

Adolescents with open-identity sperm donors: reports from 12–17 year olds

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BACKGROUND: Donor insemination programs can include ‘open-identity’ sperm donors, who are willing to release their identities to adult offspring. We report findings from adolescent offspring who have open-identity donors. **METHODS:** Using mail-back questionnaires, youths from 29 households (41.4% headed by lesbian couples, 37.9% by single women, 20.7% by heterosexual couples) reported their experience growing up knowing how they were conceived and their interest in the donor’s identity. **RESULTS:** Most youths (75.9%) reported always knowing, and were somewhat to very comfortable with their conception origins. All but one felt knowing had a neutral to positive impact on their relationship with their birth mother and, separately, co-parent. The youths’ top question about the donor was, ‘What’s he like?’ and >80% felt at least moderately likely to request his identity and pursue contact. Finally, of those who might contact the donor, 82.8% would do so to learn more about him, with many believing it would help them learn more about themselves. No youth reported wanting money and few (6.9%) wanted a father/child relationship. We also discuss differences found among youths from different household types. **CONCLUSIONS:** The majority of the youths felt comfortable with their origins and planned to obtain their donor’s identity, although not necessarily at age 18.

Key words: adolescence/disclosure/donor insemination/open-identity sperm donor/parenting

Introduction

A growing number of donor insemination (DI) programs offer the option (e.g. in the USA) or require (e.g. in Sweden, the UK in 2005; see Blyth, 2003) recipients to use ‘open-identity’ donors—donors who allow their identities to be given to adult offspring. This contrasts with traditional programs in which the donor is anonymous and only non-identifying information is available (e.g. in the USA, where some of the most extensive non-identifying information is available, recipients may have access to a donor’s medical background, physical descriptors, education and interests). Having access to such information is sufficient for many parents who plan not to disclose their use of DI to their child. In this situation, the information tends to be used primarily to choose a donor and is extensive enough to match the donor’s physique, and sometimes personality, to the recipient’s partner or herself. (Whether non-disclosure is appropriate is a separate issue—see Daniels and Taylor, 1993; ESHRE Task Force on Ethics and Law, 2002; Ethics Committee of the American Society for Reproductive Medicine, 2004.) Alternatively, for parents who plan to tell their child about his or her conception origins, having as much information as possible may help answer a child’s questions as they arise. For example, Vanfraussen *et al.*, (2003a) found that about half the children

in a sample of lesbian-headed families wanted more information about their donor. Having additional information could help address questions, such as what the donor is like and why he donated his sperm, and avoid the frustration associated with never being able to know more about one’s donor. Open-identity donors offer more information still, giving the child the option of finding out who the donor is, learning more about him, and possibly meeting him. There is increasing interest in using such donors—in one American DI program that offers both types of donors, almost 80% of recipients chose open-identity over anonymous donors (Scheib *et al.*, 2000). The number of DI programs offering or requiring open-identity donation also appears to be growing (e.g. Brewaeys, 2001).

The experience of DI families

Little research is available about the experiences of DI families who have open-identity donors and none include adolescents who near donor identity-release. Instead, most of what is known comes from families who used anonymous donors. Among those families, the children appeared well-adjusted and the parents exhibited a high quality of parenting, with positive parent–child relationships (e.g. Chan *et al.*, 1998; Brewaeys, 2001; Golombok *et al.*, 2002a; Vanfraussen

et al., 2003b; Murray and Golombok, in press). Whether this positive outcome carries through to adulthood, however, is not known, mostly because the children are not told of their origins, making follow-up studies of them into adulthood almost impossible. Case reports and testimonials from DI adults provide additional insight. Most commonly, these individuals discovered their origins later in life, often in negative circumstances, and many report feeling frustrated by the lack of information about their donor and feeling negatively toward their family and/or DI providers (Baran and Panor, 1993; Rushbrooke and Whipp, 2000; Franz and Allen, 2001; Anonymous, 2002; Shanner and Harris, 2002; Lorbach 2003). These reports concur with studies of DI adults by Turner and Coyle (2000) and of DI youths and adults by Hewitt (2002). The question remains, however, whether these negative feelings will generalize to and be felt as strongly by individuals who are told of their origins earlier and/or who have an open-identity donor.

Learning about DI at a young age

One possibility is that more positive outcomes will be observed among individuals who learn of their origins as children, allowing time to incorporate DI as part of their life and not feel that their origins were something to hide and be ashamed of. Chan *et al.*, (1998) examined the adjustment of families from The Sperm Bank of California (TSBC), who tend to be open about their use of DI. Reports from both the parents and teachers on standardized measures of adjustment indicated that the children were well-adjusted and no differences emerged across households headed by single women, lesbian couples and heterosexual couples. Although the study did not include questions about disclosure, that the children were doing well provides preliminary support that positive outcomes are possible when children know about their origins. Testimonials from DI youths and adults who learned of their origins before adulthood also indicate that individuals feel less resentment toward their family, but the desire and need to know more about the donor remains (Franz and Allen, 2001; Blyth, 2002; Hewitt, 2002; Shanner and Harris, 2002; Lorbach 2003). Findings from studies of families who are very likely to tell their child about his or her DI origins, such as those headed by lesbian couples, also indicate that positive outcomes are possible when the children know. In one such study, Brewaeyns and colleagues (1997) found that all the children but one were told at a young age about their mothers having used a donor. Although no information was provided about their reactions, it is telling that the children (ages 4–8) were well-adjusted and exhibited few behavioural problems.

It is important to note the confounding factor, however, that the children's responses (and/or their parents' perceptions thereof) may simply reflect a particularly positive environment created by the parents, and may or may not also reflect being told about their origins at a relatively young age. Such a confound requires an examination of the characteristics of the parents who disclose versus those who do not. In line with this, Lycett *et al.*, (2004) found more positive parent–child relationships in families that favored disclosure, with reports

of less frequent parent–child arguments and the parents perceiving themselves as more competent than non-disclosing parents. Nonetheless, the non-disclosing families were not dysfunctional, with the quality of their relationships falling within the normal range of family functioning (see also Nachtigall *et al.*, 1997). Thus, although suggestive, further research is necessary to address this confound.

Children's responses to their origins

When children know of their origins, the most common response appears to be curiosity about the donor, as was found among testimonials by DI youth and adults. Two studies with families headed by heterosexual couples give insight into how children respond to learning about their DI origins. In the first study, in New Zealand, almost a third of participants had told their children about their conception origins (Rumball and Adair, 1999). All children were under age eight, with most having first begun to learn about their DI origins at age three or younger. Almost all the children responded neutrally or positively, with the majority being interested in their conception story and some being curious about the donor. In the other study (Lindblad *et al.*, 2000) in Sweden, DI parents reported similar responses from their children, especially curiosity, upon learning about their origins. In addition, no parents reported regretting the decision to share the information with their children. Similar responses have also been documented among a sample of families headed by lesbian couples (Vanfraussen *et al.*, 2001, 2003a).

Impact of household type

Children's experience of having a donor will likely be influenced by the type of household they grow up in. DI recipients and parents are more likely to plan to tell their children about their conception and want more information about the donor when they head households as single women or lesbian couples than when they head them as heterosexual couples (Leiblum *et al.*, 1995; Klock *et al.*, 1996; Jacob *et al.*, 1999; Brewaeyns, 2001; Murray and Golombok, in press). The presence versus absence of a male parent largely accounts for this difference, with heterosexual couples not having to explain the absence of a father and being further deterred from disclosing because of the difficulties associated with male infertility. But when children do know of their origins, it is unclear whether household type will also be associated with differences in children's interest in their donor. Whereas it is possible that children of lesbian couples and of single women will have a greater interest in the donor than children of heterosexual couples, through virtue of having grown up without a male parent, one might also argue that children with only one parent will express the most interest. If the latter were true, then children of lesbian couples would look more like those of heterosexual couples than of single women. Indeed, about half of the near adolescent-age children in the Vanfraussen *et al.*, (2003a) study of lesbian families expressed curiosity about the donor and wished to know more, similar to the children in the two studies of families headed by heterosexual couples (Rumball and Adair, 1999; Lindblad *et al.*, 2000). Little is known, however, about

children from single parent households and how their level of interest will compare to children from the other household types.

Current study

In the current study, we examined the experiences of adolescent offspring who were conceived using DI with open-identity donors (called 'Identity-ReleaseSM', at TSBC). This study thus provided the first examination of youths' experiences with having open-identity donors. We addressed issues concerning when the youth learned about their DI origins, how the knowledge impacted familial relationships, comfort with having a donor and extent of disclosure to others, and interest and feelings toward the donor. Youths also reported their plans for obtaining their donor's identity and interest in contacting him. In addition, for all questions we compared youth responses across household type. We conducted the current study within the context of preparing a protocol and services for the first planned releases worldwide of sperm donor identities to adult offspring. Thus the study served as a way to obtain feedback on our preparations, as well as to gain insight into the experiences of DI youths who have open-identity donors. We conducted separate interviews with the youths' parents and the sperm donors and report the findings elsewhere (Scheib *et al.*, 2003; J.E. Scheib, M.Riordan and S.Rubin, unpublished data).

Materials and methods

Procedure

We contacted the youths' parents through an initial phone call. When the parent expressed interest, a questionnaire was sent for the youth to complete and mail back, along with consent forms signed by the parent and youth. In the accompanying letter to the parent and in the questionnaire's instructions to the youth, we emphasized that the youth complete the questionnaire 'on [their] own, preferably without anyone's help, because [they] have the best understanding of what it is like to have an identity-release donor.' A separate self-addressed envelope was included so that the youth could send back his or her questionnaire separately from the parents (which all did). The questionnaire was developed from issues identified in the research literature (e.g. questions about openness, impact of disclosure on familial relationships) and from findings from two focus groups with a sample of TSBC youths who lived in the San Francisco Bay Area that helped us identify issues of concern around donor identity-releases.

Materials

Each questionnaire contained three sections (a copy of the questionnaire is available from J.E.S.). Section One contained demographic questions. Section Two contained questions about when the youth

learned about having a donor, its perceived impact on the relationship with each parent, comfort with having a donor, feelings and questions about the donor, openness about having a donor, and the reaction of those who knew that the youth had a donor, using similar wording as presented here. Question format included five-point Likert rating scales, adjective endorsements, and open-ended questions. Most questions began with a rating scale, followed by the adjective endorsements, and/or an open-ended question. This allowed the participant to explain his or her answer beyond a simple rating. Section Three contained questions about whether or not the youth planned to get his or her donor's identity, what additional information s/he wanted about the donor, whether s/he had interest in contacting the donor and why, and whether s/he had interest in contacting other youths with the same donor. We also asked how likely s/he was to tell his or her parents about requesting donor identity-release and how the parents (separately) and others would feel about this. In this section, we also asked for information and feedback to help develop the identity-release protocol and services. Questions in this section used the same format as in Section Two. Five youths served as pilot subjects using earlier, shorter versions of the questionnaire (three completed one version, two a revised version). Thus, for some questions, responses are available for only 24 or 26 of the 29 respondents. Responses to open-ended questions were coded by research assistants, with inter-rater agreement >90%. Descriptive statistics were used to summarize responses. To compare offspring responses for birth mothers and co-parents, and across household types (i.e. headed by single women, lesbian couples and heterosexual couples), we used chi-square and likelihood ratio analyses, *t*-tests and ANOVAs with the Welch statistic (for unequal sample sizes, and that does not require equal variances across groups; Maxwell and Delaney, 2000). All comparisons used two-tailed tests of significance. The study had Institutional Review Board approval.

Participants

Youths qualified to participate if they were between the ages of 12 and 17, had an identity-release donor, and their parent had agreed to participate in our study of parents (i.e. Scheib *et al.*, 2003; $n = 55$) and was willing to receive a separate questionnaire for their child to consider completing. Two parents were not willing to receive a questionnaire (the youth did not know about his or her DI conception). Five parents received the questionnaire out of curiosity, but did not plan on giving it to their child, because s/he did not know about his or her DI conception ($n = 2$) or that s/he had an identity-release donor ($n = 2$), or because the youth would not be able to complete it due to illness ($n = 1$). Thus 48 questionnaires were sent to parents who were at least willing to consider giving it to their child to complete. A total of 29 questionnaires were completed and returned by the youths [60.4% (29/48) response rate].

Overlap with other TSBC studies

Many of the families who participated in the current study or in the study of the parents (Scheib *et al.*, 2003) also participated in that of Chan *et al.*, (1998). Chan *et al.* examined the adjustment of the children from different household types, when the children were on average 7 years old. No differences emerged across household type and overall the children were well-adjusted. The study of Chan *et al.* did not examine issues related to disclosure and having an open-identity donor, and included children with anonymous as well as identity-release donors.

Table I. Characteristics of the participants

Household headed by:	Single women ($n = 11$)	Lesbian couples ($n = 12$)	Heterosexual couples ($n = 6$)
Age at interview (mean \pm SD)	14.5 \pm 1.4	14.6 \pm 1.2	15.5 \pm 1.5
% boys	54.5	66.7	66.7
% with siblings	45.5	58.3	66.7

Results

Participants

Youths averaged age 14.7 ± 1.4 [range = 12–17; see Table I for the breakdown by parents' sexual orientation and relationship status (i.e. household type); any differences across groups are noted] and were in grade 10 at school. The average age of respondents did not differ from that of non-respondents ($t_{\text{unequal variances}} = 1.05$, $df = 29.9$, $P > 0.10$). Although boys made up the majority of respondents (62.1% vs 37.9% girls), this did not differ from the sex ratio of non-respondents ($\chi^2 = 0$). In terms of household type, similar numbers of youths came from households headed by lesbian couples ($n = 12$; 41.4%) and single women ($n = 11$; 37.9%), whereas smaller numbers came from households headed by heterosexual couples ($n = 6$; 20.7%). Within households, over half ($n = 16$; 55.2%) the youth had siblings, of which most were also conceived by DI (11/16; 68.8%) and about half of siblings had the same donor (5/11; 45.5%).

Growing up with an identity-release donor

Learning about one's DI origins

The vast majority of the youths could not recollect a specific age at which they were told that they had a donor, and instead reported always knowing (22/29; 75.9%). Among those who could recollect being told ($n = 7$), the median age was 7 ± 2.0 (range = 4–9.5 years; see Table II; any differences across household types are noted). Thus, the average age at which youths learned about their DI origins was considerably younger than 7 years.

The youths rated how learning and knowing about their DI origins had affected their relationship with their birth mother, and, if applicable, their co-parent (father or other mother). Note that some of the youths from single parent households reported feelings toward a co-parent (i.e. their mother's ex-partner) and some youths from two parent households did not report feelings for a co-parent (i.e. the second person in the house was not present when the youth learned about their DI conception—for more details on

Table II. Disclosure about DI

Household headed by:	Single women	Lesbian couples	Heterosexual couples
Learned about DI origins			
At age (mean \pm SD)	6.3 \pm 2.8	6.5 \pm 2.1	7.5 \pm 0.7
Has always known % (n)	72.7 (8)	83.3 (10)	66.7 (4)
Impact on parent–youth relationship (mean \pm SD) ^a			
Birth mother**	4.0 \pm 0.9	3.1 \pm 0.7	3.3 \pm 0.5
Co-parent	3.4 \pm 0.5 ^c	3.2 \pm 0.7	3.0 \pm 0.6
Comfort with DI origins (mean \pm SD) ^c	4.7 \pm 0.6	4.3 \pm 1.1	4.2 \pm 1.3
Explanation open-ended; given by % (n)			
Does not affect my life (neutral)	30 (3)	55.6 (9)	50 (3)
Feels loved and very wanted	50 (5)	33.3 (3)	33.3 (3)
Feels unique (neutral)	20 (2)	0 (0)	0 (0)
Feels unique (negative)	0 (0)	11.1 (1)	16.7 (1)
DI was a kind method of conception (vs other methods)	20 (2)	0 (0)	0 (0)
How private youth is about having a donor (mean \pm SD) ^d	2.8 \pm 1.3	3.0 \pm 1.5	2.3 \pm 1.0
Told others about having a donor % (n)			
Relatives not living with youth			
None of them	9.1 (1)	0 (0)	0 (0)
Just a few of them	9.1 (1)	0 (0)	0 (0)
Most to all of them	81.2 (9)	100 (12)	100 (6)
Friends			
None of them	18.2 (2)	16.7 (2)	0 (0)
Just a few of them	45.5 (5)	16.7 (2)	50 (3)
Most to all of them	36.4 (4)	66.7 (8)	50 (3)
Teachers			
None of them	45.5 (5)	41.7 (5)	33.3 (2)
Just a few of them	27.3 (3)	41.7 (5)	66.7 (4)
Most to all of them	27.3 (3)	16.7 (2)	0 (0)
Others' feelings about the youth having a donor (mean \pm SD) ^a			
Family who live with youth*	4.8 \pm 0.4	4.6 \pm 0.8	3.3 \pm 0.8
Relatives who do not live with youth**	4.1 \pm 0.8	4.0 \pm 1.0	3.3 \pm 0.5
Friends**	4.6 \pm 0.7	3.9 \pm 1.0	3.4 \pm 0.9
Teachers**	4.8 \pm 0.4	3.7 \pm 1.0	3.7 \pm 1.2

*Groups differ, $P < 0.05$.

**Groups differ marginally, $P < 0.10$.

^aLikert rating scale, where 1 = very negative, 2 = somewhat negative, 3 = neutral, 4 = somewhat positive, 5 = very positive.

^bSome youth gave ratings for a co-parent no longer living in the household.

^cLikert rating scale, where 1 = very uncomfortable, 2 = somewhat uncomfortable, 3 = neutral, 4 = somewhat comfortable, 5 = very comfortable.

^dLikert rating scale, where 1 = not at all private, 3 = moderately/somewhat private, 5 = very private.

the parental relationships, see Scheib *et al.*, 2003). Youths reported that learning and knowing had a neutral to somewhat positive effect on the relationship with their birth mother (mean rating 3.5 ± 0.9 , range 2–5; all but one youth responded at least neutrally), with youths in single parent households feeling marginally more positive than youths from households headed by lesbian couples (Welch statistic for ANOVAs, $W = 2.8$, $df = 2$, $14.9 P < 0.10$; see Table II). For co-parents, youths felt that learning and knowing had a neutral effect on their relationship (mean 3.2 ± 0.6 , range = 2–5; all but one youth responded at least neutrally). We then tested whether knowing had a less positive effect on the youth/co-parent relationship than on the youth/birth mother relationship. No such effect was found ($t = 0$). We also tested whether learning and knowing impacted youths who had always known differently than those who learned later. Although not significantly different, a trend suggested that youths who had always known reported a more neutral or no effect on the relationship with their birth mother than youths who had learned later (mean for those who always knew 3.3, mean for those who learned later 4.0, $t = 1.89$, $df = 24$, $P = 0.07$). We did not find any effect for the youth/co-parent relationship.

Comfort with DI origins

We also asked the youths to rate how comfortable they felt currently about their parents having used a donor to have them. Most reported being somewhat to very comfortable, with all but two youths responding at least neutrally (mean 4.4 ± 1.0 , range = 2–5; see Table II). We then asked why they felt this way. Most youths gave one of two reasons (see Table II). The first reason, reported by 44% (11/25) of the youths, was that they felt that having a donor did not affect their life—‘it’s a fact taken for granted’—and that they did not feel unique or different—‘it’s all I know.’ One explained that it did not matter whether or not one was conceived the ‘usual’ way, instead, what ‘matter[ed] is the way [one is] brought up and the people who bring [them] up, not the specific DNA.’ The second reason, reported by similar numbers of youths (40%; 10/25), was that they felt very loved and wanted by their family and (positively) unique. Smaller numbers reported feeling different, but neutral (8%; 2/25), or different and somewhat uncomfortable about how they were conceived (8%; 2/25). The explanation given by one of the two youths who reported being uncomfortable seemed specific to wanting a more traditional family structure—life would have been easier that way (the other youth did not provide much of an explanation). Finally two youths (8%) also explained that they were very comfortable with their DI origins, because it was much more preferable than being conceived in other ways (e.g. casual sex). Responses did not differ across household type.

Openness about DI origins

We asked youths to rate how private they were/how much they talked about having a donor. On average, they reported being moderately/somewhat private (mean 2.8 ± 1.3 ,

range = 1–5; see Table II), although there was considerable variability. About half (55.2%) felt quite open (rating themselves a ‘1’ or ‘2’), 10.3% rated themselves as moderately/somewhat private (rated a ‘3’) and 34.5% tended toward being very private (rated a ‘4’ or ‘5’). We then asked them to rate approximately how many ‘relatives not living with you’, friends and teachers knew that the youth had a donor and how they felt about it. Not surprisingly, youths were most open with those closest to them—most with family, intermediate with friends, and least with teachers (see Table II). People’s feelings about the youth’s origins ranged from neutral to very positive. Youths rated the family they lived with as being somewhat to very positive (mean 4.4 ± 0.9 , range = 3–5; see Table II), and extended family, friends and teachers as being somewhat positive (extended family mean: 3.9 ± 0.8 , range = 3–5; friends: 4.1 ± 1.0 , range = 3–5; teachers: 4.1 ± 1.0 , range = 3–5). No one appeared to be overtly negative about the youth’s conception origins, however the youth did experience different reactions depending upon their household type. Youths in both single parent households and lesbian couple households felt that their immediate family was more positive than youths in households headed by heterosexual couples ($W = 7.9$, $df = 2$, 11.4 , $P < .05$; see Table II). In addition, non-significant trends suggested that relatives and friends were also more positive about the youth’s origins when they came from households headed by single women than when they came from households headed by heterosexual couples (relatives: $W = 3.0$, $df = 2$, 14.5 , $P < 0.10$; friends: $W = 3.3$, $df = 2$, 10.1 , $P < 0.10$; see Table II). Finally, youths from single parent households also felt that their teachers were marginally more positive about their origins than youths from lesbian couple households ($W = 4.4$, $df = 2$, 4.6 , $P < 0.10$; see Table II). In summary, these results indicate that in comparison to other household types, youths from single parent households experienced the most positive reactions from both their immediate family and others outside their household. While youths from lesbian couples experienced just as positive reactions from those they live with, this did not extend to others outside the household. Finally, youths from households headed by heterosexual couples, while not experiencing negative reactions, nonetheless experienced the least positive response to their conception origin both from their immediate family and from others outside the household.

Feelings about the donor

What the donor is called

To understand how the youths perceived their donors, we first asked what they called him. The three most common names were ‘the donor’, ‘biological/birth father’ and ‘father/dad’ (each given by 24.1% of youth; see Table III). A smaller number (13.8%) of the youths used more than one name, such as ‘donor/biological father’, ‘donor/dad’, ‘donor/other dad’, probably because it was often difficult to know what to call him. Unique names included using a first name made up by the parents, or calling the donor ‘him’ or ‘that guy’ (each by one family). Finally, one youth simply reported that

Table III. Feelings toward the donor

Household headed by:	Single women	Lesbian couples	Heterosexual couples
What the donor is called (open-ended; given by % (n))			
The donor	9.1 (1)	41.7 (5)	16.7 (1)
Biological or birth father	27.3 (3)	16.7 (2)	33.3 (2)
Father/dad	36.4 (4)	16.7 (2)	16.7 (1)
Multiple names ^a	0 (0)	25.0 (3)	16.7 (1)
Other ^b	27.3 (3)	0 (0)	16.7 (1)
Feelings toward the donor			
Overall feeling (mean \pm SD) ^{c*}	4.4 \pm 0.9	3.3 \pm 0.6	3.8 \pm 1.0
descriptives (% endorsed item (n))			
Curious	100 (11)	75 (9)	83.3 (5)
Appreciative*	72.7 (8)	25 (3)	66.7 (4)
Concerned/anxious	54.5 (6)	25 (3)	16.7 (1)
Excited	45.5 (5)	25 (3)	16.7 (1)
Hasn't really thought about it	9.1 (1)	25 (3)	33.3 (2)
Doesn't care**	0 (0)	25 (3)	33.3 (2)
Important person in youth's life	9.1 (1)	8.3 (1)	16.7 (1)
Resentful/angry/upset	0 (0)	16.7 (2)	0 (0)
No feelings	0 (0)	16.7 (2)	0 (0)

^aMultiple names include 'donor/biological father', 'donor/dad', 'donor/other dad'.

^bOther includes donor is not discussed, is called 'him', 'that guy' or a first name.

^cLikert rating scale, where 1 = very negative, 2 = moderately negative, 3 = neutral, 4 = moderately positive, 5 = very positive.

*Groups differ, $P < 0.05$.

**Groups differ marginally, $P < 0.10$.

the donor was not discussed. Although household composition was not significantly related to what the youths called the donor, it is interesting to note the trend that those from single parent households most often called the donor 'father' or 'biological father', those from lesbian couple households most often used the term 'the donor', and no real pattern emerged for youths from heterosexual couple households (see Table III).

Feelings about the donor

We asked the youths what their feelings were toward the donor on a rating scale and using adjective endorsements. On average, youths rated their feelings as being somewhat positive (mean 3.8 ± 0.9), with all being at least neutral and almost half (48.3%) feeling somewhat to very positive. Feelings toward the donor differed across households; although no youths had negative feelings, those from single parent households were significantly more positive about the donor than youths from households headed by lesbian couples ($W = 5.1$, $df = 2$, 12 , $P < 0.05$; see Table III). Youths also endorsed adjectives to describe their feelings and some wrote additional comments. From this, it was clear that the overwhelming feeling was curiosity about the donor (endorsed by 86.2%). One commented, 'I am curious as to what he is like and how he has changed from the papers that tell me of his life.' Others reported wanting to know what the donor was like and being curious about whether they shared their looks with him. Additional feelings included being appreciative of the donor (endorsed by 51.7%), with youths from households headed by single women and heterosexual couples expressing this more often than youths from households headed by lesbian couples (likelihood ratio, $G^2 = 6.1$, $df = 2$, $P < 0.05$). About a third of youths (34.5%) were anxious or concerned about the donor; their comments indicated that this was

primarily about the possibility of meeting him. One said, 'I am a bit fearful of meeting the donor...and wonder if he is a good person or not.' Yet similar numbers (31%) also endorsed being excited, presumably because they could eventually learn more about and possibly meet their donor. Just three youths (10.3%) endorsed feeling that the donor was an important person in their lives. In contrast, a few more (21.4%) endorsed that they had not really thought about how they felt about the donor or that they had no feelings about him (6.9%). Some youths (17.2%) endorsed that they did not care about the donor, with marginally more youths from households headed by lesbian and heterosexual couples doing so than youths from single parent ones. Finally, one youth (3.4%) endorsed feeling angry and upset, whereas another was resentful. The latter explained that, 'I am resentful that I haven't known him and that I don't know very much about him.' Three youths provided additional information about how they felt about the donor. Two comments concerned not having a father. One said that when he was younger, he had been angry about not having a father, but now it no longer bothered him. The other explained that she 'always wanted a father, but [was] not sure the donor [was] it because he [had] not been around most of [her] life'; this was the youth who had reported being resentful. The last youth commented that he wondered how life would have been different without a donor. Thus, with those few exceptions, youths were generally positive about the donor and most were curious about him.

Insight from descriptions of the ideal and nightmare donor

We asked youths to describe their ideal donor and a donor they 'would not be happy to have', in an open-ended question, as a way to identify their hopes and fears about

the donor. Responses could be coded into four categories—two for the ideal donor and two for the flawed donor. Descriptions for the ideal donor were coded as (i) positive character or physical traits (e.g. good, nice, accepting, friendly, open-minded, respectful, intelligent, handsome, happy, successful, active, healthy, self confident) and (ii) positive interactions with the donor (e.g. willing to meet and see me, shares my interests, enjoys being with me), whereas descriptions for the flawed donor were coded as (iii) negative character or physical traits (e.g. loser, obnoxious, jerk, wants money, mean, violent, abusive, addict, unattractive, not intelligent, unhappy) and (iv) negative interactions with the donor (e.g. does not want contact, does not share my interests, pressures me, too invasive in my life, disrespects me, ruins what I have going now). For the ideal donor, 76% described the donor by positive character traits and 44% described him by positive interactions he would have with the youth, such as being willing to meet them and sharing their interests. Flawed donors were most often described as someone with negative character traits (by 80%) and/or as being unwilling to have contact with the youth or alternatively trying to be too involved in their life (by 40%). These descriptions indicate that the youths were mostly hoping for a donor who was simply a good, open-minded person, who would be open to contact and not necessarily be heavily involved in their life. Consistent with this, we did not find any youth who described their ideal donor as someone willing to be their father or who would endow them with college tuition.

Questions about the donor

In an open-ended format, we asked youths what questions they had had about the donor over the years and (separately)

what information they wanted to learn about him. This helped identify whether there was additional information we could provide to the youth at identity-release, as well as giving insight into the youth's experience of growing up knowing little about their donor. Research assistants combined responses from both questions and coded them into nine categories. The top question youths had about the donor concerned what he was like (character-wise; given by 82.87%, see Table IV). One youth said, '[the] hard part is that no one can tell me what he's like' and another wanted information 'just to get to know him.' The next most common questions concerned what the donor looked like (41.4%) and questions about his family, ranging from genealogy to whether he had a family and what they were like (34.5%). About one-quarter of youth (24.1%) reported questioning whether the donor was like the youth in any way (e.g. character, looks) or whether they would ever meet (17.2%). Smaller numbers reported having genetic or health-based questions (10.3%), or wondering why he had donated sperm (10.7%), what his name was (6.9%) or whether he ever thought of them (one youth). Finally, in comparing responses across households, one trend and one difference emerged; more youths from single parent households wondered if the donor was like them ($G^2 = 4.6$, $df = 2$, $P < 0.10$) and only youths from single parent households reported wondering why he had decided to become a sperm donor ($G^2 = 6.2$, $df = 2$, $P < 0.05$).

Information desired at donor identity-release

We asked youths what information they might want at identity-release, in addition to the donor's identity, and gave them a list of items they could check off. Their responses matched the questions they listed earlier. The number one thing they wanted was a picture of the donor

Table IV. Questions about the donor

Household headed by:	Single women	Lesbian couples	Heterosexual couples
Questions about the donor (open-ended; given by % (n))			
What is he like?	81.8 (9)	83.3 (10)	83.3 (5)
What does he look like?	45.5 (5)	33.3 (4)	50.0 (3)
Questions about his family	27.3 (3)	41.7 (5)	33.3 (2)
Is he like me?***	45.5 (5)	8.3 (1)	16.7 (1)
Why did he donate sperm?*	27.3 (3)	0 (0)	0 (0)
Health/genetic questions	9.1 (1)	16.7 (2)	0 (0)
What is his name?	9.1 (1)	8.3 (1)	0 (0)
Is he open to meeting me?	18.2 (2)	16.7 (2)	16.7 (1)
Does he ever think of me?	9.1 (1)	0 (0)	0 (0)
Donor information desired at identity-release (% endorsed item (n))			
Picture	100 (11)	100 (12)	83.3 (5)
Current circumstances**	100 (11)	75 (9)	100 (6)
Feelings about being contacted by youth*	90.9 (10)	58.3 (7)	100 (6)
Health-related	81.8 (9)	75 (9)	33.3 (2)
Family history/information about relatives*	100 (11)	50 (6)	33.3 (2)
Youth with the same donor (mean \pm SD) ^a			
Interest in contact	4.6 \pm 0.7	3.8 \pm 1.5	4.2 \pm 1.2
Interest in meeting	4.4 \pm 0.8	3.7 \pm 1.6	3.8 \pm 1.3

*Groups differ, $P < 0.05$.

**Groups differ marginally, $P < 0.10$.

^aLikert rating scale, where 1 = very negative, 2 = somewhat negative, 3 = neutral, 4 = somewhat positive, 5 = very positive.

(endorsed by all but one youth, 96.6%; see Table IV). This was followed by information about his current circumstances (i.e. what he's doing, if he's married and/or has his own children; endorsed by 89.7%). These two responses matched their questions about what the donor was like and looked like. Many (79.3%) were also interested in the donor's feelings about being contacted, following one youth's comment that she would rather find out from the sperm bank, rather than the donor, that the donor did not want her contact. Finally most youths also wanted information about the donor's health (69%) and family history/ information about relatives (65.5%). Several youths also simply commented at the end of the list 'I want as much information as possible.' For several of the items, type of household was related to whether or not they wanted specific information. Fewer youths from lesbian couple households wanted information about the donor's feelings about being contacted ($G^2 = 6.6$, $df = 2$, $P < 0.05$), and marginally fewer wanted information about his current circumstances ($G^2 = 15.1$, $df = 2$, $P < 0.10$). Wanting information about a donor's family was also related to household type, with youths from households headed by single women being most likely to want the information and those from heterosexual-coupled households wanting it the least. Differences across groups notwithstanding, however, it was clear overall that the youths wanted to know as much as possible about their donor.

Interest in youths who share the same donor

It was possible that if youths were interested in learning more about their donor, they might also be interested in others who share the same donor. These other youths might share similarities with them, through being genetic relatives and through having similar conception origins. Therefore, we asked the youths to rate how interested they were in 'getting in contact' with others with the same donor. They were between moderately and very interested (mean 4.0 ± 1.3 , range = 1–5), with 89.7% being at least moderately interested (see Table IV). They expressed a similar interest in meeting these youths (mean 3.9 ± 1.3 , range = 1–5), with 85.7% being at least moderately interested. Not surprisingly, youths' interest in their donors was highly correlated with their interest in others who share the same donor ($r = 0.8$, $P < 0.05$).

Plans for donor identity-release

One of the main goals of the current study was to identify youths' interest in obtaining their donor's identity. Thus, our last set of questions focused on plans for donor identity-release. We first asked how likely the youth was to request the donor's identity. On average, youths rated themselves as between moderately and very likely to request their donor's identity (mean 4.3 ± 1.2 , range = 1–5; see Table V), with 86.2% being at least moderately likely to request

Table V. Plans for donor identity-release

Household headed by:	Single women	Lesbian couples	Heterosexual couples
Likelihood that youth requests donor identity-release (mean \pm SD) ^{a*}	5.0 \pm 0	3.8 \pm 1.5	4.2 \pm 1.0
When will the request be made (% (n))			
At age 18	72.7 (8)	58.3 (7)	16.7 (1)
Age 18 or later ^b	18.2 (2)	8.3 (1)	16.7 (1)
Later ^b	0 (0)	0 (0)	16.7 (1)
Probably will not request donor's identity	0 (0)	8.3 (1)	0 (0)
Not sure	9.1 (1)	25.0 (3)	50.0 (3)
Parent's anticipated reaction to request for donor identity-release (mean \pm SD) ^d			
Birth mother ^{**}	4.6 \pm 0.7	4.8 \pm 0.6	4.2 \pm 0.4
Co-parent [†]	4.8 \pm 0.5 ^c	4.8 \pm 0.6	3.2 \pm 1.2
Likelihood that youth will want to contact donor (mean \pm SD) ^{a*}	4.7 \pm 0.9	3.7 \pm 1.5	3.7 \pm 0.8
When will youth try to contact donor (% (n))			
At age 18	54.5 (6)	41.7 (5)	16.7 (1)
Age 18 or later ^b	27.3 (3)	16.7 (2)	16.7 (1)
Later ^b	0 (0)	8.3 (1)	16.7 (1)
Probably will not request donor's identity	0 (0)	8.3 (1)	0 (0)
Not sure	18.2 (2)	25.0 (3)	50.0 (3)
Reason why youth might want to contact the donor (% (n))			
Get more information	90.9 (10)	75.0 (9)	83.3 (5)
Meet donor in person	81.8 (8 + 1 maybe)	58.3 (7)	83.3 (5)
Learn more about themselves/increase their sense of identity*	100 (8)	40 (4)	66.7 (4)
Learn about and meet donor's family ^{**}	90.9 (9 + 1 maybe)	58.3 (7)	33.3 (2)
Would want a relationship	81.8 (7 + 2 maybe)	50 (4 + 2 maybe)	66.7 (4)

*Groups differ, $P < 0.05$.

**Groups differ marginally, $P < 0.10$.

^aLikert rating scale, where 1 = not at all likely, 3 = moderately/somewhat likely, 5 = very likely.

^bLater (e.g. after college, after getting married, when the youth was more settled).

^cSome youths gave ratings for a co-parent no longer living in the household.

^dLikert rating scale, where 1 = very negative, 2 = somewhat negative, 3 = neutral, 4 = somewhat positive, 5 = very positive.

identity-release. Only one youth thought she would not obtain her donor's identity. Nevertheless, interest in identity-release differed across household type, with youths from households headed by single women being more interested than those from households headed by lesbian couples ($W = 5.7$, $df = 2$, 9.2 , $P < 0.05$). In terms of timing, 55.2% thought they would obtain their donor's identity at age 18, 13.8% at age 18 or later (e.g. after college), and one (3.4%) after college. Several (24.1%) were not sure when they would come forward and one did not think she ever would (see Table V).

We examined how youths thought their parents would react to the request for their donor's identity. Both birth mothers and co-parents were expected to react somewhat positively (birth mothers: mean 4.6 ± 0.6 , range = 3–5; co-parents: mean 4.3 ± 1.0 , range = 2–5), but their expected reactions differed across household type. Youths from households headed by heterosexual couples expected both their birth mother and co-parent to be less positive than did youths from other households. Specifically, these youths expected their birth mother to be marginally less positive than did youths from households headed by lesbian couples ($W = 2.8$, $df = 2$, 16 , $P < 0.10$), and their father to be less positive than did youths from households headed by single women (i.e. the reaction of the birth mother's ex-partner) and lesbian couples ($W = 4.6$, $df = 2$, 7.8 , $P < 0.05$; see Table V). We then tested whether a parent's anticipated response might impact the youth's likelihood of requesting their donor's identity. It did not appear to—no relationship was found between either the parent's expected reaction and the youth's likelihood of requesting identity-release.

Contacting the donor

We asked the youths how likely it was that they would want to contact their donor. Most youths thought they would (mean likelihood rating 4.1 ± 1.3 , range = 1–5), with 82.8% being at least moderately likely to try to make contact, and only one youth not planning to. Again, youths from households headed by single women expressed the most interest, and were more likely to want to contact the donor than youths from households headed by heterosexual couples ($W = 3.7$, $df = 2$, 15 , $P < 0.05$; see Table V). In an open-ended question, youths reported when they might try to contact the donor, if ever. Almost half (41.4%) planned to try to contact their donor at age 18, and 20.7% more planned to at age 18 or later (e.g. after s/he gets married). Two (6.9%) thought they would wait until later and some (27.6%) were not sure when. Only one did not think she would try to contact her donor (see Table V). In terms of how they would make contact, most youths hoped they could first contact their donor through the sperm bank (60.7%) or by letter or email (28.6%). Very few thought they would first try to contact their donor by phone (3.6%) or in person (7.1%).

Why contact the donor?

The last question focused on why the youth might want to contact their donor. We provided options to choose from and space to write additional information. The youths' most

common response (endorsed by 82.8%) was that contacting the donor would allow them to get more information about him (see Table V; note that contact here meant direct communication with the donor, but not necessarily in person—for example, it could be by email). Their additional comments revealed that 82.6% (19/23 who made comments) wanted information about the donor's life and what he was like—'[information] just to get to know him.' Smaller numbers wanted information about how alike the youth and donor were (26.1%). These open-ended comments matched the types of questions reported earlier by the youths. Many youths endorsed wanting to meet the donor (69%, plus one additional person said maybe). Similar numbers also felt that communicating with the donor might help them learn more about themselves (endorsed by 66.7%; five pilot subjects did not have this option). Over 60% (62.1%, plus one additional person said maybe) wanted to contact the donor so that they could learn more about and possibly meet the donor's family. Finally, 51.4% endorsed wanting to contact the donor because they would want some sort of a relationship with him (an additional four youths said maybe; see description of desired relationship below). Household type was significantly or marginally related to two of the reasons youths reported for wanting to contact their donor. Compared to other households, youths from households headed by single women reported wanting to contact the donor because it would help them learn more about themselves ($G^2 = 9.5$, $df = 2$, $P < 0.05$) and because they wanted to learn more about and possibly meet the donor's family ($G^2 = 8.1$, $df = 4$, $P < 0.10$).

Almost two-thirds (65.5%) of the youths thought they would want or might want a relationship with their donor and almost all were able to provide a description in response to the question of the type of relationship desired. Descriptions could be coded into four categories. Most commonly (9/17; 52.9%), youths just wrote 'friends.' One youth wrote, 'a friendly, man to man relationship, not a 'daddy', and another wrote, 'I would like a relationship where we do some stuff but not see him all the time.' Smaller numbers (17.6%) wanted something more familial, like an uncle who was not exactly a parent, but more of an older friend—'I would like it to be one like a family friend, or like my uncle.' Two youths (11.8%) envisioned a parent/child relationship. One youth (5.9%) described the relationship insofar as he only wanted to be able to identify the person as his father, but was not specifically looking for a father—'just someone to say hey that's my dad.' Finally, a small number (17.6%) also reported that the relationship would 'depend on what [the donor] was like.' Overall, then, when the youths expressed interest in a relationship with the donor (in about half the cases), most envisioned a friendship. Only two youths reported wanting something like a parent/child relationship (6.9% of the sample).

In summary, the majority of the youths planned to get their donor's identity and contact him, with just over half planning to do so at age 18, and others not being sure when. Most simply wanted more information about the donor, with some feeling that it would help them learn more about

themselves. Fewer, although still about half, thought they would want a relationship with the donor, most commonly described as a friendship.

Discussion

In the current study, we report findings from adolescent offspring who have open-identity donors and who can soon get their donors' identities. The youths are among some of the oldest DI offspring studied so far and represent the only sample who have open-identity donors. Overall, with few exceptions, the youths appeared positive and comfortable about their origins and looked forward to obtaining their donors' identities.

As with the children in previous studies (Rumball and Adair, 1999; Lindblad *et al.*, 2000; Vanfraussen *et al.*, 2001, Vanfraussen *et al.*, 2003a; Lycett *et al.*, 2004), learning about one's origins did not seem to have a negative impact on the youths. For the most part, youths in the current study were told at a young age, with most saying that they had always known. Learning appeared to have a neutral to positive effect on the relationship with their parents. Almost all the youths were comfortable about their origins, and tended to share this information with people who were close to them—primarily family, with some friends and few teachers. Youths perceived these people to be either neutral or positive about their having a donor. It is noteworthy that many of these youths also participated in an earlier study by Chan *et al.*, (1998) when they were children, and those findings indicated that the children were well adjusted. The positive findings from the current study suggest that their well-being likely continued into adolescence.

Youths generally felt positive toward the donor, with the overwhelming feeling being curiosity about him. All but one youth listed at least one question they had about the donor 'over the years', with their number one question being 'what is he like?' When given options of the types of information they might want at identity-release, all but one youth listed a picture of the donor and almost as many wanted information about the donor's current circumstances. It is interesting to note that the youths still wanted more information, despite the fact that most of their parents would have had descriptions ('profiles') of the donor (e.g. his interests, skills, goals, self-described personality) from when they were DI recipients. Although some of the youths had not seen or remembered seeing the profiles, it was more commonly the case that they simply wanted more information. This is consistent with Hewitt's (2002) finding that her sample of DI adults and youths were interested in 'knowing their donor as a person, a fellow human being' (p. 19; see also Rumball and Adair, 1999; Lindblad *et al.*, 2000).

That youths wanted information about their donor did not necessarily mean that he played a critical role in their lives. Few identified him as being an important person in their lives. Their names for him ranged from 'the donor' to a qualified father (e.g. 'biological father') or simply 'father'. Although using the term 'father' might suggest the desire for the donor to fill a father's role, it is important to note that

when the youths were asked to describe the kind of relationship they might want with the donor, few responded with a father/child description. Over 90% were looking for something else (e.g. older friend) or nothing at all. Consistent with testimonials from DI offspring (e.g. Shanner and Harris, 2002; Lorbach, 2003) and Hewitt's (2002) results, the findings from the current study provide little support for the stereotype that offspring are looking for a father in their donor.

In addition to interest in their donor, youths expressed interest in contacting and meeting other offspring with the same donor. This sentiment echoed the recent establishment of an internet donor sibling registry by a 12 year old DI child and his mother to facilitate contact among youths with the same donors (see www.donorsiblingregistry.com). In 2004, the registry included over 3000 members and 500 individuals had been matched. This interest is likely fueled by an interest in learning more about one's shared ancestry (e.g. individuals can compare features), as well as connecting with genetic relatives, especially half-siblings—something that may be particularly important to only children who desired, but never had siblings (Scheib and Ruby, unpublished data).

Finally, all but one youth planned to obtain their donor's identity, although not necessarily at age 18. Many also thought they would try to contact the donor at some point, but that they would prefer to do so indirectly, through the sperm bank or by letter or email. Few planned to contact the donor by phone or in person. In the preliminary focus groups, youths explained that they did not want to intrude on the donor's life and would prefer to have the sperm bank make contact for them, or to have the donor's stated preference about offspring contact, a finding that seemed to bear out with the larger study sample. Thus it appeared that while offspring were very curious and eager to learn more about their donor, they were also concerned about respecting his privacy and not intruding on his life. This finding indicates that the stereotypical concern of offspring showing up on the donor's doorstep is inaccurate and does not reflect the intentions of actual youths anticipating going through the identity-release process.

The youths' reasons for contact again stemmed from their curiosity about the donor. Most commonly, youths planned to contact the donor to learn more about him, with slightly fewer stating that they simply wanted to meet him. Two-thirds also explained that contacting the donor would allow them to learn more about themselves and increase their sense of identity, a finding that is echoed in the study of Vanfraussen *et al.*, (2003a) and many DI adult testimonials. Finally, about half of the youths reported that they might want a relationship with the donor and when asked to describe it, most said 'a friend'.

Donor perspective

Although youths did not appear to be looking for a father in the donor, many hoped for more than simply knowing their donors' identities. But the question remains as to whether the donors themselves show a similar interest and are open to contact. Previous research with anonymous donors suggested

that some would be open to becoming open-identity and thus eventually known to adult offspring (e.g. Mahlstedt and Probasco, 1991; Purdie *et al.*, 1992; Daniels *et al.*, 1996). Another study indicated that open-identity donors in Sweden (where open-identity donation is legislated) had positive attitudes toward future contact with offspring (Lalos *et al.*, 2003). With regards to the current study, some findings are available from a parallel study conducted with the youths' donors—men who were open-identity donors 10–18 years ago (J.E.Scheib, M.Riordan and S.Rubin, unpublished data). Although being open-identity only requires that a donor's identity be given to interested adult offspring, these donors expected that offspring would contact them and would want to get to know them. How much interaction they were open to, however, was unclear, mostly because identity-releases represented such unknowns—unknowns about what the offspring were like, what they wanted, and how any interactions would impact the donors' own families. Nonetheless, donors were positive about upcoming identity-releases and, similar to the offspring, were very curious about what the offspring were like. Further studies are needed to identify donors' interests in establishing ongoing relationships with adult offspring and to track actual experiences after identity-releases.

Differences across households

In comparing differences across household types, youths from households headed by single women appeared most positive about their DI origins. These youths reported that learning about their origins had a more positive impact on their relationship with their birth mother, that they felt more positively about the donor, and that they felt others responded more positively about their DI origins. They also reported being more likely to request identity-release and make contact, suggesting that an interest in the donor was not necessarily based on being unhappy about one's origins or being maladjusted [note that Vanfraussen *et al.*, (2003a) also found that youths' interest in learning more about their donors was not related to their psychological adjustment or the quality of the relationship with their parents]. Finally, these youths also expected that contacting the donor and possibly his family would help them learn more about themselves and increase their sense of identity. Such a finding is not unexpected as the youths have fewer family members (i.e. a co-parent's) that they could relate to.

These differences between youths with single parents and those with lesbian-coupled or heterosexual-coupled parents are also noteworthy in that studies often treat families headed by single women and lesbian couples similarly, mainly through virtue of having no male parent present in the household. The current findings would suggest, however, that when the children know about their origins, families headed by single women and lesbian couples are more different than similar, in comparison to families headed by heterosexual couples. In families headed by lesbian and heterosexual couples, the mere presence of co-parents, regardless of their sex, appears to have the similar effect of dampening the youths' expressed interest in their donors. This contrasts with previous work on single and lesbian-coupled DI recipients

who look more similar to each other than to heterosexual-coupled recipients, specifically with respect to openness versus privacy around their use of DI (Leiblum *et al.*, 1995; Klock *et al.*, 1996; Jacob *et al.*, 1999; Brewaeys, 2001; Murray and Golombok, in press). The current findings suggest that, once the children are born, separate issues arise, such as how the children respond to their origins and their interest in the donor, that make families headed by single women and lesbian couples look more different than alike. In addition, these differences may be more obvious in the current study, because the heterosexual couples were so likely to tell their children about their origins, and thus encounter some of the same issues faced by lesbian couples through virtue of both heading two-parent, rather than single-parent, households. It is becoming clear that the three household types, while sharing some similarities with each other, are also each unique and must be considered individually, depending on the issue at hand (e.g. approaches to openness, desire and need for open-identity donors, interest in donors). Lastly, at present, we cannot tell whether youths who express less interest in their donors truly have less interest or whether they suppress it because they want to protect their co-parents' feelings. The findings of Vanfraussen *et al.*, (2003a) with families headed by lesbian couples suggested that indeed some youths were expressing less interest in their donors out of concern for their co-parents.

Youths in households headed by heterosexual couples may have had additional reason to suppress interest in their donor. These youths reported that their families were less positive that they had a donor than families headed by single women or lesbian couples, and they expected their parents to be less positive about their request for the donor's identity. Reports from the parents concurred (Scheib *et al.*, 2003). In comparison to single and lesbian-coupled parents, heterosexual-coupled parents were less sure that having an open-identity donor was the right decision, and no fathers reported looking forward to their child meeting the donor (vs about half of lesbian co-parents). Nevertheless, they were still positive about having used donor conception and having the identity-release option, as well as being relatively open about it. It is clear that this is not necessarily an easy situation and these families will need additional support as they go through identity-releases.

Reactions to one's origins: differences across studies

Very few youths reported being negative about their origins or towards their parents or the donor. This differs considerably from reports from Turner and Coyle's (2000) group of DI adults, Hewitt's (2002) findings from DI youths and adults, and many DI adult testimonials (e.g. Rushbrooke and Whipp, 2000; Gollancz, 2001; Spencer, 2001; Anonymous, 2002; Shanner and Harris, 2002). While comparisons across groups are difficult due to methodological differences, two major differences likely contributed to the more positive outlook expressed by current respondents: (i) the youth learned about their DI origins, on average, at a younger age than did those in the other groups; and (ii) they had open-identity rather than anonymous donors. First, it is likely that learning

about one's origins at a relatively younger age results in more positive feelings toward DI. Learning early allows the young child to incorporate the information into his or her life story as s/he gets older and, perhaps more importantly, there is no secrecy, and thus no implied shame, about one's origins [e.g. see similar positive results in Rumball and Adair (1999), Lindblad *et al.*, (2000) and Vanfraussen *et al.*, (2003b), for pre-adolescent children who knew of their DI origins]. This idea can be further tested when larger samples of DI adults become available, in which there is variability in the age at which they were told about their origins. One must also consider, however, that the relatively positive feelings expressed by the youths in the current study may also reflect growing up in a generally favorable environment, including experiencing open, non-defensive communication in the family. Thus parental and familial characteristics would also need to be considered in future studies (e.g. see Lycett *et al.*, 2004).

The current study also differed from others in that the youths had open-identity donors. Having an open-identity donor allows individuals to gain more information about their donors and can help avoid the frustration associated with never being able to have one's questions answered. Indeed, lacking access to this kind of information is stated as 'an issue of deep concern and frustration' by many offspring (p. 19 in Hewitt, 2002), even when the parents have been open about their DI origins. Thus, the more positive findings in the current study may partly reflect the opportunities associated with having an open-identity donor. This is testable in a future study that includes both offspring of anonymous donors and of open-identity donors.

Reports from parents vs youth

Reports from the youths concurred with those of their parents (Scheib *et al.*, 2003). Overall, youths' reports of feeling comfortable with their origins and their feelings toward their parents and the donor generally matched what the parents reported. The only area in which the parents and youths differed was in expectations around identity-releases and contact with the donor. Whereas parents and offspring matched on how likely the youth was to request identity-release, they differed on when it would happen. Single parents tended to underestimate how early their children would request identity-release (64% expected their children to come forward at 18 or soon thereafter, whereas 91% actually planned to come forward at this time) and how many would want a relationship with the donor (47% vs 82%). In contrast, both lesbian-coupled and heterosexual-coupled parents tended to overestimate how soon their children would request identity-release (89% of lesbian couples vs 67% of their children expected identity-release to happen at around age 18; 60% of heterosexual couples vs 33% of their children expected identity-release to happen at around age 18). Heterosexual couples also underestimated how many of their children would want a relationship with the donor (40% vs 67%). It is not clear why these discrepancies exist (maybe youths from families headed by couples do not as readily reveal their interest in their donors as a way to protect their co-parents?),

only that again it is clear that youths from single parent households showed the most interest in their donors.

Limitations of the study

As with the study of the youths' parents (Scheib *et al.*, 2003), several limitations should be kept in mind when considering the current results. One issue concerned the sample size and that numbers became somewhat limited once the data from the youths were separated into the three household types (i.e. those headed by single women, lesbian couples and heterosexual couples). Such small numbers limited the power to find differences across household types. To address this, we included both significant differences and non-significant trends in the results section, with the acknowledgment that the latter were only trends. Whether these differences and the findings overall will generalize to other samples has yet to be determined, but they are important nevertheless, because they provide basic information and insight from DI families with adolescent children, about whom little is known.

An additional concern related to the youths who did not participate in the study, and whether their experiences were different and/or less positive than those who did participate. Some insight about non-participants could be gained from the parents' study (i.e. Scheib *et al.*, 2003). About half of non-participants had parents who did participate. Parental reports seemed to match what youth reported, suggesting that the experiences of this group of non-respondents probably did not differ much from those of youths who did participate. The other half of non-participants included cases where both the parent and child failed to return their questionnaires. In these cases, the parents participated in a short interview and there was nothing to suggest that they were different from families who did return their questionnaires (e.g. the youth knew about their origins, the families expressed interest in donor identity-releases, and they responded positively to our phone call). One possibility, however, is that these youths felt less likely that they would request their donor's identity and thus felt less motivated to participate in the study. The current findings suggest that in general youths are very interested in obtaining their donor's identity, but it is possible that this varies across individuals. For example, it is possible that girls will be less interested in their donors than boys, as was found in the study of lesbian-headed families by Vanfraussen *et al.*, (2003a). Although this contrasts with the sex-linked effect in adoption, in which more girls than boys are interested in their birth parents (Grotevant and Kohler, 1999; Howe and Feast, 2000), boys may be more interested in their donors than girls through virtue of wanting to identify with a same-sex genetic parent. In the current study, almost two-thirds of the participants were boys. While this proportion does not differ from the sex ratio of TSBC children born at this time (i.e. no more boys participated in the study than would be expected), by simply having more male than female participants, it is possible that the youths' interest in the donor may appear greater than it would have, had more girls participated. It remains to be seen whether the probability of actually seeking one's donor is linked to one's sex. At present, even though many youths are now eligible to

obtain their donor's identity, too few have actually done so to test this idea.

Where differences might be most expected, however, is among the small number of youths who did not participate because their parents had not told them how they were conceived. Interestingly, these parents did participate in the parents' study and were generally positive about DI. When asked how they thought their children would feel about their origins, however, they felt less positive than parents who had disclosed. But it is not clear whether their children would actually respond negatively, given that the youths who did know seemed comfortable about their origins. In addition, findings from the study of 10–12 year olds by Golombok *et al.*, (2002a,b) suggested that they are doing well (in general), even though >90% did not know how they were conceived. Nonetheless, how these youths will feel should they learn about their origins, remains to be determined. Findings from Turner and Coyle (2000) and Hewitt (2002) suggest that this last group of non-respondents may ultimately have a more negative experience than respondents once they discover their origins, but it is also possible that having an open-identity donor will decrease the severity of their responses. Clearly, further research is necessary among families with open-identity donors.

Conclusions

In summary, the current results indicate that, with few exceptions, youths who have open-identity donors were comfortable with their origins. The youths learned about their origins early on and felt that learning had either a positive impact or no impact on the relationship with their parents. The most common feeling towards the donors was a great curiosity about them, with the youths wanting to get a sense of who they were as people. Almost all youths planned to obtain their donor's identity, although not necessarily at age 18. The youths did not seem to be looking for a father in the donor, instead their interest stemmed more out of a strong curiosity about him, likely because they felt learning more about him would help them learn more about themselves. The current study thus adds to our understanding of DI offspring, and provides the first insight on adolescents' experiences of having open-identity sperm donors.

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