Running head: ALLOCATING SCARCE MEDICAL RESOURCES

Allocating scarce medical resources: Using social usefulness as a criterion.

Selvaraj, D.,¹ McClelland, A.,² & Furnham, A.^{1,3}

 ¹.Research Department of Clinical, Educational and Health Psychology, University College London, 26 Bedford Way, London, WC1H0AP
 ².Research Department of Experimental Psychology. University College London, 26 Bedford Way, London, WC1H0AP

^{3.} Norwegian Business School (BI), Nydalveien, Olso, Norway

Corresponding author: <u>a.furnham@ucl.ac.uk;</u> Tel 00 44 207 679 5395

Abstract

This study aimed to determine if people would use social usefulness as a criterion when allocating a kidney to potential recipients. Participants (N = 281) ranked hypothetical patients in order of priority to receive the kidney, only using information on the patients' volunteering record, intelligence, emotional intelligence and attractiveness. The results showed that volunteers were prioritized over non-volunteers, highly intelligent patients over those with average intelligence, and good-looking patients over average-looking patients. There was little evidence of personal favouritism. Implications and limitations are discussed.

Keywords: scarce medical resource allocation, social usefulness, personal favouritism

Allocating scarce medical resources: Using social usefulness as a criterion.

Introduction

When the demand for a certain medical resource exceeds the supply of that resource, it is termed a scarce medical resource. Allocation of scarce medical resources will remain an interminable and contentious issue, for who is to decide to whom these resources should be allocated, and by which criteria? The issue of scarce medical resource allocation is of interest not only to ethicists, but also to psychologists, philosophers, policymakers and the general public. It is, after all, money from the general public in the form of taxes that usually fund these allocation programmes, and thus it is reasonable for the general public to want to have a say in how these scarce resources are allocated to members of the society.

The ethics behind resource allocation

Traditionally, the two philosophical principles of utilitarianism and egalitarianism have been used to underpin discussions concerning the ethics behind resource allocation methods (Lamb, 1990). There are however a number of other identifiable principles (see below).

Utilitarianism is a consequentialist theory because it focuses on the outcomes of actions rather than the actions themselves. In accordance with utilitarianism, the best, or most ideal, action is one that brings about maximum happiness, and the worst action is one causes maximum unhappiness, where happiness is defined as "pleasure and the absence of pain" (pp. 10) whilst unhappiness is defined as "pain, and the privation of pleasure" (Mill, 1863, pp. 10). In the context of resource allocation, utilitarianism would endorse allocation to the person whose health and well-

being would bring about most happiness in society, thus giving rise to individual judgments of social worth (Banks, 1995).

The second philosophical perspective is egalitarianism, which is a deontological principle. Deontology, in contrast to consequentialism, is focused on the act rather than the outcome and the morality of the act is determined by a known and accepted set of rules (Broad, 1930). As such, egalitarianism puts forth the rule that all individuals are equal in terms of social worth. However, with scarce resources, some sort of selection usually has to be made.

Persad, Wertheimer and Emanuel (2009) demonstrated that these two philosophical perspectives were insufficient to capture the complexity that surrounds the issue of resource allocation. They elaborated on eight primary ethical principles for medical resource allocation. The two utilitarian allocation methods are based on *saving the most number of lives* and *the most number of life-years*, respectively. The *lottery* and *first-come*, *first-served* methods are more individualistic and adopt an egalitarian approach in allocating resources. Prioritarianism, or prioritising the disadvantaged, gives rise to two possible allocation methods: *sickest first* and *youngest first*. The next were classified under social usefulness: *instrumental value* and *reciprocity*. These are defined thus: Instrumental value- prioritising those with specific skills and usefulness such as 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.); Reciprocity – prioritising those who have been useful.

Many studies show people's preferences for egalitarianism (Dolan & Cookson, 2000, Ratcliffe, 2000; Ubel, 1999; Wilmot, & Ratcliffe, 2002). There has been mixed support for the *youngest first* principle (Rodríguez & Pinto, 2000; Mossialos & King, 1999; Schwappach, 2003; Tong et al., 2010).

Current allocation criteria

As the current study uses kidney transplant as the scarce medical resource to be allocated, the kidney allocation systems of two major countries (UK and the USA) will be examined in detail. The allocation criteria used in these two countries appear to incorporate several of Persad et al.'s (2009) allocation principles, namely *first-come*, *first-served* and *youngest first*, with a heavy emphasis on prognosis. There is no direct evidence for the prioritisation of the sickest, although it is very likely that they are indirectly prioritised through the *first-come*, *first-served* principle as their condition is likely to worsen the longer they remain on the waiting list. The *lottery* principle is not used at all in either the US or the UK.

The present study

This study employs a similar methodology to the studies by Furnham (1996) and his colleagues and investigates two previously studied variables (community service and intelligence) and two untested variables (emotional intelligence, or EI, and physical attractiveness). These latter variables were chosen as they reflect the social usefulness of an individual. It is assumed that EI is an indication of social usefulness as EI people are better communicators, more empathic and sought out by others for friendship (Petrides et al., 2016). Similarly physical attractiveness has always been rated as a positive factors; in part because it has been shown to be an indicator of health and fecundity (Swami & Furnham, 2008).

Some of the more recent studies have used Likert scales to measure participants' preference. However, this study retains the rank-order method used in the older studies because it more realistically simulates medical decision-making, where medical professionals have to choose one patient over another. Even though the rank-order paradigm may be more demanding for participants, findings from studies that use rank-order are consistent with the findings from the

studies using the Likert scale (Furnham & Briggs, 1993; Furnham, 1996; Furnham & Petrides, 2007; Furnham. McClelland, & Drummond-Baxter, 2010; Furnham, Petrides, & Callahan, 2011). Furthermore, in this study, participants are asked to elaborate on what criteria they used to rank the patients, though very few did so (less than 10%). This would provide more insights into the participants' rationale for ranking a certain way.

The following hypotheses were proposed:

Hypothesis 1: Higher priority will be assigned to patients who volunteer over patients who do not. Furnham, Simmons, and McClelland, (2000) found that there was a preference for patients who participated in community service to be allocated to a kidney machine, over patients who did not participate in community service. Allocation based on this variable is according to the *reciprocity* principle, as it favours people who had contributed to society (Persad et al., 2009).

Hypothesis 2: Highly intelligent patients will receive higher priority over patients with average intelligence. This is based on previous research by Furnham, Thomas, and Petrides (2002) and Wiseman (2006), and is likely due to the perception that highly intelligent people are more valuable to society.

Hypothesis 3: Patients with high EI will receive higher priority over patients with average EI. People with higher EI were found to be more agreeable and thus were more likeable (Schulte, Ree, & Carretta, 2004). Hence, they might be judged as possessing higher *instrumental value* than people with average EI.

Hypothesis 4: Good-looking patients will receive higher priority over average-looking patients. It is proposed that the halo effect would lead participants to believe that good-looking individuals have other positive characteristics as well, thus having higher

instrumental value (Miller, 1970). Another possible mechanism for this effect is participants using attractiveness to judge the patients' health, as studies have shown that attractive faces are judged to be healthier as well (Jones et al., 2001). Therefore, prioritising the good-looking patients would mean prioritising patients with better prognosis.

The fifth hypothesis is that there would be personal favouritism in prioritisation in the sense that participants would favour people like themselves:

Hypothesis 5a: Participants who volunteer regularly would favour patients who volunteer and yet it is possible participants who do not volunteer regularly would favour patients who did actually volunteer.

Hypothesis 5b: Participants who are above average in intelligence would favour highly intelligent patients and participants who are below average in intelligence would favour patients with average intelligence.

Hypothesis 5c: Participants who are above average in EI would favour patients with high EI and participants who are below average in EI would favour patients with average EI.

Hypothesis 5d: Participants who are above average in terms of attractiveness would favour good-looking patients and participants who are below average in terms of attractiveness would favour average-looking patients.

Method

Participants

There were ten participants in the pilot study and 281 participants, in the main study: 146 females, 132 males and 3 unknown. Their ages ranged from 18 to 69 years (M = 26.29, SD = 8.36). The pilot study participants were London based adults from various backgrounds. The main group

of participants were recruited from Amazon Mechanical Turk and were paid £1.00 for their participation. Around half of the participants were from America and the rest India.

Materials and Design

The first part of this questionnaire described a hypothetical scenario in which a kidney had become available for transplant. Participants had to rank 16 hypothetical patients, based on the descriptions provided, in order of preference to receive the kidney. These are seen in Table 1 though not presented in that order. Randomly generated four-digit numbers were used as patient numbers to avoid assigning a specific gender to the patients, in case of an interaction with participants' gender. Participants were also asked to describe the criterion they used to rank the patients, although this was optional. The second part of the survey requested for demographic data and several self-estimates on the following characteristics: regularity of volunteering, intelligence, EI, attractiveness. Pilot work indicated they had no problem with understanding the concepts including EI. The survey was hosted on the online survey platform, Qualtrics (Version November 2016; Qualtrics, 2016). Participants accessed the survey via a link using their personal computers or smartphones.

The four within-subject variables were patient characteristics: regular volunteering (yes/no), intelligence (high/average), EI (high/average) and attractiveness (good-looking/average-looking). The five between-subjects variables were: volunteering involvement, intelligence, EI, attractiveness and participants' nationality. The order of the hypothetical patients was randomised across participants to minimise order effects.

Procedure

A pilot study was conducted on ten participants to determine the suitability of the questionnaire to be used and improvements were made to the questionnaire following feedback

from the pilot participants. This included changing some wording in the instructions as well as the descriptions of the potential patients. The final questionnaire was completed by participants without direct supervision from the researcher. The task was not timed. At the end of the experiment, a debrief page explaining the experimental aim and hypotheses was displayed to the participants. Ethical approval was granted by the departmental ethics committee (UCL: Psychology: CEHP/2013/514.).

Results

The ranks assigned to each hypothetical patient were used in the data analysis. The descriptions of each patient and their mean rankings is displayed in Table 2.

Within-subjects analysis

A 2 (Volunteering) × 2 (Intelligence) × 2 (EI) × 2 (Attractiveness) repeated measures Analysis of Variance (ANOVA) was conducted on the ranks assigned to the hypothetical patients to determine if there were significant differences in ranking across these characteristics. All the patient characteristics were found to be significant. Whether the patient was a volunteer or not had a significant impact on the ranks, F(1, 280) = 589.58, p < .001, $\eta_p^2 = .678$, with participants prioritising patients who volunteered at the food bank (M = 5.99, SD = 3.90) over patients who did not volunteer (M = 11.01, SD = 3.84). The patients' intelligence significantly impacted the rank, F(1, 280) = 208.80, p < .001, $\eta_p^2 = .427$, with highly intelligent patients (M = 7.22, SD = 4.47) being favoured over patients with average intelligence (M = 9.78, SD = 4.38). Patients' EI also significantly affected the rankings, F(1, 280) = 187.95, p < .001, $\eta_p^2 = .402$, with patients with high EI (M = 7.44, SD = 4.55) being prioritised over patients with average EI (M = 9.55, SD =4.42). Patients' attractiveness also significantly affected the rankings but to a smaller extent compared to the other three variables, F(1, 280) = 10.67, p = .001, $\eta_p^2 = .037$), with participants indicating a preference for good-looking patients (M = 8.34, SD = 4.60) over average-looking patients (M = 8.66, SD = 4.61).

There was also a significant Intelligence × EI interaction, F(1,280) = 9.25, p = .003, $\eta_p^2 = .032$. A simple effects analysis (Howell, 2007) revealed that the influence of EI was stronger in highly intelligent patients (high EI, M = 6.05, SD = 4.49; average EI, M = 8.39, SD = 4.13, d = 0.54) than in patients with average intelligence (high EI, M = 8.84, SD = 4.16; average EI, M = 10.71, SD = 4.40, d = 0.44). A significant Volunteering × Intelligence × Attractiveness interaction was also found, F(1,280) = 9.55, p = .002, $\eta_p^2 = .033$. A simple effects analysis showed that there was a greater preference for good-looking patients over average-looking patients under two specific conditions: when the patient did not volunteer and had average intelligence (good-looking, M = 11.97, SD = 3.56; average-looking, M = 12.58, SD = 3.41, d = 0.18) and when the patient volunteered and was highly intelligent (good-looking, M = 4.44, SD = 3.60; average-looking, M = 4.96, SD = 3.70, d = 0.14).

Between-subjects analysis

Following the within-subjects analysis, the five participant variables were examined separately to see if these affected the way the participants ranked the patients. All the five participant variables were coded dichotomously. Full results of these split-plot ANOVAs are available from the third author. The participant volunteering regularity was coded as either 'frequent' or 'infrequent', their self-reported intelligence, EI and attractiveness was coded as either 'above average' or 'below average', whilst their nationalities were coded as either 'Eastern' or 'Western', depending on whether they were from an eastern or western country. A cultural definition of Eastern and Western countries was used, thus countries in Asia were classified under

Eastern and Europe, North America and Australia were classified under Western. The number of participants in each dichotomy is displayed in Table 3. Five separate five-way split-plot ANOVAs were conducted, with each of the five participant variable (volunteering regularity, intelligence, EI, attractiveness and nationality) as the between-subject variable and the four patient characteristics as the within-subjects variables in each analysis. Two, three and four-way interactions were further analysed.

Participant volunteering frequency interactions. The Participant Volunteering Frequency × Volunteering interaction was non-significant, F(1, 279) = 0.38, p = .54. There were three unexpected interactions. The Participant Volunteering Frequency × Volunteering × Intelligence × Attractiveness interaction, F(1, 279) = 3.80, p = .052, $\eta^2_p = .013$ and the Participant Volunteering Frequency × Volunteering × EI × Attractiveness interaction, F(1, 279) = 3.83, p= .051, $\eta^2_p = .014$ were both marginally significant. There was a significant Participant Volunteering Frequency × Volunteering × Intelligence × EI × Attractiveness interaction, F(1, 279)= 3.97, p = .047, $\eta^2_p = .014$. This indicates that the participants' own volunteering frequency did not influence how they used any one criteria, but affected the ranking holistically.

Participant intelligence. There was a highly significant Participant Intelligence × Intelligence interaction, F(1, 279) = 39.76, p < .001, $\eta^2_p = .125$, with a simple effects revealing that participants who self-reported as being above average in intelligence showing a stronger discrimination in their rankings (high intelligence, M = 6.92, SD = 4.38; average intelligence, M =10.08, SD = 4.28; d = 0.73) than participants who self-reported as being below average in intelligence (high intelligence, M = 8.14, SD = 4.62; average intelligence, M = 8.86, SD = 4.58; d = 0.16). There was a significant Participant Intelligence × Volunteering interaction, F(1, 279) =5.55, p = .019, $\eta^2_p = .020$. A simple effects analysis showed that participants who self-reported as being above average in intelligence showing a stronger preference for patients who volunteer (volunteer, M = 5.85, SD = 3.79; do not volunteer, M = 11.14, SD = 3.75; d = 1.40) than participants who self-reported as being below average in intelligence (volunteer, M = 6.42, SD = 4.17; do not volunteer, M = 10.59, SD = 4.06; d = 1.01). There was also a significant Participant Intelligence × EI interaction, F(1, 279) = 9.34, p = .002, $\eta^2_p = .032$. A simple effects analysis revealed that participants who self-reported as being above average in intelligence showing a stronger preference for patients with high EI (high EI, M = 7.31, SD = 4.52; average EI, M = 9.68, SD = 4.39; d = 0.53) than participants who self-reported as being below average in intelligence (high EI, M = 7.85, SD = 4.62; average EI, M = 9.15, SD = 4.51; d = 0.28).

Participant EI. The Participant EI × EI interaction was not significant, F(1, 279) = 2.43, p = .12. However, there was a significant Participant EI × Volunteering × EI interaction, F(1, 279) = 3.96, p = .048, $\eta^2_p = .014$. A simple effects analysis showed that participants who self-reported having above-average EI have greater preference for patients who volunteer regularly and have high EI and lower preference for patients who do not volunteer and have average EI (volunteer regularly and high EI, M = 4.61, SD = 3.61; do not volunteer and average EI (volunteer regularly and high EI, M = 4.61, SD = 3.61; do not volunteer and average EI (volunteer regularly and high EI, M = 5.43, SD = 4.12; do not volunteer and average EI, M = 11.78, SD = 3.86, d = 1.59).

Participant attractiveness. The Participant Attractiveness × Attractiveness interaction was not significant, F < 1. There were no significant interactions between participant attractiveness and any of the other patient variables.

Thus, overall, there was little evidence for in-group biases.

Discussion

The results show that all four patient variables were significant factors affecting participants' ranking of the hypothetical patients, supporting four of the five hypotheses in this study. The findings that highly intelligent patients and patients who volunteer were prioritised over those of average intelligence and those who do not volunteer, respectively, are in line with previous research concerning the same variables (Furnham et al., 2000; Furnham, Thomas, et al., 2002). The findings that good-looking patients and patients with high EI were prioritised over average-looking patients and patients with average EI are novel yet further research will be required in order to confirm that they are replicable.

The largest effect size was found for the volunteering variable, which is based on the use of the *reciprocity* principle. People may believe that volunteers deserve priority because they have helped society in the past. This is aptly supported by participants' rationale in the belief that "karma exists" and that "people who do good deserve good". It is also assumed that patients who volunteered regularly were also likely to continue volunteering in the future, thus increasing their instrumental value, namely value to others. The large effect size could partly be due to the fact that this was the only variable that could be fully controlled by the patients, whilst the other three variables are to some extent genetically determined. Therefore, participants might have placed greater importance on this variable when ranking the patients.

A large effect size was also found for the cognitive intelligence variable. Participants appeared to take a utilitarian perspective when prioritising highly intelligent patients, as confirmed by their justifications that highly intelligent people were more beneficial to society. Only one participant approached this criterion from a medical perspective, suggesting that highly intelligent people might be more likely to adhere to the strict post-transplant medication regimen and has

been supported amongst people at risk of developing cardiovascular disease (Deary et al., 2009). This is worthy of note, as having an intellectual disability (ID) or low IQ does not constitute criteria for exclusion from receiving solid organ transplants. Patients with ID have been reportedly excluded from organ transplant lists on the basis of other general criteria, such as being incapable of dutifully adhering to post-transplant medication (Community Ethics Committee, 2014; Veatch, 2001). There were also two significant interactions with the other patient variables: intelligence interacted with volunteering frequency and attractiveness, and separately with EI. These interactions suggest that participants were making judgments based on weighted information on the different patient characteristics.

Additionally, a large effect size was found for the EI variable. Participants favoured patients with high EI over patients with average EI. This decision was also probably guided by utilitarian principles, as participants commented that patients with high EI would have a greater positive impact on their community. Thus, having high EI appears to increase one's instrumental value. However, the exact reason as to why they might have a positive impact on their community was not explained. Nevertheless, one might presume that this is due to them having better relationships with others as a result of possessing key qualities for successful relationships, such as empathic perspective-taking and cooperative behaviour (Schutte et al., 2001).

Although a significant result was found for the attractiveness variable, the effect size was small, suggesting that this was not considered to be a very important criteria. Participants prioritised good-looking patients over average-looking patients, but it is not certain what the rationale behind this decision was.

Some, but very few participants provided some explanation/elaboration as to the reasons for their judgements. Retrospectively it seems a very sensible procedure in order to fully understand, rather than simply imply, the rationale for these judgements, however disappointingly few participants responded to this offer.

Only three participants elaborated on their use of attractiveness as a criteria. Two participants supported the notion that attractiveness was used as an indicator of a patient's health, whilst the other participant approached the variable with a social usefulness perspective, suggesting that looking at attractive people brings joy to the viewer. There were more participants who provided justification for prioritising average-looking patients over good-looking patients, stating that average-looking patients were nicer individuals. This means that the halo effect is unlikely to be the underlying factor behind the overall preference for good-looking patients, although it should be noted that this is based on a relatively small number of participants who elaborated on their rationale for ranking. As there have been no precedence for the investigation of attractiveness in a scarce resource methodology, the small effect size for the attractiveness variable suggests that this result needs to be treated with caution.

With regards to the participant-patient characteristics interaction, there were no significant personal preferences and thus hypotheses 5a, 5b, 5c and 5d were not supported. This is inconsistent with the existence of in-group favouritism effects in some of the previous studies, which showed that left-wing participants favoured left-wing patients whilst right-wing participants favoured right-wing patients; non-smoking participants favoured non-smoking patients more than smoking participants and vice versa and white participants prioritised white prisoners over black and vice versa (Furnham, 1996; Furnham et al., 2000; Furnham, McClelland, & Drummond-Baxter, 2010).

Nonetheless, several of the participants' characteristics interacted with some of the patient variables, with participants in different groups discriminating against patients to different extents, based on a patient characteristic. This is similar to the finding by Furnham et al. (2011) with respect

to smokers. There were two marginally significant four-way interactions and one significant fiveway interaction for participant volunteering frequency, suggesting that participants who volunteered frequently ranked the patients a little differently to participants who volunteered infrequently, although both groups of participants generally preferred patients who volunteered regularly. There were three two-way interactions between participant intelligence and patient volunteering behaviour, intelligence and EI respectively. The participant intelligence \times patient intelligence interaction was the strongest out of all three interactions, with the participants who self-reported as being above average in intelligence differentiating between patients based on their intelligence to a much greater extent than participants who were below average in intelligence, who still prioritised highly intelligent patients. Participants who were above average in intelligence also assigned much higher ranks to patients who volunteered regularly and patients who had high EI and much lower ranks to patients who did not volunteer and patients who had average EI. However, for participants who were below average in intelligence, the difference in the mean ranks for the patient who volunteered and the patient who did not volunteer was much less pronounced, as was the difference between the patient with high EI and the patient with average EI. These findings seem to suggest that participants who were above average in (self-rated) intelligence were more diligent in ranking the patients on the basis of social usefulness, possibly hinting at some form of elitism. However, these results should be interpreted with caution, as the two groups of participants are rather unbalanced in numbers. Nonetheless, similar results have been found by Sachdev and Bourhis (1987): members of experimentally induced high status groups displayed more favouritism towards in-group members and were more biased against out-group members, whilst members of experimentally induced low status groups tended to favour high status groups.

There was a significant three-way Participant EI \times Volunteering \times EI interaction. Participants who self-reported as being above average in EI favoured patients who volunteered and had high EI to a greater extent than participants who self-reported as being below average in EI. Those who self-reported as being above average in EI also ranked patients who did not volunteer and had average EI much lower than those who self-reported as being below average. It is interesting to note that Participant EI did not interaction with EI alone, but interacted with both Volunteering and EI. According to Mayer, Salovey and Caruso (2000), people high in EI tend to use their feelings to guide their judgments. Therefore, participants with high EI could have formed more positive feelings about patients who volunteer regularly and have high EI, thus assigning them higher ranks and similarly assigning lower ranks to patients whom they have less positive feelings about (those who did not volunteer and who had average EI).

There were no significant interactions between participants' self-reported attractiveness and patient variables, indicating that participants who were above average in attractiveness and participants who were below average in attractiveness did not differ in their rankings. Interestingly, this was the only self-reported variable for which the 'below average' group is larger than the 'above average' group.

A possible limitation of the present research is that the use of a rank-order could have forced participants to use of criteria to allocate the resource even if they did not want to use any criteria. Ubel (1999) has found that when the option of equal allocation of resource was not made explicit, less people chose it as it was not salient. In this study, the option to randomly allocate the resource and how it might be done (i.e., by submitting the rankings in the order they appeared in, which were already randomised across participants) was not made explicit. However, the use of rank-order and not explicitly mentioning the possibility of random allocation were intentional

choices in designing the experiment, to simulate real-life decision-making where medical professionals would have to prioritise some patients over others. Nonetheless, future research could investigate the same four variables but have participants *rate* each patient on a Likert scale rather than place them in rank order. In addition, the variables of EI and attractiveness, being novel, warrant further study.

The rating vs ranking issue has been explored before. The problem arises when large numbers of participants rate all patients as urgent/equally deserving so in effect making no decisions at all. Indeed many participants indicate some "discomfort" with this task and complain of "not wanting to play God or an ethics committee". The rank order method, therefore more than the rating method, reveals a participants' underlying priorities.

Another limitation pertains to the accuracy of the self-ratings of intelligence and emotional intelligence. We know from previous research in this area that few people are likely to rate themselves as below average and that the correlation between self-ratings and test scores is around r=.5 (Furnham, 2016). Nevertheless though skewed the self-ratings are indicative of actual scores.

Conclusion and Implications

This study showed that given minimal data on people wanting to have scarce medical resources kinder, brighter, more charming and attractive people are prioritised as predicted. Social usefulness (contribution to others) appears to be rewarded.

This study may have real world implications for those involved in organ donation and acceptance. Clearly those who volunteer for organ donation would be interested in who might receive their organs and the criteria by which they are chosen. Equally ethics committees and medical decision makers may also be interested in what lay people feel is most fair. That is, albeit that it is often implicit, doners and sometimes ethics committee members follow an allocation principle as

outlined above. This study showed the importance of the reciprocity principle, namely that lay people believe that those who have given to others by volunteering deserve "repayment" by prioritization. Future research may explore what particular types of giving to society are thought of as most deserving of an organ transplant.

References

Banks, G. J. (1995). Legal & ethical safeguards: Protection of society's most vulnerable participants in a commercialized organ transplantation system. *American Journal of Law & Medicine*, 21, 45–110.

Broad, C. D. (1930). Five types of ethical theory (Routledge). London.

- Community Ethics Committee. (2014). Organ Transplant Recipient Listing Criteria. Boston, MA. Retrieved from <u>https://bioethics.hms.harvard.edu/sites/g/files/mcu336/f/CEC-</u> <u>REPORT-Organ-Transplant-Listing-Criteria-February-2014.pdf</u>
- Deary, I. J., Gale, C. R., Stewart, M. C. W., Fowkes, F. G. R., Murray, G. D., Batty, G. D., & Price, J. F. (2009). Intelligence and persisting with medication for two years: Analysis in a randomised controlled trial. *Intelligence*, *37*, 607–612. https://doi.org/10.1016/j.intell.2009.01.001
- Dolan, P., & Cookson, R. (2000). A qualitative study of the extent to which health gain matters when choosing between groups of patients. *Health Policy*, *51*, 19–30.
- Furnham, A. (1996). Factors relating to the allocation of medical resources. *Journal of Social Behavior and Personality*, 11, 615–624.
- Furnham, A. (2016) "Whether you think you can, or you think you can't--you're right." Differences and consequences of beliefs about your ability. In Robert Sternberg, Susan

Fiske, and Don Foss (Eds.). *Scientists Making a Difference: The Greatest Living Behavioral and Brain Scientists Talk about Their Most Important Contributions*. Cambridge: Cambridge University Press pp 297-230.

- Furnham, A., & Briggs, J. (1993). Ethical ideology and moral choice: A study concerning the allocation of medical resources. *Journal of Social Behavior and Personality*, *8*, 87–98.
- Furnham, A., McClelland, A., & Drummond-Baxter, E. (2010). The allocation of a scarce correctional resource: Deciding who is eligible for an electronic monitoring program. *Journal of Applied Social Psychology*, 40, 1605–1617. https://doi.org/10.1111/j.1559-1816.2010.00631.x
- Furnham, A., & Petrides, K. V. (2007). Factors affecting the allocation of social housing to people. North American Journal of Psychology, 9, 545–554.
- Furnham, A., Petrides, K. V., & Callahan, I. (2011). Prioritizing patients for surgery : Factors affecting allocation of medical resources for kidney transplantation, IVF, and rhinoplasty. *Journal of Applied Social Psychology*, 41, 588–608.
- Furnham, A., Simmons, K., & McClelland, A. (2000). Decisions concerning the allocation of scarce medical resources. *Journal of Social Behavior and Personality*, 15, 185–200.
- Furnham, A., Thomas, C., & Petrides, K. V. (2002). Patient characteristics and the allocation of scarce medical resources. *Psychology, Health & Medicine*, 7, 99–106. https://doi.org/10.1080/13548500120101595
- Furnham, A., Thomson, K., & McClelland, A. (2002). The allocation of scarce medical resources across medical conditions. *Psychology and Psychotherapy* 75, 189–203.
- Gardham, K., & Brown, R. (2001). Two forms of intergroup discrimination with positive and negative outcomes: Explaining the positive-negative asymmetry effect. *British Journal of*

Social Psychology, 40, 23–34.

- Howell, D. C. (2007). *Statistical Methods for Psychology* (6th ed.). Belmont CA: Thompson Wadsworth
- Jones, B. C., Little, A. C., Penton-Voak, I. S., Tiddeman, B. P., Burt, D. M., & Perrett, D. I. (2001). Facial symmetry and judgements of apparent health: Support for a "good genes" explanation of the attractiveness-symmetry relationship. *Evolution and Human Behavior*, 22, 417–429.
- Lamb, D. (1990). Organ transplants and ethics. New York: Routledge.
- Mayer, J. D., Salovey, P., & Caruso, C. D. (2000). Competing models of emotional intelligence. In R. J. Sternberg (Ed.), *Handbook of human intelligence* (pp. 396-420). New York:
- Mill, J. S. (1863). Utilitarianism. London: Parker, Son and Bourn.
- Miller, A. G. (1970). Role of physical attractiveness in impression formation. *Psychonomic Science*, *19*, 241–243.
- Mossialos, E., & King, D. (1999). Citizens and rationing: Analysis of a European survey. *Health Policy*, 49, 75–135.
- Persad, G., Wertheimer, A., & Emanuel, E. J. (2009). Principles for allocation of scarce medical interventions. *The Lancet*, *373*, 423–431.
- Petrides, K. V., Mikolajczak, M., Mavroveli, S., Sanchez-Ruiz, M. J., Furnham, A., & Perez-Gonzales, J. C. (2016). Developments in trait emotional intelligence research. *Emotion Review*, 8, 335-344.

Qualtrics (2016) Qualtrics (November 2016) [Online software]. Provo, UT: Qualtrics.

Ratcliffe, J. (2000). Public preferences for the allocation of donor liver grafts for transplantation. *Health Economics*, 9, 137–148..

- Rodríguez, E., & Pinto, J. L. (2000). The social value of health programs: Is age a relevant factor? *Health Economics*, *9*, 611–621.
- Sachdev, I., & Bourhis, R. Y. (1987). Status differentlals and intergroup behaviour. *European Journal of Social Psychology*, *17*, 277–293.
- Schulte, M. J., Ree, M. J., & Carretta, T. R. (2004). Emotional intelligence: Not much more than g and personality. *Personality and Individual Differences*, *37*, 1059–1068.
- Schutte, N. S., Malouff, J. M., Bobik, C., Coston, T. D., Greeson, C., Jedlicka, C., ... Wendorf,
 G. (2001). Emotional intelligence and interpersonal relations. *Journal of Social Psychology*, *141*, 523–6536.
- Schwappach, D. L. B. (2003). Does it matter who you are or what you gain? An experimental study of preferences for resource allocation. *Health Economics*, 12, 255–267. <u>https://doi.org/10.1002/hec.713</u>
- Swami, V. & Furnham, A. (2008). The Psychology of Physical Attraction. London: Routledge
- Tai, M. C., & Lin, C. S. (2001). Developing a culturally relevant bioethics for Asian people. *Journal of Medical Ethics*, 27, 51–54.
- Tong, A., Howard, K., Jan, S., Cass, A., Rose, J., Chadban, S., ... Craig, J. C. (2010).
 Community preferences for the allocation of solid organs for transplantation: A systematic review. *Transplantation*, *89*, 796–805. https://doi.org/10.1097/TP.0b013e3181cflee1
- Ubel, P. A. (1999). How stable are people's preferences for giving priority to severely ill patients? *Social Behavior and Personality*, *49*, 895–903.
- Wilmot, S., & Ratcliffe, J. (2002). Principles of distributive justice used by members of the general public in the allocation of donor liver grafts for transplantation: A qualitative study. *Health Expectations*, 5, 199–209.

Table 1

Patient description and mean rankings

Description	Mean (SD)	Rank
A. volunteers regularly at a foodbank Is good-looking, highly intelligence	3.30 (3.62)	1
B. volunteers regularly at a foodbank is average-looking, highly intelligent and of high Emotional Intelligence	3.69 (3.63)	2
C. volunteers regularly at a foodbank is good-looking, highly intelligent and of average Emotional Intelligence	5.58 (3.20)	3
D. volunteers regularly at a foodbank, is average-looking, highly intelligent and of average Emotional Intelligence	6.23 (3.32)	4
E. volunteers regularly at a foodbank, is average-looking, and of average intelligence and high Emotional Intelligence	6.32 (3.48)	5
F. volunteers regularly at a foodbank, is good-looking, and of average intelligence and high Emotional Intelligence	6.41 (3.50)	6
G. volunteers regularly at a foodbank, is good-looking, and of average intelligence and average Emotional Intelligence	8.05 (3.55)	7
H. volunteers regularly at a foodbank, is average-looking, and of average intelligence and average Emotional Intelligence	8.34 (3.81)	8
I. does not do volunteer work, is good-looking, highly intelligent and of high Emotional Intelligence	8.57 (3.83)	9
J. does not do volunteer work, is average-looking, highly intelligent	8.62 (3.73)	10
K. does not do volunteer work, is good-looking, highly intelligent and	10.86 (3.42)	11
L. does not do volunteer work, is average-looking, highly intelligent	10.89 (3.25)	12
M. does not do volunteer work, is good-looking, and of average	10.99 (3.28)	13
N. does not do volunteer work, is average-looking, and of average	11.65 (3.05)	14
O. does not do volunteer work, is good-looking, and of average	12.96 (3.56)	15
P. does not do volunteer work, is average-looking, and of average intelligence and average	13.51 (3.50)	16

Emotional Intelligence

Participant variable	Code	Ν
Volunteering	Frequent	162
C C	Infrequent	119
Intelligence	Above average	212
-	Below average	69
Emotional Intelligence	Above average	171
	Below average	110
Attractiveness	Above average	131
	Below average	150
Nationality	Eastern	100
2	Western	151

Table 2					
Number	of partie	cipants	in ec	ich g	roup
D		1 1			