

What motivates altruistic behaviour? How could policymakers incentivise future blood donation rates in the UK?

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This paper offers an interdisciplinary exploration of behavioural theory beyond the conventional microeconomic framework, in an attempt to better understand why agents act in the interests of others. It then uses these behavioural ideas to propose how UK policymakers could better incentivise future blood donation rates, in response to an anticipated supply shortage induced by an ageing population. The three themes of reputation, reciprocity and social integration as motivators for altruistic behaviour are derived from lessons of the social sciences beyond the field of economics and their relevance in the case of blood donation is tested by investigating survey response data and the character profiles of existing donors. It is concluded that if policymakers accept that agents are not motivated solely by self-interest and monetary gain, a whole continuum of well-designed, theoretically informed incentive options exists in between the current system, where donors are entirely unrewarded for their blood product, and a commercialised one.

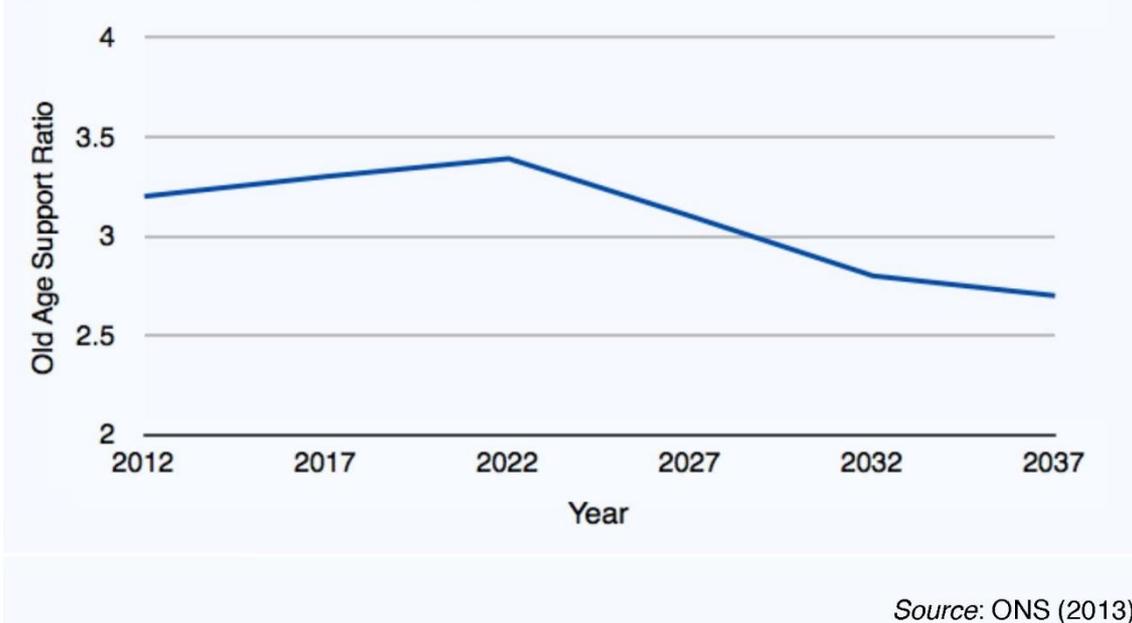
1. Introduction

Understanding the origins of and motivations for altruistic behaviour continues to intrigue evolutionary theorists, anthropologists, psychologists, sociologists and economists alike (Mifune *et al.*, 2010; Evans and Ferguson, 2014). For traditional economic theory that insists behaviour is motivated solely by self-interest, the analysis of non-egoistic actions is particularly challenging (Edgeworth, 1881). This interdisciplinary dissertation aims to better understand the motivations for altruistic behaviour in order to inform UK policy of how blood donation rates may be encouraged in the future in response to an anticipated supply shortage induced by an ageing population (Lattimore *et al.*, 2015).

1.1 Motivation

Like much of the developed world, the UK is experiencing a significant shift in its demographics as our population ages (Lattimore *et al.*, 2015; Age UK, 2015). As a combined result of increased longevity and the ageing of the 1960s baby boomers, there are now 11 million people in the UK aged 65 or over (Cracknell, 2010; Age UK, 2015). According to forecasts offered by the ONS (2013), the UK’s old age support ratio is expected to decline as of 2022. Figure (1) indicates that the number of working age agents expected to support one UK agent aged 65 or over will decrease from 3.4 in 2022, to just 2.7 in 2037 (ONS, 2013).

Figure 1: A Projection of the UK’s Old Age Support Ratio, 2012-2037

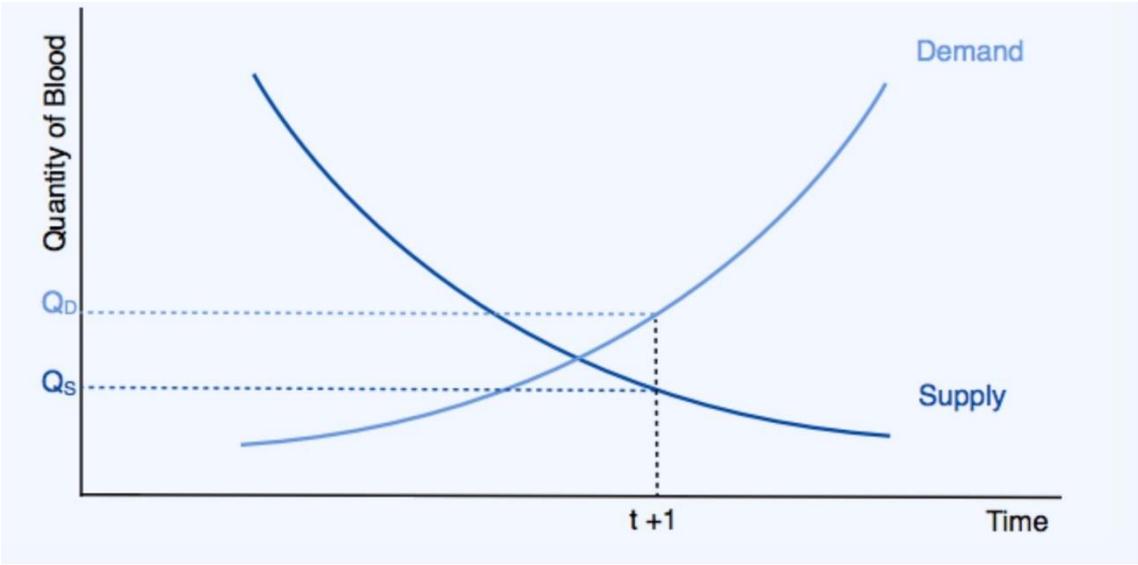


While all public services are in one way or another expected to be affected by this demographic shift, it is the National Health Service (NHS) which is most likely to bear the brunt of the burden of an ageing Britain. Cracknell (2010) notes that while life expectancy has improved significantly in recent decades, healthy life expectancy has not increased at such a pace, leading to greater proportional demands on

NHS services. Though this burden for the younger generations of Britain is typically discussed in monetary terms in the context of the tax system, this paper will explore the future of a non-monetary resource required by the health sector - blood.

According to Lattimore *et al.* (2015), one quarter of UK blood donors are currently aged 55 or over. Many of these donors are expected to make the transition from the supply-side of the blood equation, to the demand-side in the near future. As our older generation's ability to make blood donations tails off either for health reasons or as a result of 'charitable fatigue', their demand for blood as a medical resource is expected to increase (Lattimore *et al.*, 2015; Wildman, 2009 p.494). The World Health Organisation (WHO) (2014) notes that in high-income countries such as the UK, 76% of all blood transfusions involve patients aged 65 or over. Though the impact of demographic change on safe blood supply in the UK has been little discussed, assuming that medical practices remain constant, the UK may well be faced with a scenario whereby a greater amount of blood is demanded by a growing number of older patients with relatively fewer, younger donors giving blood to maintain supply (Greinacher *et al.*, 2010). The illustration below provides a basic visualisation of such anticipated trends and recognises the potential supply shortage ' $Q_S - Q_D$ ' at time ' $t+1$ ', assumed to be some time after 2022 given the WHO's aforementioned demographic forecasts.

Figure 2: Anticipated Trends in the Supply & Demand of Donated Blood, UK



Source: Drawn by author

For reasons to be discussed in chapter (5), the WHO has long promoted voluntary, non- remunerated donation as the gold standard for collecting and maintaining national blood supply (Abolghasemi, 2010). According to a survey carried out by NHS Blood and Transfusions (NHSBT) in 2011, just 4% of the UK's eligible population donate blood (Lattimore *et al.*, 2015). In order to avoid a blood shortage

induced by falling supply and rising demand, efforts must be made to better understand what motivates donors' decision to give blood so as to design policy that serves to optimise donor recruitment and retention (Greinacher *et al.*, 2010; Bednall *et al.*, 2011).

1.2 Methodology

In order to achieve such understanding, this paper will begin by reviewing the conventional economic approach to human behaviour that is based upon, and perhaps limited by, the primary assumption of self-interest (Simon, 1955; Edgeworth, 1881). It will then consult the theories and experimental evidence of disciplines beyond the field of economics that offer more comprehensive explanations of non-selfish behaviour. Once arriving at some conclusions about altruistic motivations in general, I attempt to apply these themes to the case of blood donation. I will do so by investigating relevant qualitative and quantitative data for evidence of blood donors' motivations in line with the theoretical themes presented prior. Stated preference and revealed preference approaches are adopted here via the investigation of self-reported survey data and blood donor profiles, respectively. I will finally explore the realistic options available to UK policymakers that may incentivise future blood donation rates. To do so, I will review the traditional debate surrounding the effectiveness and moral permissibility of monetary incentives, before recommending a revised framework of non-monetary incentives that are informed by alternative behavioural theory.

While the research topic of this dissertation is altruism, UK blood donation may be treated as its case study. According to Yin (2009), case studies are the most appropriate research method when asking a 'how' or 'why' research question and when contemporary issues are of focus. Since this paper attempts to answer *why* donors give blood and *how* policymakers may incentivise blood donation given the UK's contemporary demographic climate, this approach is justified (Yin, 2009). Blood donation offers an ideal case study for altruism since it is generally marketed as the 'purest example' of non-selfish behaviour (Masser *et al.*, 2008; Elster, 1990 in Mansbridge, 1990; p.46). This paper focuses on the UK for natural domestic interest, the demographic shift it is experiencing and its historic reliance on un-incentivised, unrewarded donation only (Lattimore *et al.*, 2015).

2. Economics & Self-Interest

'The first principle of Economics is that every agent is actuated only by self-interest.'
(Edgeworth, 1881; p. 16)

2.1 The Economic Man

Orthodox economic theory has long treated the human agent as the 'economic man' - he who is perfectly informed, calculated and rational, motivated only by self-interest and a mechanical desire to

maximise his utility function according a given set of stable preferences (Thaler, 2000; Simon, 1955). Though useful for modelling consumption and investment behaviour in theory, these assumptions in practice too often narrow economists' view of human agents to an almost unrecognisable degree. In reality, our rationality is bounded by our finite mental capacity and our selfish, monetary preferences are destabilised by our human emotion and interest in others (Simon, 1993).

The discrepancy between the real-world *homo sapiens* and the theoretical *homo economicus*, as explored by Thaler (2000), is becoming more frequently discussed by critics of orthodox economics, as lessons from the behavioural sciences begin to challenge and supplement traditional theory. It must be noted that even the classical economists, whose works are used to endorse the solely self-interested economic man, do evidence an appreciation for agents' wider, non-selfish preferences in reality. Adam Smith, the founding father of free market economics, for example, dedicated much of his earlier work to the notion of sympathy. In his lesser discussed 1759 book 'The Theory of Moral Sentiments', Smith stresses that no matter how selfish a man may appear, it is within his nature to derive utility from the fortune of others (Smith, 1759, in Kolm, 2006). The idea that agents may be motivated by others' fortune as well as their own is a provocative concept which has been somewhat lost in mainstream economic theory (Ridley, 1990 in Elliott, 1990). Smith is instead more commonly remembered for his later 1776 work 'The Wealth of Nations' in which his invisible hand theory is interpreted to endorse rational agents' pursuit of individualistic self-interests. His proposal that the free market mechanism could organise self-interests in such a way that would benefit the wider economy has been popularised by his neoclassical successors and is used in support of egoism as the primary motivator for agents' behaviour (Shearmur, 1990, in Elliott, 1990).

For traditional economists who maintain the discipline's first principle of self-interest, then, altruistic acts pose a problem for modelling human behaviour. Defining the somewhat abstract concept of altruism with certainty is challenging and while it is recognised that definitions vary across literature, this paper will not attempt to evaluate which is most convincing. The working definition to be used has been adapted from Evans & Ferguson's (2014) definition of pure altruism and proposes that altruistic behaviour is observed when agents act in the interest of others at a personal cost with no formal, extrinsic reward. An act of altruism that reduces an agent's own utility in the interest of another's gain, by definition, hence seems to flout economics' most fundamental assumption of self-interested behaviour.

2.2 The Warm Glow Model

Nevertheless, attempts have been made to model altruism *within* the utilitarian, egoist framework of orthodox economic theory. Andreoni (1990), for example, rationalises the altruistic act of donation in terms of utility gain via 'The Warm Glow Model'. This theory insists that since agents act according to

their self-interest, the act of donation must contribute to the benefactor's utility level via what is dubbed the 'warm glow' of donating (Wildman et al, 2009). In layman's terms, this simply describes the intrinsic, good feeling of giving - or otherwise, the pleasure that the benefactor takes from thinking of the good their donation may do for another (Hausman & McPherson, 2006). The idea is formalised as follows:

$$U_i = (x_i, Y, g_i) \quad (1)$$

where 'U_i' denotes the typical quasi-concave utility function, 'x_i' denotes the private good, 'Y' denotes the public good whose supply is contributed to by donation and the 'g_i' term picks up the so-called 'warm-glow' of donating (Adreoni, 1990; Wildman *et al.*, 2009). This final algebraic term serves solely to internalise recipients' utility gain from donation into the benefactor's own utility function. From equation (1), then, it may be inferred that the act of donation in some way, by some amount provides the donor with a good feeling, resulting in a personal utility gain that rationalises a previously selfless act as in fact self-interested. The first principle of economics hence holds, supposedly.

When attempting to answer the more specific behavioural question of what may motivate the decision to donate, the above model offers little more than the generic insistence of self-interest via a fairly vague concept of 'good feeling', that is to materialise in an unspecified form or measure. In practical terms, this explanation is limited. While this paper does not necessarily object that altruistic behaviour, pure or impure, may at least in part encourage higher personal utility levels, it does suggest that more fine-tuned models of human behaviour are required to better understand agents' preferences. Standard utility theory teaches us that agents will always seek to maximise utility according to a given set of rational preferences but fails to specify what the content of those preferences ought to be (Hausman & McPherson, 2006). The obstacle faced at this stage is that individual preferences within the standard economic framework are treated as exogenous and the analysis of their prior formation is out of bounds. Any further enquiry into agents' specific behavioural tastes, tendencies and motivations for donating is hence restricted using conventional economic methods.

3. Beyond Economics

To better understand human agents' motivation, or preference, for altruistic behaviour, this chapter will consult the theories and experimental evidence of social sciences beyond the field of economics. The lessons to be learnt will not be used in substitution of standard economic theory, rather as supplements for a more comprehensive understanding of why agents donate. Ideas from psychology, sociology, evolutionary biology and anthropology will be explored for their more focused and holistic understanding of the human agent. Though their respective contributions are by no means mutually

exclusive, for the purposes of this paper, altruistic motivators have been organised into three themes; reputation, reciprocity and social integration.

3.1 Reputation

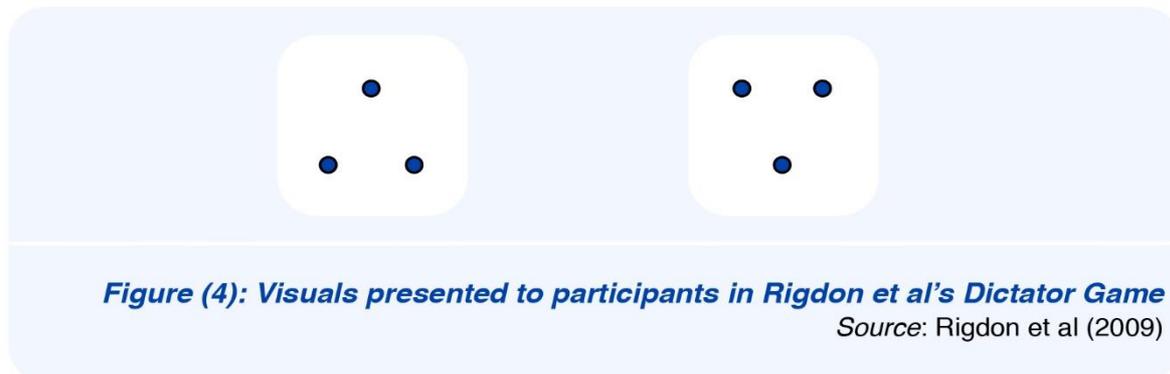
According to Benabou & Tirole’s (2003) model of utility, as presented below, behaviour is motivated by a combination of extrinsic and intrinsic rewards as well as agents’ concerns about their reputation (Steed, 2013). The interaction between these three motivators will be of focus in chapter (5) when considering the potential consequences of offering agents rewards for giving blood. In this section, however, I concentrate on reputation as a behavioural motivator.



Experimental evidence from the field of psychology has repeatedly confirmed that agents behave in a more altruistic manner when their reputation is made vulnerable by either the monitoring or reporting of their actions to others (Mifune *et al.*, 2010). The simplest, most well-known experiment used to explore unselfish behaviour is ‘The Dictator Game’ whereby a participant who is given the role of ‘dictator’ must decide how much, if any, of a given endowment to donate to another participant in a single, anonymous transaction (Bardsley, 2008). Within the rational choice framework of economics, one may reasonably expect that the majority, at least, of dictators keep the whole endowment for themselves. In reality, psychologists report that on average, over 50% of their subjects give at least a percentage of the money away (Bardsley, 2008). Such cooperative behaviour between strangers is considered an evolutionary puzzle of continual interest (Mifune *et al.*, 2010).

Variations of the dictator game have revealed the influential roles of anonymity and monitoring on dictators’ behaviour and together confirm human agents’ sensitivity to their reputation, particularly amongst in-group members (Mifune *et al.*, 2010). For example, Burnham (2003) concludes that when players are presented with photographs of one another prior to the dictator game, a greater proportion of money is donated by the dictator to the recipient. From this, one may infer that when anonymity that serves to protect the dictator’s reputation is jeopardised, altruistic behaviour is enhanced. In another variation of the game, Hayley and Fessler (2005) conclude that when dictators were presented with a cartoon drawing of a pair of eyes on their screens, donations were once again increased. From this, one may further infer that even the illusion of monitoring may stimulate greater

levels of altruism. Our human sensitivity to even the most remote illusion of monitoring was investigated by Rigdon *et al.* (2009) who compared the donation behaviour of dictators who were presented with one of the following two combinations of dots on their computer screens during another version of the dictator game.



According to their results, male dictators presented with the right-hand pattern (designed to resemble the features of a human face) gave away more money to their respective recipients than those presented with the left-hand dots (Rigdon *et al.*, 2009). This hyper-sensitivity to the feeling of monitoring supports the idea that altruism may be encouraged when the behaviour of agents is more exposed for others to observe.

Assuming that these experiments adequately controlled for other variables and were carried out under standardised conditions, I conclude that; firstly, anonymity matters, and may well have a negative effect upon the frequency and extent of altruistic behaviours and secondly, that human agents are sensitive toward their perceived public image and will act more altruistically when their actions are, or are perceived to be, monitored, reported or publicised.

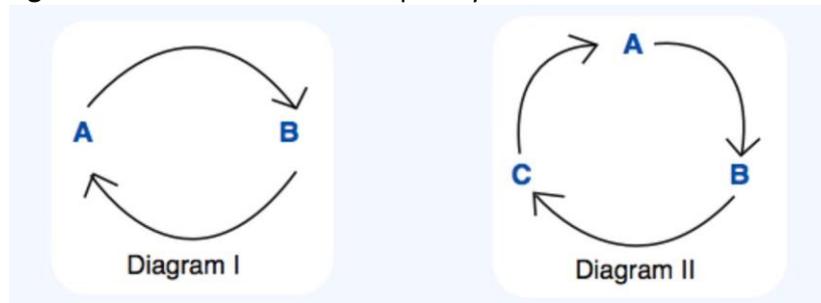
3.2 Reciprocity

The notion of reciprocity offers one explanation for agents' reputational concerns. According to Nowak and Sigmund's (1998) 'Image Scoring Model', agents strive to establish a socially favorable reputation via their own non-selfish actions towards others in the hope, or expectation, that others will act altruistically towards them in return. Human sensitivity to monitoring cues may hence be considered a social mechanism via which reciprocal altruism may operate (Mifune *et al.*, 2010). As such, the belief in reciprocated treatment, either directly or indirectly, is considered another motivator for agents' altruistic behaviour.

Reciprocity is typically discussed in its direct form, as illustrated in diagram (I) of figure (5). Here, agent A will help agent B with the informal expectation that agent B will, in return, help agent A in the future (Nowak and Sigmund, 1998). For such reciprocity to operate, agent A and B must be highly likely to

meet again and able to distinguish between altruists - those who appear to act in the interest of others, and egoists - those who appear to act only in the interest of themselves (Osinki, 2009). When altruistic acts are anonymous as in the case of UK blood donation, however, these conditions are jeopardised and *indirect* reciprocity as a motivator is perhaps more relevant.

Figure 5: Direct and Indirect Reciprocity Models



Source: Drawn by author

In this case of indirect reciprocity, a donor agent may provide help to a recipient if they are likely to have helped others in the past (Nowak and Sigmund, 1998). Although help is not expected in return from the recipient directly, it may in turn be expected from another cooperative recipient-cum-donor in the future. In the most simplistic terms, agent A gives to agent B who gives to agent C who will in turn give back to agent A, as illustrated in diagram (II). This indirect cooperation forms a network of altruists who give to those known, or suspected, to give elsewhere and hope to be rewarded in turn for their altruistic status. Note that advertising altruistic acts in this framework is beneficial to donors and if a recipient's altruistic status is misjudged, the benefactor's reputation is enhanced regardless (Nowak and Sigmund, 1998).

Cultural anthropology offers a real-world example of the indirect reciprocity model via the Kula Ring - an exchange network of 18 Trobriand Islands located in Papua New Guinea whose preindustrial economy continues to center around the gift (Bell, 1991). The Kula exchange system would operate in the same way as the model in diagram (II), only with a greater number of players. In contrast to gift-exchange systems that form an open-ended string of transactions, recurrent ceremonial exchanges of so-called Kula gifts are performed between island communities within the socio-economic network to form a ring of balanced, indirect reciprocity (Landa, 1983). For such reciprocity to operate smoothly, gifts' value must be balanced throughout the chain. If a returned gift is considered inadequate, the donor community's co-operative reputation is threatened as 'vile gossip' about the offender travels across locations, in turn jeopardising their relationship with the rest of the Kula communities (Bell, 1991, p. 161).

Debate reasonably arises here as to whether such behaviour should be considered altruistic at all since donors *are* arguably acting in their own self-interest, only indirectly. While this argument is

compelling, the working definition of altruism used for the purposes of this paper allows us to sidestep the debate. Our definition states that an act is considered altruistic when performed in the interest of another person and for no formal, extrinsic reward. Though an agent may hope or expect help in return within the reciprocity model, there is no formal or contractually obliging payment required. An agent may feel obliged informally, however, by moral norms constructed by their social environment. Nowak and Sigmund (1998) suggest that in cases of 'ultra-sociality' observed in bee hives or termite colonies, for example, Darwinian theory may explain co-operation between agents via kin selection - the primal instinct to promote the reproductive success of relatives for the survival of the wider species. Human cooperation, however, is more likely driven by cultural forces that stem from society's moral framework (Nowak and Sigmund, 1998). For these to be forces to be felt, then, an agent must be well integrated into their society.

3.3 Social Integration

According to Branas-Garza *et al.* (2010), altruistic behaviour is influenced by framing effects, to be discussed in chapter (5), and social distance, referring to agents' position within a social network. In the context of the dictator game, Branas-Garza *et al.* (2010) measure social integration via mutual elicited friendships referred to as 'reciprocal degree' and the strength or otherwise closeness of those friendships referred to as 'betweenness centrality'. Reciprocal degree is hence understood to be indicative of how well embedded an agent is in their local neighbourhood while betweenness centrality indicates how embedded an agent is within their own social network. Regression analysis of their observations indicated that statistically significant, positive correlations existed between both measures of social integration and altruism displayed in the dictator game context. Though it is difficult to isolate the so-called 'network effect' and establish causality with statistical certainty, this correlation suggests that those who are better integrated into a social network are likely to behave more altruistically towards others (Branas-Garza *et al.*, 2010).

The positive relationship between social connectedness and altruistic behaviour is supported and interpreted across many disciplines. Social scientist Alessandrini (2007) suggests that altruism may take the form of a wider lifestyle choice whereby volunteerism and social cohesion promote one another. Hamilton (1964) offers another explanation via the 'Inclusive Fitness Theory'. Within this evolutionary framework, the higher the relatedness coefficient between two agents, the more likely it is that offering help will contribute to their genes' survival. Conversely, social distance between agents indicates a low degree of genetic relatedness in terms of physical similarity and interest compatibility, thus discouraging altruistic cooperation (Osinki, 2009).

Given our bounded rationality, as discussed in section (2.1), economist Herbert Simon (1993) suggests that agents must rely in part on 'docility' - the tendency to act according the information,

recommendation and persuasion of our social peers. A so-called 'docile' person who is unable to adequately judge their own actions independently, may hence make choices that reduce their own fitness level under social advice that promotes the good of their wider community (Simon, 1993). When an agent is more heavily integrated into a society, then, their reliance on docility is likely to increase and altruistic behaviour that promotes the fitness of their group members is motivated.

3.4 Summary

According to the theoretical and experimental material covered in this chapter, non-selfish behaviour may be motivated (i) when actions are publicised or monitored, especially by in-group members, (ii) when agents have confidence or belief that acting altruistically should enhance their chance of reciprocal treatment and (iii) when agents are more integrated into their social environment. This chapter has side-stepped the moral debate as to whether such motivations jeopardise actions' status as altruistic since our aim is to later use the themes discussed for the more practical purpose of policy recommendation. I duly recognise that additional theories of altruism exist but for simplicity, have categorised material into the three aforementioned themes. The inter-disciplinary approach taken to arrive at these conclusions has meant relying on theoretical perspectives and research methodologies beyond the field of economics. While criticisms of economic theory generally concern the assumptions of models, criticisms of psychology experiments, for example, concern the management of experimental conditions and the accuracy of behaviour under controlled conditions translating into actual behaviour in the field. These concerns are taken into account and encourage the tentative employment of the above lessons in later policy discussion.

4. Application to Blood Donation

Voluntary and anonymous blood donation, as practiced in the UK, is described as 'perhaps the purest example' of non-selfish behaviour (Elster, 1990 in Mansbridge, 1990; p.46). Given our conclusions from chapter (3) regarding the motivators of altruistic behaviour in general, one may reasonably expect to find evidence that blood donors are in part, at least, motivated by reputation, reciprocity and/or social integration. In order to test for this, I attempt to derive information about donors' motivations via stated preference and revealed preference methods. While the former approach will involve investigating self-reported motivators via survey data, the latter will involve observing the characteristics of blood donors via donor profile data.

4.1 Self-reported Motivators

In 2009, Bednall *et al.* (2011) undertook an extensive literature search of 146 existing survey studies about blood donation from across America and Europe and in 2011, after refining and cross-validating

their material, a near-exhaustive summary of donation motivators as reported by over 150,000 participants was offered to the field. Table (1) presents a selection of their findings. Given their aforementioned intrinsic link, it is perhaps unsurprising that 78.3% of the 31,400 participants asked confirmed ‘Altruism’ as a motivator for giving blood. What is perhaps of greater interest, is whether participants reported more specific donation motivators in line with those discussed in chapter (3).

‘Indirect reciprocity’ is understood to motivate blood donation when a donor gives blood in response to, or in anticipation of, a similar act by a third party (Bednall *et al.*, 2011). Of the participants asked directly about this motivator, 40.8% confirmed it as a reason for donating. A distinction is made between upstream and downstream reciprocity here, with the former referring to donation prompted by receiving blood in the past, and the latter referring to the hope of receiving blood in the future (Bednall *et al.*, 2011). It seems donors are motivated most by the prompt of a friend or family member receiving blood product in the past, and to a lesser, although still significant extent, by the hope of receiving blood in the future. This data relates directly to the ideas discussed in section (3.2) and supports reciprocity as a motivator for altruistic behaviour in the case of blood donation. Reciprocal culture in blood donation is considered especially important by Wildman *et al.* (2009), who frame blood product as an intergenerational gift between the young and the old, whereby agents donate while they are young in the understanding that they can rely on their successors to maintain blood supply in their own old age.

Table 1: A Selection of Self-Reported Motivators for Blood Donation

Table (1): A Selection of Self-Reported Motivators for Blood Donation		
Motivators	Number of participants (N) asked about motivator (thousands)	Percentage of (N) who reported motivator as reason for donating (%)
Altruism	31.4	78.3
Collectivism (community)	7.77	57.6
Indirect Reciprocity	13.0	40.8
Upstream (friends & family)	8.46	47.9
Downstream	8.81	37.3
Recognition	59.7	2.7
Descriptive Norms	1.08	62.6

Source: Bednall *et al.* (2011)
 Notes: All figures rounded to 3 significant figures. A table of the full set of responses is included in the appendix.

Social integration as a motivator is not explicitly presented in the survey data, although one may suspect that intrinsic links exist between this concept and factors such as ‘Collectivism (community)’ -

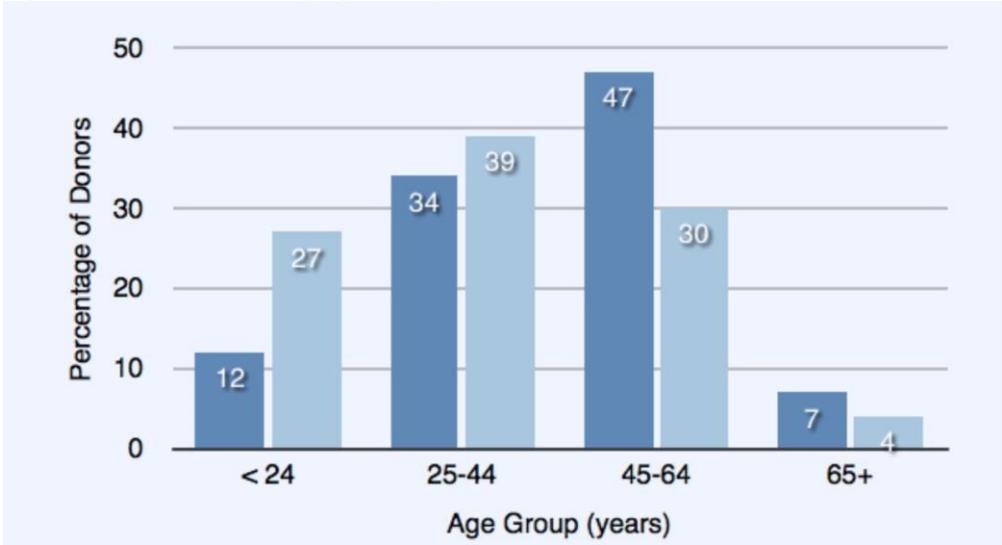
that is, motivation led by the goal of increasing community welfare (Bednall *et al.*, 2011). Perhaps the most compelling link to draw, however, is between the Darwinian concept of docility as a motivator for altruism as discussed in section (3.3), and ‘descriptive norms’ in table (1) with a confirmation rate of 62.6%. Blood donation is motivated by descriptive norms when donors’ behaviour is influenced by the perceived behaviour of others in their surrounding society (Bednall *et al.*, 2011). This concept directly supports Simon’s (1993) argument of docility - the tendency to act according to the recommendations of social peers, as a motivator for altruistic behaviour.

Similarly, reputation as a motivator for giving blood is not explicitly presented in our survey data. While comparisons may be drawn between reputational concerns and the motivator ‘recognition’, for example, a more fundamental problem exists here. That is, respondents are highly unlikely to report reputation as a motivator even if image concerns play a significant part in their decision to donate since admission to such self-interest would be contradictory to their efforts to attain a purely altruistic image of themselves. This may help to explain why despite theoretical insistence that image concerns serve as a strong motivator for altruistic behaviour, just 2.7% of participants asked confirmed that recognition for their blood donation motivated their behaviour.

4.2 Donor Profiles

According to Lattimore et al (2015), 47% of all blood donors in England and Wales who gave blood in 2010/2011 were aged between 45 and 64. Just 12% were aged 24 or under. When compared with trends for high income countries in general, the UK’s generational divide in giving blood is highlighted. According to Charities Aid Foundation (CAF) (2012), this generational gap in donation behaviour has been felt across the entire charities sector over the past 3 decades. Their ‘Mind the Gap’ report claims

Figure 6: Blood Donors by Age Group



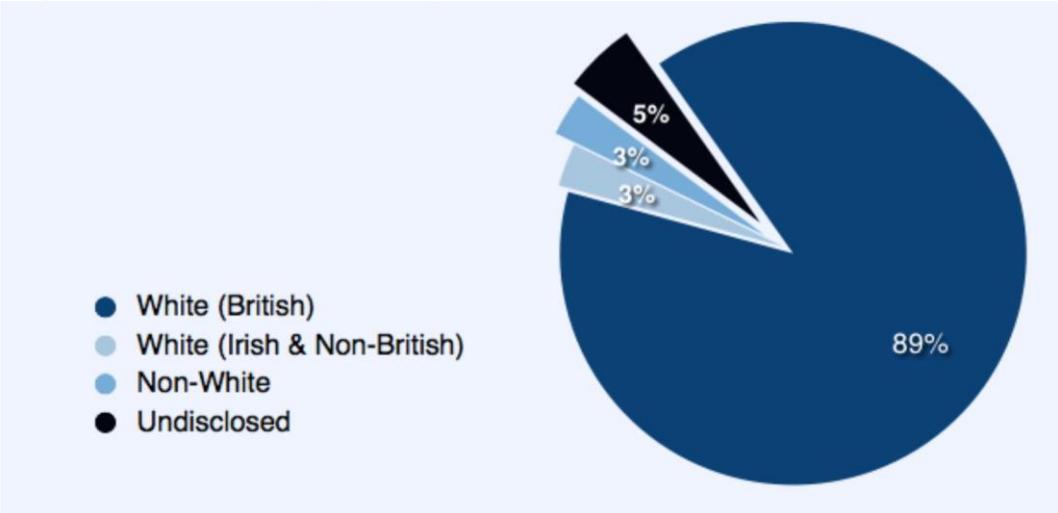
■ England and Wales (2010/11) High Income Countries (2014)

Source(s): Lattimore *et al.*, 2015; WHO, 2014

that in monetary terms, over 60s in the UK are up to six times more generous than under 30s and that Britons born during the second world war have displayed ‘remarkable philanthropic commitment’ throughout their lives in terms of charitable donation (CAF, 2012; p.2). If Alessandrini’s (2007) hypothesis about charitable behaviour as a wider lifestyle choice holds, as proposed in section (3.3), CAF’s claim of a generational divide in charitable donation may well extend to the case of blood donation where it is suitably observed that a significantly greater number of older agents donate compared with younger donors.

Though the trend presented in figure (6) is largely open to interpretation, one can reasonably offer all three themes of reputation, reciprocity and social integration as contributors to its emergence. If a parallel is drawn between age and life experience, it is reasonable to propose that older donors may well be more socially integrated into their respective communities, with an established reputation to uphold and protect via acts of altruism, relative to their younger counterparts. One may further speculate that older donors are more likely to know friends or family who have themselves received blood transfusions in the past, in turn increasing the opportunity for the concept of reciprocity as a motivator to take hold and encourage their donation behaviour.

Figure 7: Blood Donors by Ethnicity



Source(s): Lattimore *et al.*, 2015

A second trend in Lattimore *et al.*'s (2015) data concerns the ethnicity of donors in England and Wales, 2010/2011. As figure (7) illustrates, the vast majority of said blood donors were of white British descent. The theme of social integration may be employed here to provide one rationale for the underrepresentation of ethnic minorities among blood donor populations. If minority groups feel a sense of social exclusion from their wider community, altruistic behaviours directed towards benefiting that community may not be prioritised (Lattimore *et al.*, 2015). In other words, the social objectives of minor, insular communities may not necessarily transpose to those of wider society. The positive relationship between social integration and altruistic behaviour may hence hold and be recognised

working here in reverse, whereby less social integration may lead to less motivation to give blood. While this sociological explanation is compelling and seems to support one of our conclusions from chapter (3), more practical explanations may also be offered to explain figure (7). If an agent who is willing to donate blood has travelled just prior to attending a donation session, he/she may be turned away for safety reasons. It may be argued that those of an ethnic minority are more likely to travel frequently given overseas connections and are therefore likely to become ineligible to donate for a greater amount of time compared with those who travel little (Lattimore *et al.*, 2015).

Though economists traditionally prefer revealed preference methods of information extraction, based on observed behaviour, over stated preference methods, which rely on hypothetical survey responses, in the case of blood donation motivation, a combination of both methods is promoted (Wardman, 1988; Pearce *et al.*, 2002). Confidentiality issues, for one, limit the extent to which researchers can rely solely on the observations of specific characteristics of blood donors. The type of data that is available, as presented in figures (6) and (7), is largely open to interpretation and although interesting to explore and speculate about, definitive conclusions regarding donor motivations based on character profiles alone are unlikely to be met. The personal nature of the decision to give blood also suits that of survey responses that attempt to reveal motivations directly.

5. Policy Review & Recommendation

The World Health Organisation (WHO) insists that the provision of safe blood in adequate quantity should be a prioritised objective of every country's national health service (WHO, 2010; WHO, 2014). Though the NHS has traditionally relied on blood donations that are anonymous and entirely unrewarded to achieve this objective, if our ageing population does begin to threaten a supply shortage, as proposed in section (1.1), it may be valuable for policymakers to consider ways in which donations may be incentivised in the near future (Lattimore *et al.*, 2015; Costa-Font *et al.*, 2012). The following chapter will review the traditional debate surrounding paid blood donation, led by Titmuss in the 1970s, and explore the potential of introducing non-monetary incentives in line with the three theoretical themes of reputation, reciprocity and social integration.

5.1 Current UK Challenges & Objectives

Carter *et al.* (2011) propose that for health services in developed countries, the blood challenge extends beyond achieving sufficiency and safety of blood product, but also efficient, intelligent inventory control and maintenance of the correct mix of blood groups. It is hence proposed that communicating a message of a constant, urgent need for blood donors is misleading in countries like the UK (Carter *et al.*, 2011). While this paper supports that maintaining an adequate level of supply is not the only objective faced by the NHS, in the context of an ageing population whereby relatively

fewer donors may be available to cater for the medical needs of relatively more older patients, greater recruitment of younger blood donors *is* considered key (Lattimore *et al.*, 2015; Zito *et al.*, 2012). Should recruitment be successful, a secondary challenge involves the retention of new blood donors (Bednall *et al.*, 2011). Carter *et al.* (2011) propose that habit formation and self-identification is crucial in achieving this since retention is maximised when agents form a donation habit and ultimately identify themselves as a blood donor. An incentive scheme that serves to not only attract new recruits, but also to aid habit formation and personal identification as a member of the blood donor community is hence considered ideal.

5.2 *The Economic Solution*

Hausman and McPherson (2006) stress that altruistic behaviour is characterised by some cost that is sacrificed by an agent in the interest of another's utility gain. Costs to blood donors involve, for example, minor pain or discomfort during the medical procedure and the associated opportunity costs of travel and waiting time (Bednall *et al.*, 2011). Within a cost-benefit framework, blood donation may be encouraged if the gap between associated costs and benefits is reduced. Standard economic theory insists that for a given activity, any additional incentive will increase agents' willingness to perform (Lacetera *et al.*, 2010). Given that orthodox economics assumes behaviour is motivated solely by self-interest and that a direct relationship exists between rational agents' income and utility levels, monetary incentive introduced to encourage a desired behaviour may be justified (Thaler, 2000; Lacetera *et al.*, 2010). While financial incentive alone may not motivate an agent to perform an activity, Goette *et al.* (2010) suggest it will help to tip the balance in terms of costs and benefits.

More recent economic models propose that financial incentives may not work so simply in cases where agents already perform an activity due to intrinsic motivation (Lacetera *et al.*, 2010). Kamenica (2012) claims that contrary to standard microeconomics, if a person is paid for a task, they may in fact feel *less* willing to complete it. Since donated blood is considered an 'odd kind of gift' for its altruistic roots, personal nature and intimate method of giving, it is perhaps unsurprising that much evidence suggests that donation behaviour may well flout standard economic theory (Healy, 2000 in Masser *et al.*, 2008; p. 215)

5.3 *The Titmuss Argument*

In early 1971, social researcher Richard Titmuss published 'The Gift Relationship' in which he argued that paying agents to give blood is inefficient and would reduce the quality of the blood product collected (Titmuss, 1970 in Oakley & Ashton, 1997). His work drew a comparison between the 1970s blood supply system in the US, where most donors were paid for their donation, and in the UK, where all donors were unpaid (Niza *et al.*, 2013). He concluded that the British system was far superior in the

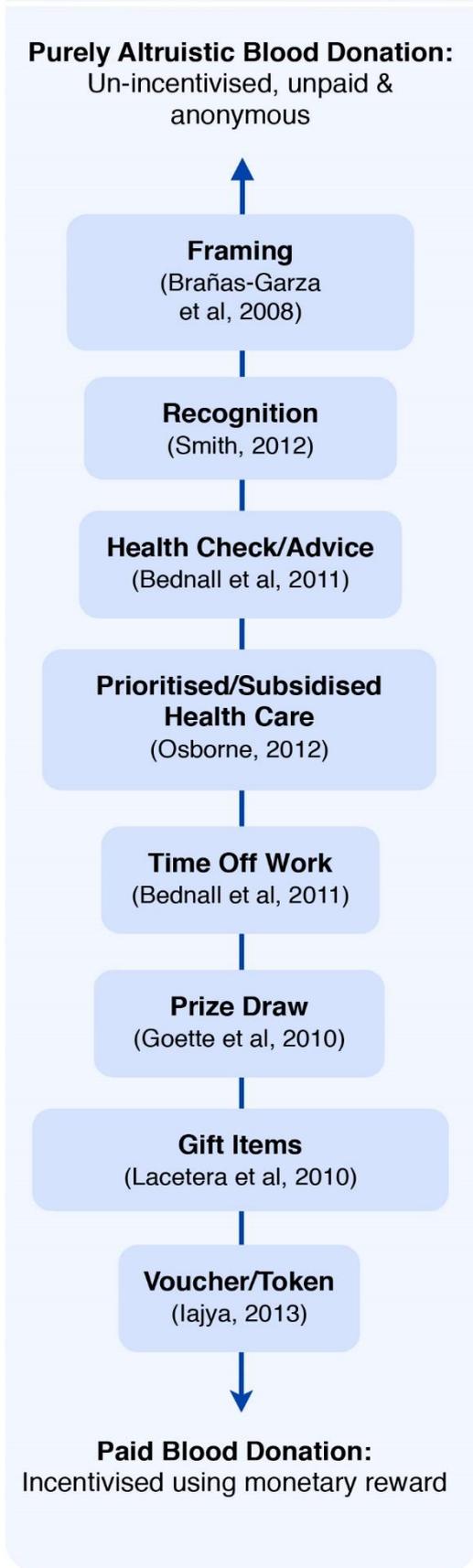
provision of safe blood and stressed that the economic inefficiency of the commercial system was owed to the increased cost per unit of blood given its lesser quality (Oakley and Ashton, 1997; Niza *et al.*, 2013).

Financial payment may reduce the quality of blood collected since it attracts new blood donors with a worse risk factor (Goette *et al.*, 2010). This is because in the market context, motive exists to conceal information about donors' health status in order to avoid deferral and jeopardise receiving payment (Abolghasemi *et al.*, 2010). The consequences of this are thought to have been felt in the 1980s when US blood supply was contaminated with HIV after financial payment for blood product had supposedly incentivised HIV positive agents to conceal their diagnosis when donating (Healy, 1999). As a result, it is estimated that up to 50% of haemophiliacs who had received blood transfusions around the time contracted HIV and as of December 2001, an estimated 14,262 persons had been diagnosed with AIDS as a direct result of contaminated blood products (Wellington, 2014; Donegan, 2003)

Though Titmuss himself focused on the quality of blood product in a commercialised system, his successors claim that offering payment may also reduce the quantity of blood donated (Oakley and Ashton, 1997; Goette *et al.*, 2010). Benabou and Tirole's (2003) model of utility from section (3.1) outlined how behaviour is motivated both by extrinsic and intrinsic rewards (Steed, 2013). The crowding out hypothesis in this context refers to the process by which extrinsic reward, in the form of monetary payment, crowds out the intrinsic reward of giving (Lacetera *et al.*, 2010; Goette *et al.*, 2010). According to this theory, if policymakers were to introduce extrinsic reward for donating blood in a bid to increase overall supply, while new donors may well be attracted, existing donors already motivated by the intrinsic reward, or otherwise 'warm glow' of giving blood may feel less motivated to donate (Goette *et al.*, 2010). An explanation for this in line with our theoretical theme of reputation proposes that when no monetary payment is offered for giving blood, donors are recognised and rewarded via reputational gain for their altruistic behaviour. When financial incentive is introduced, the image rewards of donating are lowered and donors' selfless motives may be questioned. It is perhaps unsurprising, then, that research has suggested monetary incentives are more effective in private conditions relative to public conditions (Goette *et al.*, 2010).

The view that unpaid blood donation is superior in terms of economic efficiency and moral value is one that has been adopted by both the WHO and the UK government (Buyx, 2009). According to the Human Tissue Act (2004), the buying and selling of blood products in the UK is prohibited by law. As such, offering monetary incentive for blood donation is ruled out as a viable strategy for UK policymakers on legal, moral and economic grounds, though its net effectiveness is not entirely doubted (Goette *et al.*, 2010). This by no means dismisses the potential effectiveness and moral permissibility all types of incentives, however, and if policymakers widen their understanding of what may motivate agents

**Figure (8):
The Incentive Continuum**



beyond the orthodox economic view of finance and self-interest, a realm of non-monetary behavioural strategies may become available (Buyx, 2009).

5.4 The Incentive Continuum

The debate surrounding blood donation incentives has traditionally taken a binary form whereby policymakers must decide between either creating a marketplace for blood product by offering donors financial payment or relying purely on altruistic donation where no formal reward or incentive is offered. The trouble with this approach is that a dichotomy is formed that insists blood donors are either of a purely selfless, altruistic nature, or of a purely selfish, financially-orientated one (Buyx, 2009). As a result, little opportunity exists to take advantage of the more complex behavioural motivations discussed throughout this paper. I hence argue that the tired, binary approach towards blood donation policy calls for reform using the non-conventional lessons of the behavioural sciences whereby incentive schemes and non-cash rewards for giving blood are viewed along a continuum with purely altruistic donation at one end, and paid donation at the other.

Incentives in this case are not be treated in isolation as a means to increase donation rates, but as one factor within a wider approach to reach that end by helping to reduce the difference between the costs and benefits associated with giving blood (Buyx, 2009). According to experimental research conducted by Goette *et al.* (2010), the emerging pattern in the case of blood donation is that the more the incentive resembles money and the less it is associated with health, the less accepted it is. On this basis, figure (8) attempts to rank incentive ideas as proposed in literature from purely altruistic donation, considered most acceptable on

moral grounds, to paid donation, as considered least acceptable (Goette *et al.*, 2010; Abolghasemi, 2010). Moral acceptability is considered important for avoiding the crowding out of unselfish, intrinsic motivation that may deter existing donors from repeat donation. Of course, the order in which the example incentives have been arranged is open to policymakers' interpretation in practice but is for now, primarily based on Goette *et al.*'s (2010) aforementioned criteria of moral acceptability. The idea is that instead of choosing to adopt a political framework based upon either end point of figure (8), policymakers can work along the continuum to test which incentives prove effective in their respective societies.

6. Conclusions & Policy Recommendations

Given that blood donation in the UK is currently anonymous, un-incentivised and unrewarded, policy at present sits at the top end of the continuum presented in figure (8) with great opportunity to exploit the potential of the theoretically-informed incentive ideas located below. An initial movement down the continuum would introduce UK policymakers to the potential of framing effects and recognition as motivators for blood donation. The possible designs of such incentives are briefly discussed below.

Framing is a key concept in behavioural economics that involves the careful design of information presentation and delivery that serves to influence decision-making (Samson, 2014; Karmenica, 2012). Though the NHSBT run marketing campaigns that may attempt to do just that, I argue that better designed 'nudges' to give blood that are aligned with the theoretical themes of chapter (3) or better targeted towards a younger audience, may help to incentivise future donation (Thaler and Sustein, 2009). For example, policymakers may speculate that the UK's generational divide in giving, as insisted by CAF (2012), may be owed to younger generations' growing up through the 2008 economic recession that may have instilled a culture of carefulness about unnecessary spending. In order to encourage younger blood donors, then, framing effects may be exploited by presenting the act of blood donation as a non-monetary contribution to society - a way in which young people can help those in need in the community without incurring a financial cost to themselves.

Offering donors recognition for giving blood is considered a particularly powerful incentive since it has potential to tap into all three themes of reputation, reciprocity and social integration. It would also contribute towards agents' self-identification as members of the blood donor community which is considered key for donor retention (Carter *et al.*, 2011). The NHSBT currently offers donors tokens of recognition on an individual, private basis via small gift items such as badges and certificates at milestone donations (Smith, 2012). What has perhaps not yet been explored is widening the scope of

Figure (9): Policy Bundles Recommended for the UK by Theme



this recognition to a community level.

For example, recognition could be formalised publicly, at an institutional level whereby corporations, universities and other community groups could compete against one another to boast that 'x' percent of their members donate blood in order to receive a universally recognised ranking among donating communities. Not only would this help to instil a culture of workplace giving, as recommended by the CAF (2012), but it would outsource the task of encouraging donation to private sector institutions who have an existing interest in their social reputation. If relations between the NHSBT and human resource departments of such institutions could be established, the secondary objective of achieving intelligent, efficient inventory control and blood group mixes, as stressed by Carter *et al.* (2011), could also be met. With details of all willing donors available, the NHSBT could forecast their needs by blood group prior to visiting so that administrative services could contact the necessary donors to meet specific demand. This transition could in turn help the UK facilitate the so-called 'pull-model' whereby the right type and quantity of blood product is collected at the right time given anticipated demand. This revised model is considered superior in efficiency terms to the 'push-model' as currently practiced in the UK whereby anybody who is willing and eligible donates and whatever blood product is needed in the window between collection and expiry is used, while the rest is largely wasted (Carter *et al.*, 2011).

Alternatively, policymakers could combine a selection of incentives in line with the motivational themes associated with altruism as derived from our interdisciplinary research presented in chapter (3). Figure (9) offers examples of policy bundles, inspired by the ideas presented in figure (8), for such an approach.

By exploring alternative behavioural theory, this paper hopes to have offered convincing evidence that human agents are not motivated solely by selfinterest or monetary gain as depicted by the homo-economicus, the species of our theoretical counterparts. In the case of altruistic behaviours, this paper focused on the three theoretical themes of reputation, reciprocity and social integration as more complex behavioural motivators using lessons from social sciences beyond the field of economics. If policymakers are willing to accept these wider behavioural contributions, this paper concludes that their options with regards to incentivising future blood donation rates are multiplied.

Looking forward, the proposed strategies as summarised in figures (8) and (9) could be trialled firstly in a laboratory context, then at a community level to test for their effectiveness in reality. As well as experimental studies, future researchers may also consider carrying out longitudinal studies of donor behaviour. Though costly, time series data may be hugely valuable for examining the behavioural patterns and retention rates of donors over time to further fine tune our understanding of why agents act in the interest of others and how such cooperative behaviour, both in and out of the case of blood donation, can be encouraged in future.

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Appendix

Table (1): A Full Summary of Self-Reported Motivators for Blood Donation according to Survey Data (1950-2009)

<i>Motivators</i>	<i>Number of participants (N) asked about motivator (thousands)</i>	<i>Percentage of (N) who reported motivator as reason for donating (%)</i>
1. Prosocial Motivation	32.4	79.7
- Altruism	31.4	78.3
- Collectivism (community)	7.77	57.6
- Collectivism (friends & family)	7.64	43.4
2. Personal Values	71.0	74.5
- Personal moral norms	69.1	76.2
- Religiosity	3.82	9.9
3. Perceived Need for Donation	66.7	45.0
- After a health crisis	13.5	57.3
- Everyday awareness	53.5	42.0
4. Indirect Reciprocity	13.0	40.8
- Upstream (friends & family)	8.46	47.9
- Downstream	8.81	37.3
- Upstream (self)	47.8	18.3
5. Intrinsic Motivation	13.6	38.0
- Self-Esteem	11.6	41.0
- Curiosity	3.92	22.9
6. Marketing Communications	70.9	25.5
- Direct Marketing	15.7	48.6
- Advertising	14.4	23.2
- Blood Drives	50.3	17.3
7. Incentives	118	12.3
- Health Check	11.0	33.1
- Money	71.6	19.2
- Perceived health benefits	60.6	15.1
- Learn Blood Type	14.1	11.6
- Time off work/school	94.1	9.4
- Gift Item	57.1	6.4
- Infectious disease screening	97.5	4.3
- Recognition	59.7	2.7
8. Social Norms	76.1	11.4
- Descriptive norms	1.08	62.6
- Subjective norms	76.1	11.2
9. Convenience of Collection Site	2.12	80.5
10. Reputation of Collection Agency	5.03	59.6

Source(s): Adapted from Bednall et al, 2011; p. 325, recreated by author

Notes: Survey responses from 92 samples across 49 studies have been collated and categorised by Bednall *et al.* (2011) and then summarised further by the author. Figures in column two are rounded to three significant figures. Figures in column three are rounded to one decimal place.