Is blood donation a pure altruistic act? The answer to this question has profound implications for the type of interventions we can adopt and the way in which research is conducted into blood donor behaviour. This review will address this question and the implications of the answer by introducing the mechanisms of altruism (MOA) approach. As a behaviour, it is argued that blood donation is altruistic, but the motivation for the act may not be. The MOA approach draws on insights from biology, economics and psychology to identify the key MOA that can be used to describe the motivations of blood donors. The MOA requires identifying congruency between self-report measures of motivations and behavioural indices of MOA derived from economic games. Using the MOA approach, we will show that blood donation is not pure altruism (caring about the welfare of others at personal expense) but rather a mixture of warm-glow giving (finding the act of donation emotionally rewarding) and reluctant altruism (co-operation in the face of free-riding rather than punishment of free-riders). With motivations that are not purely altruistic, six novel avenues for interventions are described: (1) charitable and financial incentives, (2) guilt appeals, (3) norms focused on donor rates, (4) voluntary reciprocal altruism (VRA), (5) warm-glow appeals and (6) empathizing with a single case (identifiable victim effect). We show how the MOA approach provides a framework for other theoretical models and present a model of donor motivation across the donation cycle.

Key words: Altruism, blood collection, donors, motivation/recruitment, reciprocity, warm-glow

Key questions concerning altruistic blood donation

From the perspectives of policymakers, clinicians, researchers, donors, recipients and the general non-donating public, pure altruism (i.e. helping another, at a personal cost without personal gain) is assumed to be the bedrock of blood donation [1]. This assumption has crucial implications for (1) intervention strategies and (2) conducting research into donor motivations. If pure altruism is the underlying principle for blood donation, then a key issue becomes whether or not we should preclude interventions that highlight personal benefits or provide financial incentives? We will discuss these issues and others below and introduce the mechanisms of altruism (MOA) approach to address these questions [2].

What is altruism and is blood donation altruistic?

Altruism has been variously defined across the social and biological sciences as well as in philosophy [1]. From an evolutionary biology perspective, altruism has a very specific definition: to increase Darwinian fitness (i.e. long-term survival and fecundity) of the recipient at a cost to the donor (usually long-term fitness) [3, 4]. While there is some debate over the precise definition of altruism [3, 4], in blood donor research, we are concerned with psychological altruism (motives for action) rather than biological...
altruism (Darwinian fitness) [5]. As such, definitions of altruism from the social sciences (psychology and economics particularly) are more applicable. Definitions of altruism across economics, psychology and philosophy tend to converge on the idea that altruism is either a preference or ultimate desire to maximize the welfare (utility) of others, by reducing their suffering, at a personal cost, without personal benefit [6–8]. Consistent with this, the Nuffield Council on Bioethics define altruism as an action ‘…that is motivated by concern for the welfare of the recipient of some beneficent behaviour, rather than by concern for the welfare of the person carrying out the action (p 139 [1]).’ The Nuffield Council [1] also highlights that while a behaviour may appear altruistic, it may be selfishly motivated, such as helping others to enhance personal reputation [9]. They state, ‘We do not think it important from an ethical perspective that altruism is thoroughly ‘pure’. First, someone may donate biological materials because it also makes them feel good to help others. In a sense the donor’s own pleasure may lie at the root of their decision. But cases such as these remain altruistic for our purposes, on the grounds that concern for the welfare of others is a genuine motivator, and on the grounds that a disposition to help others can be reckoned as virtuous whether or not founded on the pleasure such action brings to the donor (p 139 [1]).’ Indeed, from an economic and psychological perspective, the scenario described above would be considered ‘impure altruism’ [6, 7]. However, the general public and vast majority of donors normatively describe pure altruism as the bedrock of blood donation [10, 11]. This may well reflect the fact that at a behavioural level, blood donation may be regarded as an archetypal pure altruistic act; that is, the blood donor acts voluntarily, for the benefit another at a personal cost.

The mechanisms of altruism approach

The fact that blood donation may not reflect pure altruism led Ferguson [2, 12, 13] to develop a ‘mechanisms of altruism’ (MOA) approach to donor motivation. This approach involves applying the theoretical insights derived from biological, economic and psychological sciences, concerning the MOA, to blood donor research. The aim of doing so is to define more clearly blood donors’ underlying motivations with the aim of developing more targeted interventions. The MOA approach also involves cross-validating self-reported motivations with preferences derived from economic games. Table 1 details some of the key MOA and their application to understanding blood donor motivations.

Of the MOA derived from the biology literature, three have some potential role in explaining blood donor behaviour: downstream indirect reciprocity, strong reciprocity and costly signalling theory (CST). Traditionally, downstream reciprocity operates via reputation building, and one way to do this is to display publically your donation status. The existing behavioural evidence suggests that donors rarely express publically that they donate blood [14]. Also, intentions based on social recognition, via social media, are lower than intentions not based on social approval [15]. However, Chell and Mor-timer [15] do show that social recognition, via social media, increases donor intentions specifically for donors with motivations to donate that focus on social approval/acceptability, such as donating that they have made a difference and are a good person [15]. Thus, interventions based on social approval may only be effective for certain groups of donors. Downstream indirect reciprocity may also operate when, a friend or relative of that recipient who has received a successful transfusion, goes on to be a blood donor out of gratitude to the transfusion service.

Strong reciprocators have a preference to help those who act fairly and punish those who act unfairly. A key feature of strong reciprocation is that this help is not contingent on expecting any personal future reciprocation. This lack of expected reciprocation is important when considering strong reciprocation as a potential motivation for blood donation, as the donor and recipient are anonymous and will never meet. As such, any reciprocation is not possible. Blood donation may also act as a costly signal [10]. Costly signals are nonfakable displays that indicate that the organism can sustain the cost of the display, thus indicating fitness to potential mates [16]. Costly signalling theory (CST) suggests what is important is who makes the displays about their altruism and when [16]. A prediction from CST is that childless donors, in their fertile years, will be more likely to tell people they are a blood donor [16].

In terms of economic models, warm-glow, inequality aversion and conditional co-operation, all have implications for blood donor motivation. Warm-glow suggests that people are motivated to help because it makes them feel good about themselves [3]. The Nuffield Council [1] directly highlight warm-glow in relation to blood and organ donation, suggesting people donate ‘…because it also makes them feel good to help others’ (p 139). Feeling good after donating has also been shown to increase the likelihood of future donations [17]. Models of inequality aversion suggest that people are motivated to reduce inequality between themselves and others [18]. When you have more than others, inequality is termed advantageous. Advantageous inequality leads to guilt, and it is argued that people are motivated to reduce these feelings of guilt by reducing the inequality [18]. The potential donor is healthy and is able to give blood; thus, the donor is relatively better off than the unhealthy recipients. Thus, it is reasonable to ask whether blood donors...
### Table 1: Mechanisms for altruism and blood donation

| Discipline | Mechanism | Description | Blood donation |
|------------|-----------|-------------|----------------|
| Biology    | Direct reciprocity | If you expect to see the same person again, then helping them directly increases the probability that they will repay the favour at some future date and help you. | This mechanism cannot underlie blood donation as donor and recipient never meet or interact. |
|            | Downstream indirect reciprocity | You gain a positive reputation from helping (either via direct observation or gossip). That positive reputation increases the likelihood of being helped by another unrelated person in the future, as long as they know your reputation. | Unlikely mechanism for blood donation as donors rarely publicize they are donors [14] or may only work for donors motivated by social approval [15]. May work by repaying the good reputation of the transfusion service, if they feel the transfusion has helped someone they know. |
|            | Upstream indirect reciprocity | If you are helped by someone you feel grateful and go on to help another unrelated person. | Unlikely mechanism for blood donation as the recipient of a transfusion is unlikely to be able to donate to help another person. |
|            | Strong reciprocity | Strong reciprocators will preferentially offer help to those with a good reputation and punish those with a poor reputation, even when they do not expect future reciprocation. | Blood donors are no more likely to help and punish than non-donors. |
|            | Costly signals | Costly signals are costs (e.g. pain) or attributes (e.g. altruism) that are not fakable by the organism, as the organism sustains the cost of the signal without detriment [16]. | Unlikely to underlie blood donation in developed countries as donors cannot give blood preferentially to their relatives, but is still a mechanism adopted in developing countries [63]. |
|            | Kin | Preferential helping is directed towards relatives than nonrelatives. | This mechanism cannot underlie blood donation as donor and recipient never meet or interact. |
| Economics  | Warm-glow | This is the extra emotional utility the person feels from the act of helping. This may be both anticipated and experienced. | This mechanism cannot underlie blood donation as donor and recipient never meet or interact. |
|            | Inequality aversion | People have a preference to reduce inequality between themselves and another, based on norms of fairness. If the other person has more (disadvantageous inequality), the reduction is driven by envy, and if the other has less (advantageous inequality), it is driven by guilt. It is argued that envy is a stronger driver then guilt. | Suggests that guilt may be a potential mechanism to motivate donors; that is, having blood and knowing that others need, it may result in advantageous inequality leading to the need to reduce guilt. |
|            | Conditional co-operation | Conditional co-operation occurs when a person is aware of others levels of helping and matches these, but gives just slightly less. | Suggests that conditional co-operators (CCs) are sensitive to information concerning the percentage of donor and will respond proportionally. Thus, saying that only 4% of the eligible population donate may result in a small percentage (< 4%) of CCs donating. |
| Psychology | Empathy-altruism | Empathy aroused towards a target in distress results in feelings of sympathy and compassion towards the target, motivating the ultimate desire to relieve the person’s distress. | A potential mechanism as long as the donor is able to visualize who is being helped. Evidence, however, suggests that trait empathy may have little role to play in blood donation. |
|            | Negative state relief | Observing a target in distress results in personal feelings of distress, and the helper is motivated to help to reduce these personal negative feelings | A potential mechanism, as guilt that may arise from advantageous inequality aversion, may motive donation. Indeed, guilt as a motivation for donation is reported. |
|            | Reluctant altruism | Reluctant altruist offers help preferentially in the context where others free-ride compared to a context where help is frequently offered. This is especially the case if the target of help is a ‘good cause’ or has a good reputation. Reluctant altruists are more likely to evangelize about blood donation. | A potential mechanism as free-riding is high in blood donation. This will especially be the case for first time donors. |
| Personality | Conscientiousness | Relatively stable enduring predispositions to respond in a particular way given a particular context. | Conscientiousness has been identified a key predictor of repeat donations. |
are likely to be motivated by guilt. Finally, conditional co-operation suggests that people help others in a conditional manner [19]. If others offer little help the conditional co-operator also offers little help, if others offer a lot of help the conditional co-operator also offers a lot of help. However, in all cases, the conditional co-operator offers help at a slightly lower level than others. In samples studied so far, about 50% of people are conditional co-operators [19]. If conditional co-operation is a mechanism underlying blood donation, then knowing that very few people already donate will not motivate conditional co-operators to donate. This may sustain the constant low level of donation in the population, which runs at about 4%.

Psychological models of altruism have focused primarily on motivations, emotional regulation via the negative state relief (NSR) model, reluctant altruism and personality [20]. Evidence shows that empathic personality traits are not linked to blood donation [12, 13, 21], but traits such as conscientiousness (e.g. hard-working, organized) are [22]. However, both NSR and reluctant altruism do offer some promising insights into blood donor motivations. The NSR model suggests that people help to reduce the negative emotions they feel arising from seeing or imagining another in distress [23]. Thus, considering a recipient in need may motivate someone to donate in order to reduce the negative feeling this causes. Reluctant altruism was first identified and described by Ferguson et al. [24]. Reluctant altruism is a preference to help, in the face of free-riding, rather than punish the free-riders [2, 24, 25]. The reluctant altruist is motivated to help because they believe the cause is worthy, but do not trust others to help. The negative emotions they feel towards free-riding and the lack of trust in others further energize them into helping [26]. Reluctant altruism is important for two reasons. First, reluctant altruism is emerging as a new and important motivator for blood donation [2, 24, 25]. Second, reluctant altruism challenges an established model of altruism that the punishment of free-riders leads to co-operation. As such, reluctant altruism offers a novel contribution to the literature of altruism [2].

Implications of MOA for methodology

The MOA approach draws heavily on the distinction between (1) behavioural altruism (β-altruism: behavioural indicators of altruism derived from preferences in economic games), (2) psychological altruism (ψ-altruism: motivations for altruism) and (3) biological altruism (B-altruism: Darwinian fitness) [25, 27]. This leads to two clear methodological implications. The first is the need to use behavioural measures of altruism (β-altruism) to cross-validate self-reported altruistic motivations (ψ-altruism). Ferguson [2] details the types of behavioural games that can be used to assess pure altruism, warm-glow, conditional co-operation and so on. This cross-validation helps circumvent problems of the self-presentational bias inherent in self-reports.

The second implication is to explore the neurobiology of altruism in blood donors. This will help to validate some of the key motivational distinctions suggested for reluctant altruism and warm-glow. For example, increased activity in pathways linked to oxytocin (as well as levels of oxytocin) and increased vagus nerve activity have been linked to increased trust and pro-sociality [28, 29]. The reluctant altruist is hypothesized to lack trust in others’ willingness to co-operate. As such, blood donors scoring high on reluctant altruism should have lower endogenous oxytocin levels. Increased dopamine and activity in dopaminergic pathways have been linked to greater giving and feelings of warm-glow [30]. Ferguson [2] suggests that blood donors may be warm-glow junkies who are attracted to donate blood to get their warm-glow fix. This suggests that either blood donors could have a less sensitive dopaminergic pathway and seek out high warm-glow-affording contexts. Alternatively, a model more akin to addiction may operate, whereby the dopaminergic system becomes sensitized and they need to return to donate to get their warm-glow ‘fix’ [17]. Either way, the study of the links between blood donors’ motivation and their underlying neurological responses would be a worthy pursuit.

Evidence from the MOA approach

Work using the MOA approach is in its infancy, but findings suggest that blood donors are saintly sinning, warm-glow giving and reluctant altruists [2]. Ferguson et al. [12] compared blood donors and non-blood donors on variants of an economic game – a charity dictator game (CDG) – to assess altruism and warm-glow. In the CDG participants decide how much of a monetary endowment to give to a charity of their choice. In the warm-glow version, the financial consequence of the participant’s donation is removed via one-for-one crowding out; that is, however much the participants give to the charity, the experimenter takes the same amount away from the charity’s endowment (see [2, 12] for exact details of the games). Thus, as the charity cannot financially benefit from the donation, the only motive to give is warm-glow. The pattern of results was very informative. While both donors and non-donors were generous in the CDG, donors gave significantly less than non-donors. This can be interpreted as ‘saintly sinning’ [31]. Being a blood donor allows the donor to define themselves as a good person; therefore, they feel they have some ‘moral justification’ for behaving less pro-socially in another domain, in this
case donating to a charity. However, a complete reversal is observed in a warm-glow CDG. Again both donors and nondonors were generous; however, this time donors were more generous than nondonors. This behavioural data resonates with self-report data showing that both personal benefit and warm-glow predict behavioural intentions to donate in experienced blood donors [24] and actual attendance to donate [13]. Ferguson et al. [24] also showed that reluctant altruism was an important predictor of donation intentions in first time and novice donors, but not experienced donors. Reluctant altruism is seen as important for first time donations because the reluctant altruist is attracted by the levels of high free-riding in blood donation (approx. 96%). Thus, if the reluctant altruist is seeking a worthy cause with a high free-riding rate, to which they can make a difference, they will be attracted to become a blood donor.

### Implications for interventions

The MOA has a number of clear and novel implications for interventions. When considering interventions, the Nuffield Council extends the notion of altruism as a construct ‘...underpinning important communal values expresses something very significant about the kind of society in which we wish to live. Understood in this way, altruism has much in common with solidarity: an altruistic basis for donation helps underpin a communal, and collective, approach to the provision of bodily material for others’ needs, where generosity and compassion are valued. (p. 5 [1]).’ This implies that the interventions we choose have implications for the sort of society we wish to live in. We will consider this further in the discussion of different interventions below.

Below we briefly detail a series of interventions derived from the MOA approach: (1) charitable incentives and financial incentives, (2) guilt appeals, (3) norms focused on donation rates, (4) voluntary reciprocal altruism (VRA), (5) warm-glow appeals and (6) empathizing with a single case.

### Charitable incentives and financial incentives

The Nuffield Council [1] links altruistic intervention to nonpayment but observes that for blood and organs ‘...in circumstances where altruism does not play a central role, there appears to be much less justification for
avoiding the use of financial reward as a form of recognition (p 14)'. If the findings of the MAO approach are accepted and the motivations of blood donors do not reflect pure altruism, then (1) philosophically, payment is an option and (2) it suggests that empirical evidence should support the effectiveness of incentives.

One way to incentivise blood donation is via charity-based financial incentives. These operate by providing the donor with cash they can donate to another health charity [32]. This could work by providing the opportunity to gain extra warm-glow and thus may have real appeal for the warm-glow-motivated blood donor [2]. Indeed, there is some support for the idea that charity-based financial incentives increase blood donation rates in women [33].

The effectiveness of financial incentives to increase blood donor recruitment, while maintaining a safe blood supply, has received strong empirical support [34]. Lactera, Macis and Slovin [35] showed that donor attendance was proportional to the level of incentive (a gift card for various shops). However, these incentives were framed as small ‘gifts’ rather than ‘payment’, and this difference may be crucial to the effectiveness of incentives [34, 36]. However, warm-glow is a key motivation underlying blood donation. If warm-glow is an intrinsic motivation, then incentives should act to undermine it. Such undermining should lead to a reduction in the donation rate rather than an increase. However, warm-glow, in the context of blood donation, is linked to helping the community [25] so has an ‘other-regarding’ aspect to it. Furthermore, the strength of warm-glow experienced in the blood donor context is likely to be a very strong. This strength is likely to outweigh any negative effects of a small gift voucher. A useful analogy would be ‘vocational work’. While such work is paid, the warm-glow associated with the work still remains as a key motivation.

Guilt appeals

Inequality aversion suggests that interventions may be effective if they focus on the guilt that may arise from not donating blood. In support of this contention, guilt has been identified as a donor motivation in the ‘Donor Identity Survey’ [37] and feelings of guilt, associated with the need for blood in emergencies, have been shown to increase donations [38]. Furthermore, experimental evidence shows that anticipatory guilt (guilt that arises in advance of a future transgression, which can thus be avoided) rather than reactive guilt (guilt experienced when a transgression takes place) promotes intentions to donate blood [39]. Guilt appeals are also likely to be more effective if they engender a sense of responsibility, self-efficacy (i.e. what is asked of the donor is achievable by the donor) and empathy with the target [40, 41]. However, guilt appeals that are seen by recipients as having a high manipulative intent, may be counter-productive [42–44]. Thus, the following type of appeal, ‘Being fit and healthy to give blood, means you have the ability to help those less healthy than you. Please don’t miss out on the chance to help those less fortunate than you’, could be effective. It highlights responsibility (the donor can help a less fortunate person), it highlights efficacy (the donor is able to help), and it is not a direct manipulation of guilt. This type of appeal should also generate anticipatory guilt by highlighting the health advantage the donor has relative to the recipient. However, whether or not the ends justify the means, we still have to consider whether increasing a sense of guilt to motivate donors reflects the type of society we want. It is crucial in any trial of this type of intervention to assess levels of guilt, effectiveness and acceptability. If levels of guilt are low and the intervention effective and acceptable, such an intervention can be justified.

Norms-focused interventions and donation rates

Conditional co-operators will respond differently to messages that focus on the number of donors rather than the donation rate. For donors who are conditional co-operators, focusing on the number of donors rather than donors’ average donation rate will signal that they do not need to donate. This is because telling a conditional co-operator that very few people donate will cause them to act in a conditionally proportionate manner and be less inclined to donate. However, telling conditional co-operative donors that, on average, donors at their centre donate four times a year should act to motivate them; that is, they may increase their donation rate to match this. This means, however, that we need to know what proportion of donors samples are conditional co-operators and, indeed, if blood donors are stronger conditional co-operators than non-donors.

Voluntary reciprocal altruism

Voluntary reciprocal altruism (VRA) brings together norms of fairness and reciprocity with self-interest and is activated with a two question strategy [45]. The first aligns self-interest and reciprocity with fairness: ‘I would want a blood transfusion to save my life: YES or NO’. Answering YES, highlights (1) a personal potential future need and (2) that my receipt of blood is contingent on all of us contributing (general reciprocity, fairness and a sense of solidarity). The second question asks about willingness to donate: ‘I would be willing to donate blood: YES or NO’. If I am willing to take blood, it is only fair to give it back and so to answer YES. Answering NO is dissonant with answering YES to question 1. This may
indicate that others may answer NO. If others do not intend to donate than shortages could result. This concern about shortages may highlight a lack of trust that others will donate. Thus, reluctant altruists, who are motivated by a lack of trust that others will donate, should respond more strongly to a VRA manipulation.

Warm-glow appeals

The most basic intervention suggested by the MAO approach is to highlight warm-glow. Ferguson et al. [13] did just that contrasting a warm-glow appeal with a pure altruism appeal. The results showed that the warm-glow appeal increased willingness to donate in committed donors.

Empathizing with a single case: compassion fade/identifiable victim effect

Compassion fade (levels of compassion and donation rates decrease as people consider more than one person in need [46]) and ‘identifiable victim effect’ (probability of helping is greater for an identifiable victim vs. statistical victim) [47–51] suggest that interventions based on specific cases may be effective in recruiting blood donors. Indeed, there is some evidence that the specific manipulation of empathy may be an effective intervention to recruit donors [52]. However, this effect is sensitive to (1) the time frame (immediate need vs. future need) and (2) whether the target is in your in-group or out-group [53]. The favouring of a single case is more likely if the need is immediate and they are a member of the donor’s in-group [53]. Thus, choosing a specific target may be difficult as it would be maximally effective only for those for whom the target represented their in-group. Ein-Gar and Levontin [53], however, show that when the donation appeal is targeted as future need (or the out-group), then focusing on helping the charitable organization results in greater donations than appeals focusing on individual cases. Thus, transfusion services could therefore target appeals at the organizational level, rather than a targeted individual (avoiding in-group/out-group problems), if the appeal focused on future needs. This could be in the form of ‘Blood is needed to meet the future transfusion needs of the health service’ rather than ‘Blood is needed to meet the immediate transfusion needs of the health service’. There is some evidence to support this contention [54].

A monument to blood donors

So what type of interventions do we want as a society? We argued that we need to consider the role of both the donors and the recipients of blood. As a society, we could establish an intervention that both (1) celebrates donation and (2) provides recipients of blood a means to say ‘Thank You’. Reciprocating a gift is central to most models of altruism; however, the recipient of blood is often unable to reciprocate by donating blood themselves. Whole-body donation has pioneered the idea of having a focal monument to those who have donated their bodies to science [55]. Similarly, a monument dedicated to blood donors and blood donation could establish a mechanism for recipients to express their gratitude (e.g. financial donations towards the monument, leaving narratives about how the transfusion helped them). This should also act to inspire future donors, by enhancing feelings of anticipated warm-glow.

Implications for wider theoretical models

The MOA has implications for existing theoretical models applied to blood donation. Two questions are pertinent: (1) ‘How do the constructs in these models theoretically relate to MOA?’ and (2) ‘Does the MOA add extra predictive value?’

The theory of planned behaviour (TPB) is the most frequently applied to blood donation [56]. The TPB suggests that a behaviour is predicted proximally by intentions, with intentions predicted by (1) attitudes, (2) subjective norms (i.e. people who are important to the donor approve of blood donation) and (3) perceived behavioural control (PBC: i.e. feeling able to donate despite possible barriers). PBC also has a direct effect on behaviour. Attitudes can be further split in to affective (i.e. anticipated positive or negative emotional responses) and cognitive (i.e. the pros and cons) [57]. TPB is also extended in this domain to include (1) descriptive norms (the perception of how many others perform the behaviour) and (2) personal moral norms (the person’s individual moral obligations) [56].

In the prosocial domain, four of these constructs – affective attitudes, subjective norms, descriptive norms and personal moral norms – overlap with four MOA (Table 2). Affective attitudes and subjective norms are closely linked to warm-glow and reputation building; that is, affective attitudes reflect anticipated feelings associated with the act of giving and thus reflect warm-glow. Donating because others think it is a valued activity (subjective norm) may ultimately be concerned with reputation regulation – what others think of you matters. Descriptive norms reflect beliefs about how many others are believed to perform the behaviour. It is possible that such beliefs may drive conditional co-operation, but requires testing empirically. Beliefs concerning personal moral norms have been operationalized to include avoiding anticipated guilt and as such may be driven, in some small part, by inequality aversion.

Indices of ‘altruism’ have also been added to TPB. For example, Lemmens et al. [58] showed that an index of
general altruism did not add incrementally to the prediction of donor behaviour. This is mostly likely because the altruism index was domain nonspecific, whereas the TPB items were blood donation specific.

The function (motivational) model of volunteer behaviour [59] is gaining some currency as a model in the blood donation literature [60]. Six motivations for volunteering have been identified [61, 62]. The six motives are described in Table 2. Again all six resonate with the MOA (Table 1). While these motivations are derived from very different traditions in social psychology, the clear correspondence with MOA adds extra validity to these motivations, showing clear links to wider economic and psychological theory. It also suggests specific hypotheses. For example, the ‘Enhancement’ motivation should be the strongest predictor within the context of blood donation.

A model of donor motivation derived from the MOA approach

Based on the MOA work conducted so far, an overall model of how these motivates interplay in terms of donor recruitment and retention is sketched here. Reluctant altruists are looking for a worthy cause where free-riding is high. Warm-glow givers are looking for a context that affords maximum warm-glow. Reluctant altruism and warm-glow are correlated, but there will also be those who are just reluctant altruists and those who are just motivated by warm-glow [25]. There will also be those who only discover after donation that they gain a lot of warm-glow from donating. Both those initially attracted by warm-glow and those who discover warm-glow as an outcome of donation will be reinforced by warm-glow and self-select as donors. The reluctant altruist will remain as a donor, as free-riding remains high.

Conclusions

The application of the MOA approach indicates that donors are not pure altruists, but motivated by warm-glow and reluctant altruism. Other avenues for future research involve examining whether blood donor populations consist of high proportions of condition co-operators and whether blood donors have a strong inequality aversion. The MOA findings indicate that incentives (charitable or financial), warm-glow appeals and VRA should be used and may be very effective.

Acknowledgements

EF wrote the initial draft in discussion with CL. CL commented on and revised the initial draft. EF and CL completed the final version.

Conflict of interests

The authors declare no conflict of interests.

Source of funding

None.

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