



Investigating the role of procrastination in the discrepancy between organ donor attitude and behaviour

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Abstract

An overwhelming majority of the UK population are in support of organ donation (90 per cent) but just under one-third of this majority are signed up to be donors (NHSBT, 2010). This study aimed to explore this discrepancy between attitude and behaviour by considering the role of procrastination, a factor not appearing to have been previously looked at in this context. 198 participants completed questionnaires which included measures of procrastination and intention time. It was hypothesised that individuals who say they intend but are yet to sign the register will show higher trait procrastination, with longer intention times relating to higher levels of procrastination. The results did not support this, showing no relationship between intention time and trait procrastination, as measured by the General Procrastination Scale (Lay, 1986) or by a specially constructed measure of state procrastination. Claiming to need more information on knowing how to sign the register was predictive of intention time. The data are interpreted as suggesting that delays in intention time relate not to behavioural procrastination but to decisional procrastination.

KEY WORDS:	ORGAN DONATION	PROCRASTINATION	PERSONALITY	ATTITUDE-BEHAVIOUR	QUESTIONNAIRE
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Introduction

In the UK 1000 of the 10,000 people on the transplant waiting list die each year due to a shortage of donated organs (NHS Blood and Transplant (NHSBT), 2010). With the negative balance between need and supply common worldwide (Brug, Van Vugt, Van Den Borne, Brouwers & Van Hooff, 2000) it could be assumed that the population generally have a negative attitude towards organ donation. However this is not the case. In fact, in the UK, 90% of individuals indicate that they are in support of organ donation (NHSBT, 2010). The discrepancy between attitudes and number of donated organs is highlighted when one discovers, despite overwhelming support, only 28% of people have signed the organ donor register (NHSBT, 2010). The NHSBT activity report of 2009/2010 (NHSBT, 2010) does indicate a rise in the number of organ donors (7% increase); however this is alongside an increasing need for organs, due to “increasing incidence of end-stage failure of many vital organs” (Abouna, 2008, p. 34). Barriers preventing individuals becoming organ donors require exploration in order to find ways to improve campaigns and the targeting of interventions. This study hopes to contribute to the understanding of the attitude-behaviour discrepancy of potential donors, primarily investigating the role of procrastination within this relationship.

Extensive research has been conducted on factors underlying individual differences in attitudes and behaviours to organ donation. Cognitive based factors explored include individuals' knowledge about organ donation (Brug et al, 2000; Morgan & Miller, 2002; Ryckman, Gold, Reubsat & Van Den Borne, 2009; Rumsey, Hurford & Cole, 2003) and perceived social norms (Morgan, Stephenson, Harrison, Afifi & Long, 2008) and how these can influence the opinions of individuals towards organ donation. Non-cognitive elements have also been investigated and show that worries over body integrity (Cleveland, 1975), fear of jinxing oneself (Morgan et al, 2008) and fears surrounding death (Besser, Amir & Barkan, 2004; Cleveland, 1975) are influential on attitudes and decisions to donate.

However, Baluch, Randhawa, Holmes and Duffy (2001) investigated personality in relation to organ donor attitude and behaviour, finding behaviour was not related to attitude but particular personality traits. Thus, Baluch et al (2001) suggest the role of personality as a potentially influential component in the realm of organ donation. Research has covered the role of dispositional factors, such as personality, and contrasted donors and non-donors regarding some measures of personality (Cleveland, 1975). Higher levels of psychoticism and neuroticism have been related to absence of organ donor behaviour i.e. signing an organ donor card (Baluch et al, 2001) and the signing of one being found to have a positive relationship with altruism (Morgan & Miller, 2002). Other individual characteristics have also been explored between donors and non-donors; such as hedonism and its impact on intention to register (Ryckman et al, 2009), and how low degrees of authoritarianism (Besser et al, 2004) and higher levels of humour (Lefcourt & Shepherd, 1995) are more common in donors. There are conflicting findings regarding the role of religion (Besser et al, 2004; Nolan & Spanos, 1989; Rumsey et al, 2003), gender (Besser et al, 2004; Mocan & Tekin, 2007; Sanavi, Afshar, Lotfizadeh & Davati, 2009) and race (Manninen & Evans, 1985; Yuen et al, 1998). The more that is found regarding barriers to organ donation the more focused campaigns can become in the hope of relieving said barriers. As mentioned above, both attitudes and dispositions have been considered in the attitude-behaviour relationship but the role of procrastination

appears to have not yet been investigated. It could be that procrastination as a personality trait or domain related behaviour determines organ donor behaviour more so than attitudes.

Procrastination *has* been investigated in other health related behaviours. Research conducted by Sirois, Melia-Gordon, and Pychyl (2003) and Sirois (2007) found procrastination was related to less health encouraging behaviours (eating healthily), less safety behaviours within the home (e.g. testing a smoke alarm), fewer regular health check-ups and the postponing of medical treatment. From this it appears that procrastination does occur in behaviours related to health, and may even have a role in one-off activities which require little else but being done e.g. booking an appointment.

Moreover, procrastination has been found relating to end of life/advance directives (Douglas & Brown, 2002; Llovera et al, 1999) a topic arguably similar to that of organ donation as a one-off behaviour concerning the end of life. Attitudes towards advance directives were found to be generally positive (Douglas & Brown, 2002), but numbers of individuals initiating them has been shown to be low (Llovera et al, 1999), similar to the attitude and behaviour relationship seen with organ donor registration. Furthermore, in investigating reasons behind the deficit in the numbers initiating advance directives, reasons were given from which comparisons could be drawn with organ donation, for example individuals trust others to make the right decision for them, having issues with the documents required, feeling there was no need to do so at the present time, continually delaying completing one (the highest given factor) and that decisions about the subject made them uneasy (Douglas & Brown, 2002). In a further study into reasons behind not initiating advance directives, similar responses were given such as; procrastination, not having previously considered it, considering themselves too young, not caring about what happens and some individuals expressing anxieties surrounding the completion of one resulting in inadequate medical care (Llovera et al, 1999).

It could be reasonable to assume that, due to the similarities between advance directives and organ donation that reasons behind not initiating a living will could bear similarities to organ donation, specifically procrastination. If this is the case, procrastination regarding signing the organ donor register could relate to the domain itself i.e. to do with the characteristics of the task of signing the register. Furthermore, fear regarding mortality and death was a not a primary issue put forth in either the work of Douglas and Brown (2002) or Llovera et al (1999) regarding advance directives. However research on the barriers to organ donation indicates that a characteristic of non-donors is an unwillingness to accept the idea of mortality and avoidance of matters surrounding preparation for death (Cleveland, 1975). Thus this additional factor could indicate further reasoning for procrastination in organ donation.

Despite a literature search failing to reveal research on procrastination in relation to organ donor behaviour, recognition of its prevalence within this realm appears evident in the recent NHS "Prove it" campaign, employing phrases such as "*I haven't got round to joining*" (NHSBT, 2010 sect. 'Publications'). Alongside this, research into explanations behind the lack of individuals signing the organ donation register also highlighted such reasons as individuals wanted to but had not got around to doing it, family discussion of the issue was needed before they signed up and that there was a need "to make the issue immediate and relevant to them and their family" (Johnson, 2009, p. 3). These findings suggest that intending individuals are putting off signing the register and thus it could be suggested that procrastination as a

variable in the discrepancy between attitude and behaviour is an area worthy of investigation.

Procrastination has been shown to be a common behaviour, with prevalence of self-reported chronic procrastination reaching twenty per cent in adult samples (Harriott & Ferrari, 1996 cited in Jackson, Fritch, Nagasaka & Pope, 2003), high degrees of procrastination in around forty per cent of students (Rothblum, Solomon & Murakami, 1986), and procrastination for more than an hour everyday on academic tasks being reported by around ninety per cent of undergraduates (Klassen, Krawchuk & Rajani, 2008).

There has been a substantial collection of work surrounding procrastination, specifically the reasons and links regarding dilatory behaviour (Steel, 2007). Research has highlighted characteristics relating to trait procrastination, the suggestion that one with such a trait is predisposed to act in a procrastinatory manner, and the situations that tend to lend themselves to such behaviour (Senécal, Lavoie & Koestner, 1997). In regard to procrastination being considered a trait, Steel (2007) in his meta-analysis, concludes a biological element to procrastination, on the basis of results of twin studies e.g. Arvey, Rotundo, Johnson, & McGue, (2003), cited in Steel (2007). Further research has explored procrastination's integration with other personality traits, furthering the behaviours concept as a disposition, such as its negative relationship with conscientiousness and positive association with neuroticism (Lay, 1997; Milgram & Tenne, 2000; Schouwenburg & Lay, 1995). High levels of procrastination have also been associated with other characteristics such as anxiety (Rothblum et al, 1986) and dimensions of procrastination with types of perfectionism (Flett, Blankstein, Hewitt & Koledin, 1992; Onwuegbuzie, 2000). However, as pointed out by Steel (2007), unless dilatory behaviour occurs at random, task characteristics must be influential.

Senécal et al (1997) emphasise this need to also consider situational factors under which individual's tend to procrastinate, which is important considering the finding that task factors account for individual's procrastination in 50% of cases (Briody, 1980 cited in Steel, 2007). Research has indicated that individuals tend to avoid, i.e. procrastinate, when the given task is perceived as unpleasant (Steel, 2007; Pychyl, Lee, Thibodeau & Blunt, 2000; Ferrari & Tice, 2000; Sirois, et al, 2003; Milgram, Marshevsky & Sadeh, 1995; Milgram, Sroloff & Rosenbaum, 1988). Van Eerde (2000) highlights the flexibility of procrastination, stating that what tasks are considered as unappealing could vary between individuals. These individual differences found as a result of the task could account for the behavioural differences seen in those who intend and have or have not signed the organ donor register.

For some people the topic of organ donation may be an unpleasant one to have to consider. This coincides with research on health behaviours which were suggested to be a subject of procrastination due to their unpleasantness (Sirois et al, 2003) and advance directives in which subjects reported discomfort in thinking about end of life issues (Douglas & Brown, 2002). Research on barriers to organ donation has highlighted the presence and effects of fear of bodily mutilation and general disgust toward the topic (Morgan et al, 2008) which could support the idea that some individuals experience aversive affective states when considering organ donation. Thus procrastination about organ donation is perhaps the result of the unpleasantness of the task. Therefore, despite being in favour and having the intention, individuals avoid signing the register to escape its negative connotations.

Procrastinators have also been found to show difference in how they regard time, with procrastinators demonstrating a reduced future focus (Jackson et al, 2003; Diaz-Morales, Ferrari & Cohen, 2008; Specter & Ferarri, 2000). It may be that this lack of focus on the future in procrastinators prevents them thinking about their death and things that would need to be put in place should such event occur, such as becoming an organ donor. Reasoning behind not signing an advance directive such as it not being needed at the moment, not having previously thought about it (Douglas & Brown, 2002), and feeling too young to initiate one (Llovera et al, 1999) could possibly be construed as signs of a lack of future focus. Furthermore, research on organ donation has shown that non-donors are less likely than those who have signed an organ donor card to recognise their mortality or to have made future preparations regarding their death, such as writing a will (Cleveland, 1975).

Senécal, et al (1997) suggests there is an interaction between situational characteristics and procrastination as a personality trait that lead to dilatory behaviour. Senécal et al (1997) looked to bring together ideas of predisposed individuals and situational characteristics and determine what brings about dilatory behaviour in those prone to procrastinate. In their study, they found no effect of trait procrastination alone, but alongside the situational characteristic of expected evaluation from others (task feedback), overall completion of tasks was delayed, as was the completion of unappealing ones (Senécal et al, 1997).

In the context of organ donor register signing, could it be that the situational factors involved in signing the register provoke procrastination, and this paired with an individual high in the trait of procrastination leads to positive intentions but poor behavioural response.

The aim of this study is to investigate whether the people who are willing to donate their organs but are yet to sign the organ donor register are higher on procrastination. This will be determined by looking at trait procrastination, as measured by The General Procrastination Scale (Lay, 1986), and a devised measure of situation specific procrastination, referred to as state. The former will indicate whether general procrastination leads individuals to put off signing the organ donor register, the latter will attempt to capture specific reasons for procrastination in the context of organ donor register signing.

Based on the findings of previous research on health behaviours (Sirois et al, 2003; Sirois, 2007) advance directives (Douglas & Brown, 2002; Llovera et al, 1999) and alongside research on procrastination as a trait (e.g. Steel, 2007; Schouwenburg & Lay, 1995) and as a response to situation characteristics e.g. task pleasantness (Senécal et al, 1997) a positive relationship between level of procrastination, on both measures, and length of intention time is predicted. Those higher on measures of procrastination will tend to state that they intend to donate but at a later date than those lower on procrastination measures. Other more general relationships such as that between procrastination and other personality traits, such as conscientiousness, are expected to conform to previous research (e.g. Milgram & Tenne, 2000).

The objective is not only to establish the role of procrastination within the attitude-behaviour relationship but to determine whether it plays a greater role in intention time than attitudes towards organ donation. By examining the determinants of organ donor behaviour, the focus of future interventions can be directed towards attempting to influence either attitudes or behaviour.

Method

Participants

198 students, 68 males and 129 females (one participant did not specify gender) whose ages ranged from 17 to 32 ($M = 20.8$, $SD = 1.83$) completed the questionnaire. The majority, 53 per cent, of respondents were Christian, 40 per cent responded that they were not religious, and 87 per cent of respondents were White-British. Due to the small number of participants falling into ethnicities outside the ethnicity bracket of 'White', 14 participants were dropped from the analysis as previous research states that these ethnic groups tend to have strong responses to the topic of organ donation (e.g. Cheung, Alden & Wheeler, 1998), but there were insufficient numbers in the current sample to be able to explore this difference. Therefore, subsequent analyses will include 184 participants (64 males and 120 females.)

Materials

Initial ideas surrounding the creation of specific questionnaire sections were drawn from previous research (e.g. for items on attitude, research that had explored barriers to organ donation was considered, such as Morgan et al, 2008). In addition, a small number of short informal exploratory interviews were conducted with those known to the experimenters to gather further ideas. These interviews lead to the inclusion of an "unsure" option regarding whether an individual was on the organ donor register and the options available for item responses.

A pilot questionnaire, completed by 39 individuals, highlighted necessary amendments that needed to be made for the final questionnaire. The pilot was used to identify problems with formatting and confusion regarding items or how to fill out the questionnaire. A copy of the pilot questionnaire can be found at appendix A, p.41, with a report on the pilot at appendix B, p.49.

The questionnaire consisted of 8 sections. All sections bar D and F were constructed measures for the purpose of this research. A copy of the final questionnaire transcribed with coding can be found at appendix C, p.53.

Organ Donation. Section A asked respondents about their position on the organ donation register. Participants who were not signed up were asked whether they intended to register, if so when. The measure of intention time ranged from "this week" to "eventually" (See appendix C, p.54).

Specific State procrastination. In creating this section ideas were drawn from research findings on advance directives, like that of people feeling young (Llovera et al, 1999) reflected in the question "*There is no hurry for me to do so right now*". A Likert scale was chosen above a ranking system after a pilot of both indicated the superiority of the Likert scale due to it providing the opportunity to equally rate items and select a neutral option.

The specific state section required responses on a 5 point Likert scale from Strongly Agree to Strongly Disagree to indicate how much an item affected a respondent's decision to sign the register e.g. "*I need more information on knowing how to sign the register*". A higher score on this scale would indicate a higher degree of procrastination surrounding organ donation behaviour. This section was only required to be filled out by those intending to register as an organ donor. (See appendix C, p.55).

Attitudes. Section C consisted of 21 items surrounding attitudes and beliefs to organ donation. Questions were designed to include both cognitions and emotions. Respondents were to indicate on a Likert scale their agreement with items such as "*To not donate your organs is selfish*" and reversed items such as "*It is important for*

me to be buried or cremated intact". A higher score on this measure indicated a more positive attitude (See appendix C, p. 56).

Trait procrastination. Section D was the General Procrastination scale (Lay, 1986). This measure of trait procrastination has been used in research in other areas and been found to be reliable, with Cronbach's Alpha being shown at .82 (Lay, 1986), .89 (Sirois et al, 2003) and .90 (Sirois, 2007). The scale consists of 20 items surrounding procrastination in daily activities, and includes items such as "*I am continually saying I'll do it tomorrow*", ten of which were reversed e.g. "*I generally return phone calls promptly*". Participants were to indicate how characteristic behaviours were of them on a scale, similar to a Likert scale, ranging from Extremely Characteristic to Extremely Uncharacteristic. A higher score was indicative of a higher level of trait procrastination (See appendix C, p. 57).

The following are themes being primarily investigated by co-researchers.

Altruism: Section E consisted of seven questions surrounding altruistic behaviour. Each item had 4 responses, from "yes regularly" to "never", among which the respondent must select one for each question. This section included items such as "*Have you ever donated money to a charity?*". A higher score on this measure was taken as a higher level of altruism. (see appendix C; p. 58).

Personality scale: Section F is a scale based on the Big 5 personality scale (Goldberg, 1992). Twenty-five items measured the personality dimensions of extraversion, openness to experience, conscientiousness, agreeableness and neuroticism (See appendix C, p. 59).

Death Anxiety: This section was a constructed measure of death anxiety, consisting of 17 items. Participants rated items on a Likert scale from Strongly Agree to Strongly Disagree, examples of such items are "*To think about my own mortality frightens me*" and "*To see a dead body would disgust me*". A higher score on this measure indicated a higher level of death anxiety (See appendix C, p. 60).

Demographics: Information was obtained regarding gender, age, ethnicity (2001 census categories - Office for National Statistics, 2003) religion, and whether the religion supported organ donation. A cut off slip was created at the end of the questionnaire giving a website for those who wanted to know more about organ donation (see appendix C, p.61).

Due to its complexity, the questionnaire was not counter balanced, so all participants received the questionnaire in the same order.

Procedure

Students were selected via opportunity sampling from communal areas of Oxford Brookes University. Participants were asked to read the participant information sheet (see appendix D, p. 62) which contained all relevant information regarding the research, including information about consent, withdrawal from the study and collection of completed questionnaires. Questionnaires were distributed by four researchers (see supporting materials A, p. 66, for a description).

Results

Forty six per cent of participants indicated that they were signed up to the organ donor register. This percentage is derived from combining those who were sure they were on the register (34%) and those who were "unsure" (12%) who stated, for

example, that they had signed an organ donor card but were unsure whether this meant that they were on the register. For numbers and percentages of position on the register, with the inclusion of unsure, registration method and reasons for being unsure see table 1a at Appendix E, p 64).

Table 1 indicates that the number of participants who have not signed the UK Organ Donor Register (54%) exceeds that of those who have (46%). There is a significant gender difference in position on the organ donor register, $\chi^2(1, N = 184) = 5.03, p = .025$, with more females having signed the register (52%) than males (34%). Table 2 shows that the most frequently given intention time was “Eventually”, opted for by nearly half of those intending ($N = 23; 49\%$). A general trend towards later intention times is apparent, with the exception of “in the next 5 years” which shows a drop in this trend ($N = 6$).

State procrastination. Respondents were invited to assess the contribution of each item to their not yet having signed the register. “Feeling loved ones would make the right decision” had the highest degree of agreement as a contributing factor for not yet signing up ($M = 4.08, SD = 1.06$). The mean was lowest for the item regarding “not too bothered whether an organ donor or not”, showing it to be perceived as less influential for not having signed up ($M = 2.30, SD = 1.12$).

Table 1
Numbers, Percentages and Total for Position on the Organ Donor Register with Reference to Gender

N

	Are you on the UK Organ Donor Register?			
	Yes		No	
	<i>N</i>	%	<i>N</i>	%
Male	22	34	42	66
Female	62	52	58	48
Total	84	46	100	54

Table 2
Numbers and Percentage for Intention and Intention Time

Do you intend to register?	N	%
Yes	39	40
Unsure	35	36
No	24	25
If you do intend when do you intend to register?		
This week	1	2
This month	2	4
Within 6 months	3	6
In the next year	12	26
In the next 5 years	6	13
Eventually	23	49

Note: Responses for those who were unsure whether they intended to sign the register but had given responses for intention time and organ donor specific procrastination were also included in the intention time measure.

A reliability analysis indicated that the items measuring organ donation specific procrastination did not show adequate internal consistency (Cronbach's Alpha = .51). The interrelation between individual items was then examined (see Table 3, p. 19). Feeling "no hurry to sign the register" positively correlates, weakly but significantly, with "not being bothered whether an organ donor or not", indicating that those who agreed that "no hurry to sign the register" is a contributing factor in them not already signing up also agreed that "not being too bothered" about being an organ donor is too a contributing factor. "Needing more information about how to sign the register", was significantly moderately correlated with both "feeling that loved ones would make the right decision" and "not being bothered whether an organ donor or not". Thus those who felt that not knowing how to sign the register was a contributing factor also felt that leaving the decision to others and not being too bothered were reasons behind them not yet signing the register. The correlations also reveal that those who have put off signing the register because they "feel loved ones could make the right decision on their behalf" also agree that there "needs to be more reminders about signing the register".

A state procrastination score was created by totalling across responses to all items in this section for those who completed it, conceptualising this as sampling across six opportunities. In displaying this total, it was nevertheless put back into a 5 point scale to allow easier interpretation. The mean state procrastination score was 3.24 ($SD = 0.55$), indicating slight agreement with the items. There was a trend towards, though it did not reach significance, a relation between state procrastination scores for males ($M = 3.39$; $SD = 0.54$) and females ($M = 3.11$; $SD = 0.53$), $t(44) = 1.78$, $p = .082$. State procrastination scores do not correlate with intention time ($\rho[39] = .24$, $p = .130$) suggesting no relationship between the items rated and when an individual intends to get round to signing the register, thus disconfirming the hypothesis.

Each item constituting organ donor specific procrastination was then correlated with intention time. The item regarding "needing more information" was the only item resulting in a significant correlation with intention time ($\rho[44] = .33$, $p = .023$). Stating that more information was needed was associated with predicting a longer delay in signing the register. A t-test indicated that there were no significant gender differences between scores on the item ($t[58] = .21$, $p = .833$). Due to "needing more information" being the only significant item it will be brought forward for further analysis.

Trait Procrastination: The General Procrastination Scale (Lay, 1986) was shown to be reliable (Cronbach's Alpha = 0.87) at levels comparable to that found in previous research (Lay, 1986; Sirois et al, 2003). A t-test indicated a significant gender difference between trait procrastination scores ($t[182] = 1.99$, $p = .048$), men tended to show higher trait procrastination ($M = 3.07$; $SD = 0.60$) than women ($M = 2.87$; $SD = 0.68$). Trait procrastination scores (created in the same way as state procrastination scores) show a mean of 2.94 ($SD = 0.66$), and did not significantly correlate with state procrastination scores ($r[44] = -.24$, $p = .106$) or with any individual items from this measure. Trait procrastination scores were not significantly correlated with intention time ($\rho[45] = -.05$, $p = .729$), again disconfirming the hypothesis. Significant negative correlations were shown between trait procrastination and altruism ($r[182] = -.17$, $p = .025$), extraversion ($r[182] = -.27$, $p < .001$), agreeableness ($r[182] = -.18$, $p = .015$), conscientiousness ($r[182] = -.53$, $p < .001$) and neuroticism ($r[182] = -.15$, $p = .040$). Thus as trait procrastination increases the levels of these variables decreases.

Intention time will now be examined in relation to other variables in the study.

Attitudes towards Organ Donation: A section of the questionnaire also measured attitudes. A reliability test suggests the items measuring organ donor attitudes are highly interrelated (Cronbach's Alpha = 0.75). This could be increased further with removal of item 21 from the analysis (Cronbach's Alpha = 0.79), thus this item was omitted when creating an attitude score of averages across items. The mean score of attitudes was 3.58 ($SD = 0.51$) indicating attitudes were generally more positive toward organ donation than negative. Attitude is significantly related to whether someone is on the register ($t[182] = -5.57$, $p < .001$) but not with intention time ($\rho[45] = -.22$, $p = .134$).

Table 3

Means, Standard Deviations and Correlations Regarding Items Constituting Organ Donation Specific Procrastination with State Procrastination Score, Intention Time and Trait Procrastination Score

Item N = 60	Mean	Standard Deviation	Even if I haven't signed a card...	There needs to be more reminding...	I need more information...	There is no hurry...	I need more time...	I'm not too bothered...	Trait procrastination scores	Intention time
Even if I haven't signed a card I feel my loved ones would make the right decision for me.	4.08	1.06	-						-.20	.11
There needs to be more reminding to sign the organ donor register in my day to day life.	3.83	0.92	.39**	-					.06	-.22
I need more information on knowing how to sign the register.	3.68	1.12	.42**	.13	-				-.11	.33*
There is no hurry for me to do so right now.	3.43	1.09	-.00	-.01	.06	-			-.06	.22
I need more time to think about donating my organ so I can make the right decision for me.	3.18	1.38	.04	.01	.20	.20	-		-.24	.20
I'm not too bothered whether I am an organ donor or not.	2.30	1.12	.14	-.07	.28*	.26*	.19	-	-.12	.09
State procrastination score. N = 46	3.24	0.55							-.24	.24

Note: Means and standard deviations relate to a 5-point scale (5=Strongly Agree, 1= Strongly Disagree). N = +14 as some respondents filled out the organ donor specific procrastination measure despite not giving an intention time. ** = 0.01 significance level; * = 0.05 significance level.

Altruism: A further section of the questionnaire measured altruism. A Cronbach's alpha indicates that the items in this section do not go together (Cronbach's Alpha = .54). Item responses are added together as they are regarded as a set of opportunities to report altruism. Altruism scores range from 8 to 26 with a mean of 18.35 ($SD = 3.08$) suggesting the average response was between "yes once" and "yes a few times". Altruism scores were neither significantly related to being on the register ($t[182] = .22, p = .823$) or intention time ($\rho[45] = .14, p = .352$).

Personality: A section of the questionnaire was a personality scale (Goldberg, 1992) measuring extraversion, openness to experience, agreeableness, conscientiousness and neuroticism. None of these personality traits related significantly to being on the register, intention time or the item "need more information".

Table 4
Multiple Linear Regression Results Showing the Significance of Each Independent Variable on Intention time

Item	<i>B</i>	<i>T</i>	<i>Significance</i>
Total attitude	-.57	-1.27	.21
Total trait procrastination	.17	.45	.65
'Need more information'	.30	1.91	.06
Total altruism	.07	1.10	.27

In order to look at the strongest predictor of intention time a multiple linear regression was carried out. Altruism, trait procrastination, attitudes and the item "need more information" from the state procrastination measure, variables believed to be possible predictors of intention time, were entered into the regression model and together explained 17 per cent of the variance in intention time. However, the model only approached significance at the .10 level ($F[4, 41] = 2.11; p = .097$). The only variable nearing significance was "needing more information" (see Table 4).

Noting, with reference to table 2, the pattern of intention time, a binary variable was created to contrast those gave a specific time ("This week" to "In the next 5 years") with those who responded with "Eventually". Among 47 participants, responses to these now two categories were roughly half and half (24 and 23 respectively). A logistic regression with the independent variables of attitudes, trait procrastination and "need more information" again showed the latter to be the only significant (albeit only at the .054 level) predictor in the model. The model itself was not significant, $\chi^2(3, N = 46) = 4.91, p = .178$ (See Table 5). This result suggests that "needing more information" is the greatest distinguisher, of attitude and trait procrastination, of whether a specific or "Eventually" intention time is given.

A further separate analysis was carried out as the small sample size and assumptions of the statistical test meant not all potential predictors of intention time could be entered in the initial regression. The most predicting factor thus far (needing more information) was placed into a logistic regression with other possible influential factors: sex, extraversion, agreeableness, conscientiousness, neuroticism and openness to experience.

Table 5

A Summary of the Overall Model Statistics. Coefficients, Test and Significance Values for the Independent Variables of Attitude, Trait Procrastination and “Need More Information”

Item	Model			Independent Variables		
	Cox & Snell R Square	Chi-square	Sig.	B	Wald	Sig.
	.10	4.91	.17			
Total attitude				.18	.06	.81
Total trait procrastination				-.43	.47	.49
Need more information				.55	3.71	.05

Table 6

A Summary of the Overall Model Statistics, Coefficients, Test and Significance Values for the Independent Variables of “Need more Information”, Sex and Personality

	Model			Independent Variables		
	Cox Snell R Square	Chi-sqaure	Sig.	B	Wald	Sig.
	.12	5.70	.57			
Need more information				.54	3.76	.05
Sex				-.54	.60	.44
Total extraversion				.05	.03	.87
Total agreeableness				.25	.49	.48
Total conscientiousness				.80	.09	.76
Total neuroticism				-.13	.23	.62
Total openness				-.13	.14	.71

The model was not significant, $\chi^2(7, N = 46) = 5.70, p = .575$. The results again indicate “need more information” to be the only significant predictor (at the .053 level) of difference between a specific intention time and “Eventually” (See Table 6.)

Discussion

In the current study 84 participants had signed the UK Organ Donor Register, 100 had not. Of those not currently on the register, 39 indicated they intended to sign up, with a majority intending to do so “Eventually”. In the current sample more females were signed up to the register than males, a difference that reflects that of actual organ donor registration figures, where 54% of those on the register are female and 46% are male (NHSBT, 2010; sect. Activity Report 2009/2010). Neither organ donor specific procrastination nor trait procrastination was found to be significantly related to intention time for signing the register. The personality trait of procrastination, as measured by Lay’s General Procrastination Scale (Lay, 1986) did not appear to be related to dilatory behaviour as set out in the intention time measure and the constructed measure of organ donor specific procrastination also failed to achieve a significant relationship with intention time, contrary to the belief that organ donation could be open to procrastination due to factors such as task unpleasantness (e.g. Milgram et al, 1995). The original proposition of procrastination’s role in the domain of organ donation regarding carrying out the behaviour of signing the organ donor register, and it being a stronger predictor of intention time than attitudes was therefore not supported by the results.

One item from the domain specific procrastination measure however was positively correlated with intention time. “Needing more information on knowing how to sign the register”, as an influential factor on the decision to sign the register, was related to longer intention times. Attitudes towards organ donation, trait procrastination and “needing more information” did not predict intention time at an acceptable level of significance, though the latter was very close to the .05 level of significance. Individuals higher in procrastination were likely to be less conscientiousness, agreeable, extraverted, altruistic and more neurotic but these personality traits, along with openness to experience, did not predict intention time. The relationships between trait procrastination, conscientiousness and neuroticism relates to previous research (e.g. Schouwenburg & Lay, 1995), suggesting the absence of relationship with intention time was not due to the General Procrastination Scale (Lay, 1986) being a poor measure, instead it is interpreted as resulting from measuring the wrong variable, an idea that will be later discussed.

The lack of relationship between the procrastination measures and intention time does not render the results as unimportant or uninteresting. “Needing more information” was the only procrastination provoking factor to achieve a significant relationship with intention time. If this is taken at face value as a genuine reason for participants not getting round to signing the organ donor register, this is relevant for the debate concerning an opt-out system. Opponents of the opt-out system are concerned that there would be a great need to ensure that individuals, especially the vulnerable in society, are aware of the system and, if desired, of the necessity to remove themselves from the register (Department of Health, 2008b). On the one hand, individuals appear to be surrounded with information, for example from recent NHSBT (2010) campaigns which included leaflets with registrations forms being distributed to millions of homes in the UK and visits to Fresher’s Fairs at universities. NHSBT’s (2010) general aim has been to make it easier to get more information and join the register, yet in the current, presumably media savvy, information saturated sample, the intending feel they “need more information on knowing how to sign the organ donor register” adding support to argument that individuals could be left unaware of an opt-out system and lack knowledge of how to remove themselves from the register (Department of Health, 2008b).

It could be argued that if individuals seriously did intend to sign the organ donor register, would they not be motivated to find out how? The current findings indicated a relationship between “needing more information” and “not being too bothered or not” about becoming a donor, which could explain this contrast between amount of information available and claims of needing more. Despite “needing more information”, as the issue is not of great personal importance, individuals do not actively seek the information needed, which could translate into later intention times. A further explanation of the situational factor of “needing more information” relating to intention time surrounds general concerns surrounding individual’s ability to access or understand health information, known as health literacy (Lanning & Doyle, 2010). In this case, information may not be entirely understood regarding the process of organ donation, becoming a donor and what this entails. Further research needs to examine whether individuals are claiming to need more information simply because they do not understand the information they have been given so far.

Even though the constructed measure of organ donor procrastination did not relate to intention time as a whole measure, it holds interesting information in itself. “Feeling loved ones would make the right decision” had the highest degree of agreement, indicating its importance in why respondents had not yet signing the organ donor register. Letting family-members know a donor decision is important as it can impact on decisions made at the time of death of a loved one, often when a decision is not known, donation will not be selected (Farsides, 2000) and moreover NHSBT (2010) state that by signing the register, it is easier for relatives to confirm and follow an individual’s wishes. The importance of would-be donors informing relatives is emphasised currently in an organ donation campaign in Wales (Donate Wales, 2011). The findings in the current study however would suggest that individuals do not feel that personally signing the register is necessary.

The findings highlight an issue regarding those who intend to register and when they will go about doing so. If procrastination, either derived from procrastination provoking factors surrounding organ donation (with the exception of “needing more information” which has already been considered) or as a trait, does not explain the relation between intention and the trend towards “eventually”, then other ideas need to be sought to account for this. Firstly, responding “yes” to intending to sign the register and then the unspecific intention time of “eventually” could be considered to be more of a reflection of uncertainty and/or ambivalence, the impact of the latter has been seen previously in relation to organ donation (Van Den Berg, Manstead, Van Der Pligt & Wigboldus, 2005).

Individuals could be indicating “intending” as opposed to “not intending” or “unsure” as a result of their *generally* positive attitude towards organ donation. Thus this “yes”, which may not even be a conscious response, is in line with these forces, an act contrary to this could appear illogical. This idea parallels that of issues in social psychology regarding racism. Research in this field has shown individuals have implicit negative attitudes regarding race but outwardly show non-prejudiced attitudes, known as aversive racism (Pearson, Dovidio & Gaertner, 2009). These individuals are aware of values of equality and, wishing to adhere to them, do not act in a way contrary to this, being “typically motivated to avoid seeing themselves as racially biased” (Pearson, Dovidio & Gaertner, 2009, p. 326). In relation to the current findings, individuals may respond as intending as they want to appear to themselves as a good person, when implicit feelings may contrast this.

Individuals may assume that an overarching positive attitude should translate into intention; however, as put forward by Morgan et al (2008) it is important to know that

attitudes towards organ donation may not reflect the same attitude when determining whether to donate your own organs. Thus in the current study intention could be a reflection of general attitudes as opposed to those surrounding the decision to sign the organ donor register, which then translates into later intention times.

To relate this to a further issue in social psychology, the current findings may be relevant to the theory of planned behaviour, regarding the notion of measurement specificity and its importance in the strength between attitude and behaviour, stating that “general attitudes should predict general classes of behaviour and specific attitudes should predict specific behaviours” (Conner & Sparks, 2005, p. 171). This idea supports the interpretation that “yes” intentions are reflections of general attitudes as opposed to that of personally donating organs, consequently leading to later intention times. A relationship between intention and intention time may be discovered if both are measured at the same level.

Secondly, relating to the idea of not having made a personal decision, procrastination could still be a relevant factor, as suggested by the trend towards later times, but prior to the behaviour stage. If attitude and intention are not resulting in the corresponding behaviour then one suggests a problem at the decision stage. As stated previously, the “Yes” to intention could be a reflection of “I’m not sure”. This idea is supported further by individuals in the current study who provided an intention time and gave reasons for not signing up despite stating they were unsure if they intended to donate their organs, possibly indicating an overlap in the meaning of intending and unsure.

Two ideas based around decision making can be referred to when considering why an individual may say they intend but then not sign the register. Firstly, decisional procrastination refers to difficulty in making appropriately timed decisions (Janis & Mann, 1977). Ideas have been put forward as to why postponing decision making, when there is no formal deadline, may not be unwise, e.g. when there are other things of a higher priority, the problem requires more time, information or when the outcome holds a heavy cost (Janis & Mann, 1977). To relate this to organ donation, if individuals feel they do not hold an adequate amount of information, or there are more important tasks at hand, it could appear understandable why one would not immediately decide to sign the organ donor register, despite being generally in favour. Milgram and Tenne (2000) highlight a difference between decisional and behavioural procrastination, the former being more open to interference from feelings such as anxiety, an emotion found to be present in non-donors surrounding their death (Cleveland, 1975).

It has also been found that decisional procrastinators take longer to come to a decision, more so when there are more options, and tend to search for more information before coming to a decision (Ferrari & Dovidio, 2000). The “eventually” response could reflect the longer decision time’s characteristic of decisional procrastinators (Ferrari & Dovidio, 2000) which may increase even more so when one considers that deciding to sign the organ donor register is not just one decision, but can involve many regarding which organs to donate. However, the finding that decisional procrastinators explore more information than those lower in said disposition about their choice can relate to the current findings. Individuals who stated “eventually” to signing the register also felt they “needed more information” on how to do so could suggest, if they are decisional procrastinators, that signing the register is not likely to be their eventual decision hence they are not exploring it further. On the other hand it could be that these individuals are intending, but despite having information, want more before coming to a final decision.

The findings can also relate to the idea of decision avoidance, which surrounds avoiding making decisions and the responsibilities of having to do so by doing nothing or putting it off, differing from decisional procrastination in that the decision made can be in line with intention (Anderson, 2003). The rational-emotional model put forward by Anderson (2003) includes the effect of emotions on decision making and types of decisional avoidance; a preference for the status quo, options that necessitate no action on behalf of the decision maker and putting off decisions altogether, referred to as deferral. The model incorporates the impact of expected regret and blame on decision making, and suggest decision avoidance can be used to avoid these negative outcomes (Anderson, 2003). Components of this model (Anderson, 2003) can be considered alongside the current findings, with the intention time of “eventually” leading to no change, action, or regret from a wrong decision and meaning the decision can continue to be put off. Anderson (2003) talks of blame in relation to the rational-emotional model resulting from the evaluation of a decision by others, individuals who said they intend in this study may have done so to avoid blame, especially when they are probably aware of the need for more donors and it forming the basis of this research.

Least agreement was given to the item regarding “not being bothered whether an organ donor or not”. This suggests that the lack of donor behaviour is not primarily due to indifference. Furthermore, differences in intention time were not the result of differences in altruism, personality or attitudes towards organ donation that is to say those who responded “eventually” were no less altruistic than those indicating sooner times. This can be seen as further support for the possible role of decision uncertainty and/or ambivalence, a factor that could be apparent across individuals despite positive attitudes for example. However, it is possible that measure of personality used (Goldberg, 1992) was not subtle enough, and a more context relevant personality measure would be more appropriate, for example one which looks at those who experience empathy or distress in response to another in pain (Batson, O’Quin, Fultz, Vanderplas & Isen, 1983).

One of the major limitations of this research is the sample size. Focussing on intention time of those not currently on the register but intending to sign up reduced the sample size quite dramatically. An initially larger number of participants could rectify this problem of a diminishing sample when focussing on those intending. It could be argued the constructed measure of state procrastination, despite deriving from research on the reasons for not completing advance directives (Douglas & Brown, 2002; Llovera et al, 1999) did not include all factors that cause individuals to put off signing the organ donor register, thus further investigation would be required to gain further knowledge of these factors. The results of this study cannot be generalised beyond the student sample used, for example research has highlighted a relationship between education and being an organ donor (e.g. Morgan & Miller, 2002). Similar research could be conducted on an older age group than that of the current sample. Health behaviours, such as writing a will, and delays within these behaviours were not applicable to the current young sample, thus it may be interesting to consider whether individuals who procrastinate in these related areas also procrastinate regarding becoming an organ donor. Related to this, the General Procrastination Scale (Lay, 1986) surrounded procrastination in daily tasks. A measure more directed towards general procrastination in one-off behaviours, health behaviours or decision making may better reflect the type of procrastination that may be apparent within the context of organ donation.

Further research could explore procrastination at the decision making stage between attitude and intention. However it should be stressed the need to establish a way to measure intention in a way that can differentiate between those who plan to but have put off signing up and those who believe they should and say yes as a result of ambivalence, mechanisms of decisional avoidance (Anderson, 2003) or decisional procrastination (Ferrari & Dovidio, 2000).

The possible role of procrastination at the decision stage could have wider societal implications regarding the implementation of a different system of organ donation. Farsides (2000) proposes a system of mandated choice to increase the number of organ donors, which surrounds not presuming consent, as in Spain, (Matesanz, 2004) or dissent (currently implemented in the UK) but having organ donor decisions a requirement. Farsides (2000) suggests, to ease decision making, an option to give responsibility of the decision to another i.e. family. As Farsides (2000) proposes, this system of compulsory decision makes sure organ donation is considered and furthermore the Organ Donation Taskforce indicate its possible influence on making those sitting on the fence chose either way (Department of Health, 2008b). Thus, regarding the interpretation of the current findings, a compulsory decision system could prevent procrastination surrounding making the decision. A further idea put forward by Farsides (2008) to increase the number of organ donors concerns allowing individuals to be reminded of and given the chance to change their decision, something that may be beneficial for those experiencing decisional avoidance as a result of anticipated regret (Anderson, 2003).

Further research should focus on examining the feasibility of a system of mandated choice. A qualitative method could explore public opinions on this system, especially considering it goes against the UK consensus of having the choice not to choose, (Department of Health, 2008b) which may be behind the lack of individuals coming to a decision. Moreover, whether an option to give responsibility to someone else will lead individuals to decide or continue to defer making the decision for them.

To conclude, the results of this study did not support the proposal that procrastination plays a role in the discrepancy between attitude and behaviour regarding organ donation. Intending individuals opted for later times when asked when they intended to sign the register, but procrastination, neither state nor trait, explained this trend. On consideration, it appears responses for “eventually” signing the register may not reflect actual intention, but ambivalence surrounding general and personal attitudes towards donating organs and trouble in making the decision to sign the register. Also, the relationship between intention time and “needing more information”, a factor affecting the decision to sign the register, raises questions about both the targeting and effectiveness of campaigns and whether this is a true indication of why people state increasingly later intention times. Qualitative methods are suggested for further investigation of this trend towards delayed intention times regarding decision making in this domain and the mandated choice system of organ donation, like that put forward by Farsides (2008). Once this is understood it may become apparent if and where procrastination plays a part in the domain of organ donation.

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