchers trying to prove the safety, and efficacy of treatment should receive priority, and 6: There should be no difference in resource allocation between Covid-19 patients and those with other medical conditions.

Emanuel et al. (2020) argued that the allocation of resources in pandemics converge on four fundamental values: maximizing the benefits produced by scarce resources, treating people equally, promoting and rewarding instrumental value, and giving priority to the worst off. They suggested that each of these four values can be operationalized. *Maximization of benefits* is the saving of the most individual lives or saving the most life-years, prioritising patients likely to survive longest after treatment. *Treating people equally* could be done by random selection, such as a lottery, or by a first-come, first-served allocation. *Instrumental value* is essentially giving priority to those who can save others or have saved others in the past. *Priority* to the worst off means giving priority either to the sickest or to younger people who will have lived the shortest lives if they die untreated.

In a Korean study where lay people rated the eight Persad principles plus two more, Lee et al. (2021) found the public agreed strongly with the principles of "save the most lives" "Koreans first" and "sickest first", but less with "random selection" in contrast to the recommendations of ethicists who also completed the questionnaire. "Save the most lives" was given the highest priority by both the public and ethicists. They concluded that their sample preferred rationing scarce medical resources in the Covid-19 pandemic based on utilitarianism, identity and prioritarianism, rather than egalitarianism.

In a similar study done in Jordan, Yousef et al. (2021) offered people 10 allocation principals to implement with three medical conditions. Their results showed that "sickest first" was the prioritization principle that should be considered when encountering scarce medical resources in all three scenarios. Further, there was a consensus between participants from the five different groups.

In a recent related study, Cardenas et al. (2022) asked a group of Americans to choose which of three hypothetical patients with Covid-19 should receive an ICU bed if only one were available. The three patients differed in age, gender, Alzheimer's-like disability and probability of survival if the patient received the ICU bed. They found people favoured the patient with the highest probability of surviving Covid-19. They noted that public opinion suggests a simple guideline for physician choices based on likelihood of survival as opposed to the number of life-years saved.

### **This Study**

This study extends the work of Grover et al. (2020) and which was conducted in late 2021. It was concerned with individual difference correlates of allocation decisions based on the Persad et al. (2009). We were particularly interested in the issue of consensus and whether there was general agreement on this issue, or whether there were interesting individual differences.

Our question concerned correlates of allocation preferences. In addition to demographic (sex, age) and ideological (religion, politics) factors, we explored five additional individual difference variables. First, we were interested in the classic demographic variables of sex and age and whether these were related to ethical preferences, though previous studies suggest little difference. Some studies have found gender differences in allocation preferences (Furnham et al., 2011; Grover et al., 2020), though fewer age differences in adults (Grover et al., 2020).

Second, we also measured political and religious beliefs as many studies have shown these to be related to all sorts of ethical decisions (Furnham et al., 2021). Indeed, all religions are concerned with ethics, while politics is also concerned with the fair distribution of resources in every country. Both have been extensively studied (Chima, 2015).

Third, we explored the idea of whether intelligence had any impact on participant's ethical choices, which has not been very explored. Extensive research on intelligence has shown that it is clearly linked to a whole range of decision-making processes and outcomes (Bricklin, 2001). Thus, brighter people may be expected to support more rational over emotional ethical arguments. Fourth, in a series of studies we have shown that people's self-esteem has an impact on decision making (Furnham & Grover, 2021).

Finally, we explored two "belief systems" and their possible impact on ethical decision making. The first was the Belief of a Just World (BJW) which concerns whether people "get what they deserve" because the world is essentially a just place, and that people are personally responsible for their health (Furnham, 2003; Hafer & Sutton, 2016). BJW is a personal belief system, or cognitive style, that supports the notion that good things happen to good people, and bad things happen to bad people. It has been shown for instance by Ashkanasy et al., (2006), amongst others, to relate to ethical decision making.

Finally, given the recent work on Conspiracy Theories (CTs), we explored whether a general inclination to believe in them might influence ethical decision making (Furnham & Grover, 2021). Reviewers have noted how pervasive CTs are and their effects on all aspects of an individual's beliefs and behaviours (van Prooijen & Douglas, 2018). Studies have shown how beliefs in CTs are related to ethical and moral decisions (Räikkä, 2009) and specifically behaviour during the Covid-19 crisis (Pertwee et al., 2022).

### Method

## **Participants**

There were 502 participants: 254 males and 248 females. They ranged in age from 30-69 years, with a modal age of 36 years. In all 70.9% were university graduates, and most were in middle class professions. They came from a number of European countries but were predominantly British. They were asked a number of questions used before in a number of papers and shown to be valid (Furnham et al., 2022). With regard to their religious beliefs (1= Not at all to 9 = Very) they scored a mean of 3.80 (SD = 3.01), indicating that many were not very religious. In all 41.3% said they did, and 58.7% said they did not, believe in an afterlife. They rated their political views from 1 (Very Conservative) to 9 (Very Liberal) with a mean of 5.83 (SD = 1.81). They rated the statement "I am an optimist" from 10 (Agree) to 1 (Disagree) with a mean of 6.74 (SD = 2.15). Participants also rated themselves on four other factors on a scale from 1 (Not at all) to 100 (Very): Physical Attractiveness (M = 62.16; SD = 19.23), Physical Health (M = 69.07, SD = 18.18), Intelligence (IQ) (M = 73.09, SD = 13.49), and Emotional Intelligence (M = 72.81, SD = 17.01).

### **Questionnaires**

The questionnaire was divided into five sections with a total of 52 questions. It took candidates between 5 and 12 minutes to complete.

*Medical Ethics* (Persad et al., 2009). Participants were given the following instructions based on the Grover et al. (2020) study.

"Medical people often have to make difficult ethical choices when they have to choose who to treat because there are too many people wanting treatments that are limited. As a consequence, ethicists have come up with different systems, strategies or principles. A recent study suggests there are essentially eight principles that may be used to allocate scarce medical interventions. These are listed below: In this questionnaire, we are interested in your views and which principles you personally would advocate. We would like you to rank order these. Please read through all eight then put a 1 (meaning most preferred) against the one you think is best/fairest. Then put a 2 against the principle you think next fairest. Continue until you have ranked all eight".

These are shown in detail on Table 1

### Insert table 1 here

Self-Esteem. Participants rated four factors on a scale from 1-100: Physical Attractiveness, Physical Health, Intelligence (IQ), and Emotional Intelligence. The Alpha for these four items was .73 and they were summed together forming a variable labelled Self-Esteem. This simple measure has been used in a number of studies (Furnham et al., 2021; 2022).

Conspiracy Thinking (CT) (Walter & Drochon, 2020). This was a 10-item scale devised as part of the Conspiracy and Democracy project at the University of Cambridge. It consisted of 10 statements that are generic in nature and not connected to any specific societal, economic or political systems. People indicate those they believe to be true. In this study the Alpha was .68, with a mean of 2.01 (SD = 1.77).

Belief in a Just World (BJW). Rubin and Peplau (1975) devised a 20 item self-report inventory to measure the attitudinal continuity between the two opposite poles of total acceptance and rejection of the notion that the world is a just place. The scale has been quoted over 650 times in the academic literature, though there are more recent versions (Hafer & Sutton, 2016). Because some items were both dated and country specific, 6 were removed leaving 9 Just World and 5 Unjust World items remaining. The Cronbach Alpha in this study for the Just World was .88 and .82 for the Unjust World.

IQ (The Wonderlic Personnel Test) (Wonderlic, 1990). This 50-item test can be administered in 12 minutes and measures general intelligence. Items include word and number comparisons, disarranged sentences, and story problems that require mathematical and logical solutions. The test has impressive norms and correlates very highly (r = .92) with the Wechsler Adult Intelligence Scale (WAIS). In this study we used 16 items from Form A.

### **Procedure**

Departmental ethical approval was gained prior to data collection: that is, we submitted a standard proposal that was accepted before we collected the data, as is the practice. Data was collected on-line through *Prolific*, a platform like the better-known Amazon-Turk. We specified that they need to be over 30 years (to prevent too many students taking part), working (rather than studying) and be fluent in English. Participants were compensated for their time (receiving £2.50). Usual data cleansing and checking led to around 5% of the participants recruited being rejected before further analysis. Data was collected in November 2021 when the Covid-19 pandemic still put great demands on medical resources in nearly every country.

#### Results

#### Insert Table 2 here

Table 2 shows the mean scores and non-parametric correlations with the other variables. The mean scores for the eight preferences shows the top three most popular were "Saves the most lives" (5), "Sickest first" (3) and "Youngest first" (4), while those that received lowest rating were "Lottery" (1) "Reciprocity" (8) and "First come, first served" (2). The results were most consensual for (1) "Lottery", where 69% rated it 7 or 8, (5) "Saves most lives", where 70% rated it 1 or 2, and (3) "Sickest first", where 59% rated it 1 or 2.

#### Insert Table 3

These results were almost identical to Grover et al. (2020) indicating consensus on this issue. Table 3 also shows the non-parametric correlations between the eight individual difference variables and the eight rankings. The results show a quarter (16/64) were significant. Two allocation decisions ("First come-first served" and "Prognosis") showed most correlates. The individual difference variable that was most consistently related to the allocation decisions was intelligence. More intelligent people favoured (5) "Save the most lives" and (6) "Prognosis or life-years", and were least likely to rate (2) "First-come, first-served" highly. Interestingly, correlations for beliefs in CT were also significant for these three preferences but in the opposite directions.

### Insert Table 4ab

In order to look at the relative power of the individual differences to each preference, a series of multiple regressions was computed (see table 4ab). Six were significant but only two at the p < .01 level. The regression onto (2) "First-come, first-served" showed less bright and younger people, who did not endorse the BJW, favoured this explanation. For the fourth choice "Youngest first", the results showed that less religious people who held CTs were more likely to rank order this allocation principle.

Looking at all regression it was apparent that some variables (i.e., political beliefs and self-esteem) were unrelated to these ratings, while these ratings were related to other factors (religious and BJW), as well as sex, age and CTs. Without doubt the strongest correlate of the measures we used was intelligence.

### **Discussion**

Whilst there has long been an interest by ethicists and medical specialists on the topic of the fair and just allocation of scarce medical resources, the Covid-19 pandemic has stimulated a great deal of interest around the world on this topic (White & Lo, 2022).

Overall, these results show the consensual nature of lay ethical views on medical allocation. There were three indicators of this: firstly, the standard deviations for each choice were low (around 1.75); secondly few of the correlations with the eight variables we measured showed strong relationships and thirdly the results concur with others showing similar results (Grover et al., 2020; Krütli et al., 2016; Lee et al., 2021; Yousef et al., 2021). Thus, of the many and very different variables we examined (ability, belief systems, demography, ideology, self-esteem) none was closely related to the allocation decisions used in this study. It begs the question of whether there are other factors which clearly and strongly relate to these decisions or whether there is usually general consensus among the general public on these kind of issues.

Most other studies in this area have either compared the allocation preferences of different groups (e.g., doctors, ethicists, lay people) or looked at how allocations may differ according to the medical problem they are presented with. Despite very different populations (American, British, Jordanian, Koreans, Portuguese, Swiss) the results appear very similar. People favour utilitarian and prioritisation as opposed to egalitarian ethics. This appears to be only marginally related to their particular background or beliefs. Clearly this preference for utilitarian principles

needs to be further explored such as in the case of the allocation of other (non-medical) resources.

We know from working in this area for some years, that people do not enjoy the task of making medical allocation decisions, particularly rank ordering patients with specified characteristics. Indeed, there is often a relatively high refusal rate, even when assured that they are simply taking part in an academic study. If they are not asked to rank patients, they rate all equally as worthy of medical help even when they must know that this is impossible. It seems that people both have not thought about, and do not want to think about, the problem which clearly provokes anxiety. This may have been all the more salient during the Covid-19 pandemic.

This paper took an individual difference perspective trying to ascertain if there were any logical connections. We chose a range of factors we thought reasonably related to lay ethical decision making such as religious and political, as well as BJWs. Overall, the correlations were low and the significant correlations few, indicating that perhaps we were not tapping into specific individual differences related to ethical decision making. It would interesting to know what other as yet un-investigated individual difference variables were more closely related to these allocation decisions. On the other hand, it could be argued that these results reveal consensual beliefs among the general public. This would be of interest to medical ethicists who may show similar consensus, but be somewhat different from lay peoples (Grover et al., 2020).

Perhaps the most interesting find was the role of IQ in these results. Certainly, we did not test IQ under rigorous or even timed conditions, but the distribution of the scores was reasonably normal and the results comparable to other studies that used this test and method (Furnham et al., 2021). However, these results did show that more intelligent people were in more agreement with the position of ethicists compared to less intelligent people (Emanuel et al.,

2020; Persad, 2017ab). Intelligent people were more likely to reject the "first come, first served" idea and more likely to support the prognosis criterion.

We were surprised that BJW was so weakly related to ethical decision. People are frequently confronted with issues such as why some people get ill (i.e., contract Covid-19), and descend into poverty while others do not. The idea is that the BJW helps answer some of these difficult ethic, moral and social questions, though it remains unclear whether it could be considered healthy and adaptive or not (Furnham, 2003). Certainly, it does not seem related to the allocation decisions examined in this study.

Like all studies, this one had a number of limitations. We had a reasonably sized, but not representative, populations of adults, who were much better educated than the general population. We tried not to have a predominantly student sample as these are often particularly unrepresentative of the population, though a number in this study were part-time students. There is also a lot we did not know about them such as their health history and those close to them. It would also have been of great interest to have some insight into other the ethical beliefs of the participants, such as their position on various dimensions such as relativism and idealism. Thus Forsyth (1981) classified people as high vs low and both dimensions suggesting four ethical positions: situationists, absolutists, subjectivists and exceptionists. (Forsyth, 1981; O'Boyle & Forsyth, 2021; Zaikauskaite et al., 2020).

Also, in this study we asked participants to rank order their preferences which restricts the data to being ordinal and non-parametric with inevitable statistical restrictions. However, we know from pilot work that unless we used rank ordering a large number of participants would not differentiate between the different decisions they had to make. It would be interesting to investigate the potential trade-off between ethical positions. Equally importantly, our rank ordered data made it difficult to do multivariate research seeking to explore which of our

individual difference variables was the most consistent and powerful correlate of the decisions asked to make.

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# **Table 1: The Eight Choices**

- 1. Lottery: the random allocation of interventions, through drawing recipients blindly
- First-come, first-served: allocating interventions based on the order of request, or requirement.
- 3. Sickest first: prioritising those with the worst future prospects if left untreated.
- **4. Youngest first:** prioritising those who have had the least life years, and thus have the potential to live longer if cured.
- **5. Save the most lives:** aiming to save the most individual lives possible, through offering all people treatment.
- **6. Prognosis or life-years:** aiming to save the most life-years, thus prioritising those with positive prognoses, and excluding those with poor prognoses.
- 7. **Instrumental value:** prioritising those with specific skills and usefulness e.g. those producing a vaccine, or those who have agreed to improve their health following treatment and thus requiring fewer resources (stop smoking, lose weight, etc.)
- 8. **Reciprocity** prioritising those who have been useful in the past e.g. past organ donors.

Table 2: Frequency of most preferred ethical principle

| First Choice             | Frequency | Percent |
|--------------------------|-----------|---------|
| Lottery                  | 17        | 3.4%    |
| First-come, first-served | 22        | 4.4%    |
| Sickest first            | 131       | 26.1%   |
| Youngest first           | 33        | 6.6%    |
| Save the most lives      | 250       | 49.8%   |
| Prognosis or life-years  | 28        | 5.6%    |
| Instrumental value       | 19        | 3.8%    |
| Reciprocity              | 2         | 0.4%    |
| Total                    | 502       | 100     |

Table 3. Correlations between all the variables

|                         | Mean   | SD    | 1      | 2      | 3     | 4     | 5     | 6      | 7      | 8     | 9     | 10  | 11     | 12    | 13    | 14     | 15 |
|-------------------------|--------|-------|--------|--------|-------|-------|-------|--------|--------|-------|-------|-----|--------|-------|-------|--------|----|
| (1) ME1                 | 6.63   | 1.99  |        |        |       |       |       |        |        |       |       |     |        |       |       |        |    |
|                         |        |       |        |        |       |       |       |        |        |       |       |     |        |       |       |        |    |
| (2) ME2                 | 4.99   | 1.98  | .17*** |        |       |       |       |        |        |       |       |     |        |       |       |        |    |
| (3) ME3                 | 2.82   | 1.87  | 15***  | .03    |       |       |       |        |        |       |       |     |        |       |       |        |    |
| (4) ME4                 | 3.78   | 1.61  | 17***  | 24***  | 09*   |       |       |        |        |       |       |     |        |       |       |        |    |
| (5) ME5                 | 2.16   | 1.55  | 23***  | 25***  | 05    | 13**  |       |        |        |       |       |     |        |       |       |        |    |
| (6) ME6                 | 4.15   | 1.78  | 23***  | 39***  | 25*** | .02   | 00    |        |        |       |       |     |        |       |       |        |    |
| (7) ME7                 | 5.33   | 1.76  | 29***  | 29***  | 32*** | 13**  | 15*** | 01     |        |       |       |     |        |       |       |        |    |
| (8) ME8                 | 6.14   | 1.53  | 33***  | 25***  | 25*** | 15*** | 02    | 07     | .28*** |       |       |     |        |       |       |        |    |
| (9) Sex                 | 1.49   | .50   | 04     | 02     | 09    | 08    | 01    | 05     | .17*** | .15** |       |     |        |       |       |        |    |
| (10) Age                | 37.96  | 8.02  | .02    | .10*   | 00    | 04    | 02    | 11*    | 02     | .06   | .00   |     |        |       |       |        |    |
| (11) Religion.          | 3.80   | 3.01  | .02    | 13**   | 01    | .09   | .06   | .11*   | 09*    | 02    | .04   | .02 |        |       |       |        |    |
| (12) Political Beliefs. | 5.83   | 1.81  | 06     | .07    | 03    | 05    | .05   | 05     | .11*   | .05   | .13** | 03  | 23***  |       |       |        |    |
| (13) IQ                 | 10.27  | 2.83  | .10*   | .20*** | .04   | 02    | 17*** | 18***  | 00     | 04    | 15*** | .05 | 25***  | .08   |       |        |    |
| (14) Self-Esteem        | 276.86 | 50.71 | .06    | 04     | 04    | 00    | .05   | .04    | 01     | 05    | 03    | .02 | .17*** | .00   | .04   |        |    |
| (15) JWB                | 14.86  | 10.16 | .03    | 09     | .10*  | 04    | .11*  | .03    | 10*    | 05    | 17*** | .04 | .04    | 14**  | .03   | .21*** |    |
| (16) Conspiracy Bel.    | 2.02   | 1.77  | .05    | 15**   | 05    | 07    | .11*  | .18*** | 08     | .04   | .11*  | 05  | .41*** | 23*** | 36*** |        | 02 |
|                         |        |       |        |        |       |       |       |        |        |       |       |     |        |       |       |        |    |

\*\*\*p<.001 \*\*p<.01 \*p<.05

Table 4a. Regressions of demography, ideology, intelligence and belief systems

|                         | ME1 |     |      |       |     | M   | IE2  |         |     | N   | ME3  |       | ME4   |     |      |         |  |
|-------------------------|-----|-----|------|-------|-----|-----|------|---------|-----|-----|------|-------|-------|-----|------|---------|--|
|                         | В   | SE  | Beta | t     | В   | SE  | Beta | t       | В   | SE  | Beta | t     | В     | SE  | Beta | t       |  |
| Sex                     | 05  | .18 | 01   | -0.27 | 04  | .18 | 01   | -0.24   | 29  | .17 | 08   | -1.68 | 23    | .15 | 07   | -1.56   |  |
| Age                     | .00 | .01 | .01  | 0.15  | .03 | .01 | .10  | 2.27*   | 01  | .01 | 02   | -0.47 | 01    | .01 | 04   | -0.91   |  |
| Religious               | .01 | .03 | .02  | 0.43  | 04  | .03 | 05   | -1.06   | .01 | .03 | .01  | 0.19  | .07   | .03 | .13  | 2.46*   |  |
| Politics                | 04  | .05 | 03   | -0.71 | .01 | .05 | .01  | 0.28    | 02  | .05 | 02   | -0.41 | 04    | .04 | 05   | -0.99   |  |
| IQ                      | .09 | .03 | .13  | 2.52* | .12 | .03 | .18  | 3.64*** | .01 | .03 | .01  | 0.17  | 02    | .03 | 04   | -0.78   |  |
| Self-Esteem             | .00 | .00 | .04  | 0.80  | 00  | .00 | 02   | -0.36   | 00  | .00 | 06   | -1.33 | .00   | .00 | 02   | -0.33   |  |
| JWB                     | .01 | .01 | .05  | 0.96  | 02  | .01 | 09   | -2.00*  | .02 | .01 | .09  | 1.87  | 01    | .01 | 05   | -0.96   |  |
| Conspiracy              | .10 | .06 | .09  | 1.73  | 05  | .06 | 04   | -0.80   | 05  | .06 | 05   | -0.97 | 13    | .05 | 14   | -2.70** |  |
| Adjusted R <sup>2</sup> |     | .0  | 009  |       |     | .(  | )53  |         |     | .(  | 006  |       | .015  |     |      |         |  |
| F                       |     | 1.: | 563  |       |     | 4.  | 382  |         |     | 1.  | .357 |       | 1.958 |     |      |         |  |
| p                       |     | .1  | .33  |       |     | ).  | 000  |         |     |     | 213  |       | .050  |     |      |         |  |

Table 4b. Regressions of demography, ideology, intelligence and belief systems

|                         |     | M   | IE5  |         |     | M   | IE6  |         |     | N   | ИЕ7  |         | ME8   |     |      |        |  |
|-------------------------|-----|-----|------|---------|-----|-----|------|---------|-----|-----|------|---------|-------|-----|------|--------|--|
|                         | В   | SE  | Beta | t       | В   | SE  | Beta | t       | В   | SE  | Beta | t       | В     | SE  | Beta | t      |  |
| Sex                     | 04  | .14 | 01   | -0.31   | 28  | .16 | 08   | -1.73   | .55 | .16 | .16  | 3.43*** | .40   | .14 | .13  | 2.77** |  |
| Age                     | 00  | .01 | 01   | -0.22   | 02  | .01 | 10   | -2.24*  | 00  | .01 | 01   | -0.32   | .01   | .01 | .07  | 1.64   |  |
| Religious               | 01  | .03 | 01   | -0.25   | .01 | .03 | .02  | 0.44    | 04  | .03 | 07   | -1.40   | 02    | .03 | 04   | -0.71  |  |
| Politics                | 02  | .04 | 02   | -0.50   | .00 | .05 | .00  | 0.09    | .07 | .05 | .07  | 1.54    | .03   | .04 | .04  | 0.76   |  |
| IQTot                   | 09  | .03 | 16   | -3.24** | 09  | .03 | 14   | -2.95** | 01  | .03 | 02   | -0.45   | 01    | .03 | 01   | -0.17  |  |
| SelfTot                 | .00 | .00 | .04  | 0.85    | .00 | .00 | .03  | 0.67    | .00 | .00 | .02  | 0.47    | 00    | .00 | 04   | -0.75  |  |
| JWB                     | .01 | .01 | .07  | 1.53    | .00 | .01 | .02  | 0.46    | 01  | .01 | 06   | -1.17   | 01    | .01 | 03   | -0.72  |  |
| ConspiracyTot           | .05 | .05 | .06  | 1.17    | .11 | .05 | .11  | 2.11*   | 08  | .05 | 08   | -1.50   | .04   | .05 | .05  | 0.91   |  |
| Adjusted R <sup>2</sup> |     | .0  | )27  |         |     | ).  | )46  |         |     |     | 041  |         | .016  |     |      |        |  |
| F                       |     | 2.0 | 685  |         |     | 3.  | 967  |         |     | 3   | .606 |         | 2.020 |     |      |        |  |
| p                       |     | .0  | 007  |         |     | .0  | 000  |         |     |     | 000  |         | .042  |     |      |        |  |