

Characteristics of men willing to act as sperm donors in the context of identity-release legislation

Damien W. Riggs^{1,*} and Laura Russell²

¹Department of Social Work and Social Policy, Flinders University, GPO Box 2100, Adelaide, South Australia 5001, Australia ²School of Psychology, University of Adelaide, Adelaide, South Australia, Australia

*Correspondence address. E-mail: damien.riggs@flinders.edu.au

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BACKGROUND: Although ongoing legislative changes are important to protect the rights of all involved in assisted reproductive technologies, it cannot be guaranteed that legislation will ensure the successful operation of reproductive health clinics, as is indicated by ongoing reports of a dearth of donor sperm in clinics in some countries.

METHODS: Data were 1428 profiles taken from a website that aims to facilitate relationships between those seeking donor sperm and men willing to donate their sperm. Data were coded as three independent variables: age, relationship status and country, and four dependent variables: motivation to donate, willingness to be identified, willingness to be involved with children conceived of donations and beliefs about who should determine the level of involvement.

RESULTS: Non-parametric testing indicated that men aged under 26 or over 46, and who were either single or in a same-sex relationship, were most likely to be willing to be identified to children ($P < 0.05$), and to desire involvement with children ($P < 0.01$). A significant proportion of men aged between 26 and 46 years of age ($P < 0.001$) were motivated by a desire to procreate and were unwilling to be identified, as were a significant number of men in opposite-sex relationships ($P < 0.001$).

CONCLUSIONS: Although limited by its reliance upon a sample constituted by men living in western countries who completed a self-report profile and who had not received counselling about their potential role as donors, this study draws attention to the potential impact of age and sexual orientation upon intentions to donate.

Key words: sperm donation / motivations / identity-release legislation / assisted reproduction

Introduction

For more than 40 years, advances in assisted reproductive technologies (ARTs) have driven legislative change, offering as they do radically new ways of conceptualizing kinship, reproduction and rights (Thompson, 2005). It cannot be assumed, however, that legislative change in all instances will automatically promote the operations of reproductive health services. A good example of this appears in the use of donor sperm. Although legislation has been introduced in many countries to mandate for the release of identifying information about donors to children once they come of age, and while this is a positive step for donor-conceived children, in many instances this has resulted in an initial drop in the number of men willing to donate to clinics. Importantly, however, research indicates that the numbers of men willing to act as donors in the context of identity-release legislation does gradually recover, albeit with a somewhat different demographic of men (Blyth and Frith, 2008). The

primary difference is that prior to the introduction of identity-release legislation, a significant majority of donors have historically been younger men without families of their own, while post the introduction of legislation to mandate identity release this has shifted to a larger proportion of donors being older married men with children of their own (Daniels and Lalos, 1995). While this shift accompanying legislative change is welcomed by some on the basis that the latter group of men might be considered more 'responsible' donors (Yee, 2009), it brings with it concerns over the potentially deleterious effects associated with declining sperm quality in older men (Ng *et al.*, 1994).

Changes in the availability of donor sperm (and the particular groups of men now donating sperm in the context of identity-release legislation) are compounded by other legislation introduced to support the rights of a wider range of people to access donor sperm in many countries (such as lesbian couples and single women). In other words, by allowing more people eligibility to access donor sperm, there is now a much greater demand upon the

115 already limited resources available. As a whole, then, the issues identified here would suggest that while changes to legislation across many countries have primarily aimed to better regulate the use of ARTs involving donor sperm, they have also introduced new constraints or issues for reproductive health clinics.

120 In response to these problems arising from legislative change, other forms of legislation have been introduced or are being considered in some countries. These include allowing donors to be reimbursed for their time, when previously this was not the case; Yee (2009) provides a discussion of this situation in Canada. However, these responses are not only frequently contested (Daniels and Lewis, 125 1996; with regard to payments to donors), but legislative change is often slow, and as the discussion above would suggest, cannot solely be relied upon to effect the short-term change required to meet the demand for donor sperm. As a result, the reality of the current shortage of donor sperm in many western nations is one that must be acted upon in ways other than legislative change. One readily available response to this shortage is to focus upon the demographic characteristics that research indicates are associated with a willingness to donate sperm in the context of identity-release legislation, and to target these groups of men.

135 Unfortunately, previous research on willingness to donate in the context of identity-release legislation has produced mixed findings. Some of the research indicates that older, married and heterosexual men with children of their own are more likely to be motivated to donate for altruistic reasons (Daniels et al., 1996), and that this group of men are more likely to be willing to be identified to donor-conceived children in comparison with younger, single and heterosexual men (Lui et al., 1995; Janssens et al., 2006; Thorn et al., 2008). Conversely, other research has suggested that single heterosexual men are more likely than married men to be willing to meet children conceived of their donations (Frith et al., 2007). What appears to mediate these two findings is the degree of contact considered reasonable by these differing groups: married heterosexual men with children of their own report being willing to engage in a one-off meeting with children conceived of their donations, while single heterosexual men report a greater willingness to have an ongoing relationship with such children (Godman et al., 2006). A further characteristic that has been investigated more recently are differences between heterosexual and gay men with regard to their willingness to be identified and their motivations. Research suggests that gay men, in general, are more willing to be identified, and that while donating for altruistic reasons, may also donate as a way of staking an identity claim to paternity if it is perceived that there are no other options available in this regard (Riggs, 2008; Ripper, 2008).

160 As the above summary would suggest, then, there are some discrepancies over what constitutes an 'ideal' donor in the context of ongoing legislative change, particularly with regard to the removal of anonymity for donors. The present research was developed in response to this, and sought to explore, via an examination of a large sample of men whose profiles appeared on a website designed to facilitate contact between recipients and potential sperm donors, the characteristics that would appear to indicate which men are most likely to respond to calls for sperm donation in the context of identity-release legislation.

Materials and Methods

Participants

175 Participants were individuals whose profile appeared on the website sperm-donors-worldwide.com during the months of March and April, 2009. Inclusion was determined by two factors: the completeness of their profile (individuals were excluded if three or more responses of interest for the current study were left blank), and their country of residence (only countries with 100 or more profiles were included in order to ensure adequate numbers for statistical analysis).

180 No other information was available in the profiles that would provide further information about the experiences or histories of the men listed on the website. Specifically, no information was recorded in the profiles about whether men had donated previously (either in a private arrangement or to a clinic), and no information was recorded about whether the men had accessed counselling or other forms of support prior to expressing willingness to act as a sperm donor (and the website itself does not offer this service).

185 Our data set consisted of donor profiles, accessed in full upon purchasing 1 month's membership to the website sperm-donors-worldwide.com. Owing to the nature of the data, where participants publish their profiles in the public domain, and where the data utilized were non-identifiable, it was deemed that ethics approval was not required. Instead, permission to use the site's profiles for the purpose of this study was gained via email from the site's creator (Emma Hartnell-Baker of Queensland, Australia). Neither of the authors of the present paper had previously (or since) made use of the website with the purpose of accessing donor sperm, nor did the authors make contact with any potential recipients or donors listed on the website.

190 Sperm Donors Worldwide, also known as FSDW/DIY baby (Free Sperm Donors Worldwide/Do It Yourself Baby), is a website designed to 'help single women, lesbian and infertile couples become pregnant using artificial insemination'. Men register as donors by placing their profile on the site, which can be accessed by prospective recipient members of the site from across the globe. Membership to the site requires a monthly fee, however, the website is very clear in stating that while it is nominally a commercial business (i.e. people looking for donor sperm pay to access the profiles), the commercial aspects are limited to paying for the upkeep of the website and the expenses of administering it. In other words, the owner of the website makes no money per se from individual 'matches' between donors and recipients, and the website also clearly states that its purpose is not to facilitate payment for sperm donation (which in some of the countries listed on the site is currently illegal). Further, the site does not provide an insemination service, but does offer information about self-insemination and links to self-insemination kits, which can be purchased online through third parties.

Procedure

200 Two of the independent variables chosen for analysis within this study—'age group' and 'relationship status'—were selected due to their significant predictive ability indicated by previous research (Lui et al., 1995; Daniels et al., 1996; Janssens et al., 2006; Thorn et al., 2008). While indicated as a potential predictor variable in previous research (Riggs, 2008), sexuality was not included as the category was not included in profiles (although coding for same or opposite-sex relationships could be validly coded, and thus was used as a subset of the relationship status measure). Country of residence was also included on the assumption that there may be differences between countries on the basis of legislative differences.

205 The dependent variables of 'motivation, identity-release status, involvement with offspring, and who determines involvement' were also chosen

on the basis of previous research findings (Lui *et al.*, 1995; Daniels *et al.*, 1996; Janssens *et al.*, 2006; Riggs, 2008; Thorn *et al.*, 2008). Assessment of these variables was made through one of two ways: either specific responses within profiles to questions that called for forced choice answers (this was the case for 'identity-release status and involvement with offspring'), or the codification of open ended responses provided in profiles (this was the case for 'Motivation and Who Determines Involvement').

With regard to the forced choice response relating to identity-release status, potential donors had the option of selecting one of three categories: 'known (child can request information at age 18)', 'anonymous' and 'undecided'. No further specific information was provided within the profiles as to why men selected one of these categories. Donor desire for involvement or contact with offspring was also coded by the three forced response categories on the website consisting of: 'Desired, Limited Involvement and None'.

In developing the coding system for the variables of 'Motivation and Who Determines Involvement', 50 randomly selected profiles from the sample were initially analysed to determine preliminary categories based on common themes within these two variables. Specifically, common and similar profile responses were grouped under distinct and meaningful categories, comprising similar terms, ideas and themes. This process was continued until saturation of responses was achieved within the 50 profiles selected. The categories generated for each of these two dependent variables were then compared against each of the remaining profiles to determine which best represented the open-ended responses in each profile.

Categories generated for the variable of donor motivations consisted of: 'Helping Others, Empathy, Valuable Genetics, and to Procreate'. Helping others consisted of terms such as: 'assist', 'facilitate', 'aid', 'give' and 'accommodate', where donors primarily reported their motivation as seeking to help others. 'Empathy' included terms or ideas such as: 'empathy', 'understanding', 'experience', 'compassion' and 'awareness', whereby donors typically reported being motivated by an understanding of the effects of fertility problems upon friends, colleagues, family members or partners. 'Valuable genetics' included terms such as: 'good stock', 'precious', 'beneficial', 'quality' and 'valuable', whereby donors reported being motivated by the belief that they had much to offer potential recipients and offspring as a result of their genes. 'To procreate' involved terms such as 'reproduce', 'have babies', 'father a child', 'multiply' and 'show fertility', and was described as a motive for donors who sought a chance to procreate, whether or not they sought to play a role in the child's future.

Donor understandings of who should determine the level of contact with any child conceived of their donations was determined by their response to an open-ended question presented after the 'involvement' forced response question. The category of 'negotiable' included terms such as: 'open to discussion', 'agreement', 'mutual' and 'needs talking about', wherein donors were willing to discuss their level of involvement with the recipient(s) of their donation and agree on a comfortable arrangement. The category of 'parent's decision' consisted of terms such as: 'mother'/'parent's' 'choice'/'wants'/'desires'/'request', and indicated that donors were happy to comply with the wishes of the recipient(s). The third category, 'Child's Decision' comprised comments such as: 'child's choice upon maturity', and 'child's wishes', whereby donors were happy to be contacted if the child wished to meet them.

Statistical analysis

Analysis of the coded data was undertaken using the Statistical Package for the Social Sciences (SPSS version 17.0), with multinomial logistic regression analyses employed to determine any associations between the independent demographic variables ('country of residence, age-group and

relationship status') and the four dependent variables and their categories: 'motivation', 'identity-release status', 'involvement with offspring' and who determines involvement. Multinomial logistic regression analysis was employed due to its suitability to larger data sets as well as its ability to process dependent variables with more than two categories (Pampel, 2000). Multinomial regression analysis is further suited to categorical data as it examines specific contrasts between the categories of each dependent variable as well as their relationship with the independent variables. This, in turn, reduces the redundancy of repeated tests, and thus increases the probability that associations between dependent and independent variables within the data occur due to significant differences within the actual data set when compared with a hypothetical population generated on the basis of a null hypothesis (Riggs, 2008).

Individual χ^2 tests were also undertaken to explore more specifically the significance of the association between the four dependent variables and independent demographic variables. The assumption of χ^2 , which states that no >20% of cells can have a cell frequency count of <5, and that no cells may have a cell frequency count of zero, was met for all χ^2 analyses.

Results

Participant characteristics

Of the full number of profiles ($n = 2112$), 1428 were included in the sample. The countries included (i.e. those with >100 participants) were Australia, Canada, the UK and the USA. The majority of donors resided in either the UK [39.5% (564)] or the USA [39.4% (562)], with [13.9% (199)] of the participants residing in Australia and 7.2% (103) residing in Canada. Of the participants included, 18.4% were 18–25 years, 33.8% were aged 26–35 years, 34.1% were aged 36–45 years, 11.2% were aged 46–55 years and 2.6% were aged 55+ years of age.

Participants' relationship status was also recorded, with most participants reporting being single (63.7%) with the remainder falling in the website category of 'in a relationship' (36.3%). Of those in a relationship, 16% ($n = 83$) were in a same-sex relationship, while 84% ($n = 435$) were heterosexually married.

Motivation variable

When all of the variables were initially entered into a regression, the output indicated that donor motivation was only predicted by the age group of the donor, and to a lesser degree, their country of residence. The final regression model for motivation revealed that the association between the combined independent variables included in the model (i.e. the two that were significantly related to it—the remaining variable was excluded from the model) and the dependent variable was a product of the data set: $\chi^2 (21, n = 1355) = 60.29, P < 0.001$, where the combined effect of the two variables accounted for just over half the variance among donors; Pseudo $R^2 = 0.55$. Table 1 shows the distribution of independent demographic variables: age group and country of residence in relation to donor motivation.

In relation to country of residence, a significant association between country and motivation was found: $\chi^2 (9, n = 1358) = 19.62, P < 0.05$, whereby men residing in all four countries were more likely to donate in order to help others compared with other motivations. Secondly, men of all countries were more likely to be motivated by a desire to procreate than due to empathy or a perception of having

Table I Frequencies for motivation variable.

	Motivation				Total
	Help others	Empathy	Valuable genetics	Procreate	
Age group					
18–25	211 (87%)	12 (5%)	2 (1%)	16 (7%)	241
26–35	335 (74%)	28 (6%)	18 (4%)	74 (16%)	450
36–45	330 (73%)	22 (4%)	18 (3%)	98 (20%)	468
46–55	98 (64%)	12 (8%)	4 (2%)	40 (26%)	154
55+	20 (54%)	3 (8%)	5 (14%)	9 (24%)	37
Country					
Australia	146 (78%)	12 (6%)	12 (6%)	21 (10%)	191
UK	390 (72%)	39 (7%)	17 (3%)	95 (18%)	541
USA	418 (78%)	19 (4%)	14 (2%)	83 (16%)	534
Canada	63 (68%)	7 (8%)	4 (4%)	18 (20%)	92

valuable genetics, with the motivation of procreation most strongly pronounced (after helping others) among men in the UK and the USA.

This pattern in motivations extended to age group, whereby men of all age groups were significantly more likely to donate to help others, and to a lesser degree to procreate, than to be motivated by empathy or a perception of valuable genetics; $\chi^2 (12, n = 1355) = 44.79, P < 0.001$. With regard to procreation as a motivation, this was most significantly associated with men aged between 26 and 45 years of age.

Identity-release status variable

When all of the variables were entered into the regression, the output indicated that donor preference for identity-release status was only predicted by age-group and relationship status. The other independent variable (country) did not contribute significantly to the variance explained and therefore was excluded from the final model. The final regression model for identity-release status revealed that the association between the combined independent variables included in the model (i.e. those that were significantly related to it) and the dependent variable was a product of the data set: $\chi^2 (10, n = 1361) = 29.93, P < 0.05$, where the combined effect of the variables accounted for almost half of the variance between donors; Pseudo $R^2 = 0.45$. Table II shows the distribution of relationship status and age group in relation to identity-release status.

Chi-square tests conducted on both of the independent variables in the final model demonstrated the significance of the apparent differences in Table II, whereby men overall, regardless of age, were willing for their identity to be known to children conceived of their donations, $\chi^2 (8, n = 1415) = 15.63, P < 0.05$. For those who nominated to be anonymous, this was most significantly associated with men aged between 26 and 46 years of age, with fewer men outside of this age range seeking to be anonymous. This same pattern was repeated among men who were undecided, who constituted overall the second largest group of respondents across all ages.

The overall effect observed in Table II also extended to the relationship status, wherein all men, regardless of the relationship status, were significantly more likely to be open to an identity-release status compared with being anonymous or undecided; $\chi^2 (2, n = 1364) =$

Table II Frequencies for identity-release status variable.

	Identity-release status			Total
	Known	Anonymous	Undecided	
Relationship status				
Single	517 (59%)	100 (11%)	253 (30%)	870
In a relationship	262 (53%)	130 (26%)	102 (21%)	494
Age group				
18–25	174 (67%)	29 (11%)	58 (22%)	261
26–35	250 (53%)	91 (19%)	135 (28%)	476
36–45	257 (53%)	84 (17%)	141 (30%)	482
46–55	107 (67%)	20 (13%)	32 (20%)	159
55+	24 (65%)	3 (8%)	10 (27%)	37

$12.307, P < 0.01$. The results also showed that single men were significantly more likely to display a preference for identity release or to be undecided, while those in a relationship were significantly more likely to state a preference to be anonymous donors than would be expected in an even distribution. The composition of relationship was further explored, and Table III shows the distribution of relationship composition (i.e. same sex or opposite sex) with regard to identity-release preferences. Chi-square analysis suggested that those in same-sex relationships were significantly more likely to prefer to be known donors as opposed to anonymous or undecided, while those in opposite-sex relationships were significantly more likely to prefer to be anonymous or undecided rather than being known donors; $\chi^2 (2, n = 368) = 23.91, P < 0.001$.

Involvement with offspring variable

When all of the variables were entered into the regression, the output indicated that donor preferences for involvement with offspring were only predicted by the donors' relationship status and country of

Table III Frequencies of relationship composition for identity-release status variable.

	Identity-release status			Total
	Known	Anonymous	Undecided	
Relationship composition				
Same sex	50 (83%)	1 (2%)	9 (15%)	60
Opposite sex	40 (14%)	177 (60%)	76 (26%)	293

residence; Age group did not contribute significantly to the variance explained and thus was excluded from the final model. The final regression model for involvement revealed that the association between the combined independent variables remaining in the model and the dependent variable was a product of the data set: $\chi^2 (8, n = 768) = 32.740, P < 0.01$, where the combined effect of the variables accounted for just over half of the variance between donors; Pseudo $R^2 = 0.54$. Table IV shows the distribution of these independent demographic variables in relation to desired involvement.

Chi-square tests conducted on both of the independent variables included in the final model demonstrate the significance of the apparent differences in Table IV, whereby men overall, regardless of relationship status, desired no involvement: $\chi^2 (2, n = 768) = 8.35, P < 0.05$. The overall effect observed in Table IV also extended to country of residence, wherein all men, regardless of where they lived, were significantly more likely to seek no involvement with children conceived of their donations compared with active or limited involvement; $\chi^2 (6, n = 797) = 12.43, P < 0.05$. For those who sought limited contact or actually desired contact, this was most significantly associated with being single. With regard to relationship composition (i.e. same sex or opposite sex), Table V shows the distribution of the composition of relationships in relation to desired involvement. A χ^2 test revealed that men in same-sex relationships were significantly more likely to desire active involvement with children conceived of their donations compared with other involvement options, while men in opposite-sex relationships were significantly more likely to desire no involvement compared with other involvement options than would be expected in an even distribution; $\chi^2 (2, n = 217) = 87.42, P < 0.001$.

Who determines involvement variable

A multinomial logistic regression analysis revealed that who determines involvement was not significantly associated with any of the independent variables. The data showed that the majority of donors believed involvement should be determined by recipient parents (45.2%) and via negotiation (49%), with only 5.8% feeling the decision should be left to the child, although this finding was not significant; $\chi^2 (16, n = 563) = 22.46, P > 0.05$.

Discussion

The results from the present study confirm previous findings to some degree, while also offering clarification about particular aspects of the association between demographic characteristics and motivations, desire for involvement and willingness for identifying information to be released among sperm donors.

Table IV Frequencies for involvement variable.

	Involvement			Total
	Desired	Limited	None	
Relationship status				
Single	97 (14%)	153 (21%)	474 (65%)	724
In a relationship	37 (10%)	97 (33%)	160 (57%)	294
Country				
Australia	14 (14%)	38 (36%)	52 (50%)	104
UK	60 (18%)	112 (35%)	152 (47%)	324
USA	59 (16%)	100 (34%)	156 (50%)	315
Canada	4 (7%)	12 (22%)	38 (71%)	54

Table V Frequencies of relationship composition for involvement variable.

	Involvement			Total
	Desired	Limited	None	
Relationship composition				
Same sex	36 (60%)	22 (37%)	2 (3%)	60
Opposite sex	67 (22%)	101 (35%)	125 (43%)	293

Our findings indicate that an altruistic motivation was the primary motivation associated with men across all four countries and all age groups. This confirms the emphasis upon altruism among donors as noted by Yee (2009), although the findings of the present study suggest that a significant proportion of men aged between 26 and 45 were also motivated by a desire to procreate.

With regard to openness to the release of identifying information to donor-conceived children, a willingness to be known was associated with men across all ages and among both single men and those in a relationship, confirming Blyth and Frith's (2008) suggestion that legislating for identity release will not necessarily impact upon numbers of men willing to donate sperm *per se*. Interestingly, however, and with regard to the findings of previous research that identity-release legislation may impact upon the demographic of men willing to donate (i.e. a shift from younger single men to older married men; see Daniels and Lalos, 1995), it is important to note that the present research found that a higher proportion of men in relationships and men aged between 26 and 45 preferred to be unknown

compared with single men or men outside these age ranges (the majority of whom were aged under 26). The findings did, however, confirm those of Riggs (2008), that men in same-sex relationships were more likely to consent to identity release than were men in heterosexual relationships.

Finally, and with regard to level of involvement with donor-conceived children, overall more men were likely to nominate no involvement than any other level of involvement, thus supporting the findings of Lui *et al.* (1995), who found that the donors in their sample typically desired little active or ongoing involvement with children conceived of their donations. It must be noted, however, that the men who placed a profile on the website examined in this study were not provided with any counselling or education about the possible need for contact on the part of children conceived of their donations, which may well have influenced this finding. For those in the present sample who did nominate involvement, single men and men in same-sex relationships were most likely to desire involvement, with the latter finding confirming those of Riggs (2008), who found that gay men were more likely than heterosexual men to desire involvement with children conceived of their donations.

The findings presented here thus shed considerable light on some of the characteristics that would indicate the most likely candidates for recruitment for donation in the context of identity-release legislation (i.e. single men and men in same-sex relationships aged under 26 or over 45). It must be noted, however, that in some countries clinics preclude potential donors who identify as homosexual (Kirkman, 2004; Riggs, 2008). This would suggest the need for ongoing revisions to legislation or clinical practice so as to ensure that such donors are made eligible. However, it must also be noted that as men in same-sex relationships (and to a much lesser degree, single men) are increasingly able to start their own families through surrogacy, foster care, adoption or shared parenting arrangements, these groups cannot necessarily be relied upon as a primary source of recruitment for sperm donors. Nonetheless, legislative change to ensure equitable access for all is both desirable and necessary.

Given that it cannot be relied upon that the groups identified above will continue to display the same willingness to act as donors, it is important that clinics also consider ways of addressing the barriers for other groups of men to be recruited as donors. In this regard, a number of authors (Lui *et al.*, 1995; Frith *et al.*, 2007; Riggs, 2009) have called for better information about the emotional, personal and social implications of sperm donation for potential donors, and that accessible counselling and support services should be provided to men (both those who have donated and those who are considering donating). This may be particularly so for those men in the 26–45 years age bracket, whose indecision about identity disclosure may at least in part be due to the fact that this group of men may be exploring possibilities for starting their own families. Of course, such services should also be offered to men outside this age bracket, and particularly younger men who may not have yet considered having children, but who may do so at a later date and who may be negatively affected by previous choices about sperm donation.

Despite the utility of the findings presented here and the recommendations from them for increasing the numbers of men willing to donate in the context of identity-release legislation, several limitations must be noted. Firstly, the profiles examined in this research were of men listed on a website designed to facilitate free donation

of sperm in private arrangements, but which provides no information *per se* about the possible needs of children conceived from donor sperm. As such, it is difficult to determine the extent to which the same patterns would apply to the highly regulated ART clinic sector (which employs rigorous donor screening methods and includes education and counselling requirements so that potential donors are fully aware of the experiences of donor-conceived children and their likely desire for contact when they come of age). Moreover, it must be noted that information provided by the donors was self-reported and thus must be interpreted with caution, as self-report may be likely to accentuate the level of exaggeration and self-marketing undertaken by donors as they strive to attract potential recipients and fulfil their potential individual motivations (Almeling, 2007). Secondly, since exclusion criteria required that countries were represented by 100 donors or more, only four countries—Australia, Canada, the UK and the USA—were analysed. Owing to these all being westernized cultures, generalizability of the findings to other cultures must be undertaken with caution, particularly since country of residence was found to play a role in predicting donor motivations and desired levels of involvement.

Nonetheless, and in conclusion, while some of the trends identified in this paper may be relatively time-limited and context-specific (i.e. they may be limited to westernized countries and may change as more diverse groups of men are involved in having children than has been the case in the past), clinics, policy makers and researchers would do well to take note of the trends identified, treat them seriously in the development of future donor sperm recruitment agendas and inform the support services provided to sperm donors themselves.

Authors' roles

D.W.R.: devised of the manuscript project, wrote the introduction, participated in the discussion, conducted analyses and undertook revisions; L.R.: collected and coded data, wrote the method, conducted and wrote the analyses and undertook revisions of the manuscript.

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References

- Almeling R. Selling genes, selling gender: egg agencies, sperm banks, and the medical market in genetic material. *Am Soc Rev* 2007;**72**:319–340.
 Blyth E, Frith L. The UK's gamete donor 'crisis'—a critical analysis. *Crit Soc Pol* 2008;**28**:74–95.

685 Cook R, Golombok S. A survey of semen donation: phase II—the view of
Q3 the donors. *Hum Reprod* 1995;**10**:951–959.

Daniels KR, Curson R, Lewis GM. Semen donor recruitment: a study of
 donors in two clinics. *Hum Reprod* 1996;**11**:746–751.

Daniels KR, Lalos O. The Swedish Insemination Act and the availability of
 donors. *Hum Reprod* 1995;**10**:1871–1874.

690 Daniels KR, Lewis GM. Donor insemination: the gifting and selling of
 semen. *Soc Sci Med* 1996;**42**:1521–1536.

Frith L, Blyth E, Farrand A. UK gamete donors' reflections on the removal
 of anonymity: implications for recruitment. *Hum Reprod* 2007;
22:1675–1680.

695 Godman KM, Sanders K, Rosenberg M, Burton P. Potential sperm donors',
 recipients' and their partners' opinions towards the release of identifying
 information in Western Australia. *Hum Reprod* 2006;**21**:
 3022–3026.

Janssens PMW, Simons AHM, van Kooij RJ, Blokzijl E, Dunselman GAJ.
 A new Dutch law regulating provision of identifying information of
 donors to offspring: background, content and impact. *Hum Reprod*
 2006;**21**:852–856.

700 Kirkman M. Saviours and satyrs: ambivalence in narrative meanings of
 sperm provision. *Cult Health Sex* 2004;**6**:319–335.

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720

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740

Lui SC, Weaver SM, Robinson J, Debono M, Nieland M, Killick SR,
 Hay DM. A survey of semen donor attitudes. *Hum Reprod* 1995;
10:234–238.

Ng KK, Donat R, Chan L, Lala A, Pierro ID, Handelsman DJ. Sperm 745
 outputs of older men. *Hum Reprod* 1994;**19**:1811–1815.

Pampel FC. *Logistic Regression: A Primer*. London: Sage, 2000.

Riggs DW. Using multinomial logistic regression analysis to develop a
 model of Australian gay and heterosexual sperm donors' motivations
 and beliefs. *Int J Emerg Tech* 2008;**6**:106–123.

Riggs DW. The health implications of emotion work undertaken by gay 750
 sperm donors. *Fem Psych* 2009;**19**:517–533.

Ripper M. Australian sperm donors: public image and private motives of gay,
 bi-sexual and heterosexual donors. *Health Soc Rev* 2008;**17**:319–331.

Scheib JE, Cushing RA. Open-identity donor insemination in the United
 States: is it on the rise? *Fertil Steril* 2007;**88**:231–232. **Q3**

Thompson C. *Making Parents. The Ontological Choreography of Reproductive
 Technology*. Cambridge: MIT Press, 2005.

Thorn P, Katzorke T, Daniels K. Semen donors in Germany: a study
 exploring motivations and attitudes. *Hum Reprod* 2008;**23**:2415–2420.

Yee S. 'Gift without a price tag': altruism in anonymous semen donation. 760
Hum Reprod 2009;**24**:3–13.

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775

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