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Asexuality: A Mixed-Methods Approach

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Abstract Current definitions of asexuality focus on sexual attraction, sexual behavior, and lack of sexual orientation or sexual excitation; however, the extent to which these definitions are accepted by self-identified asexuals is unknown. The goal of Study 1 was to examine relationship characteristics, frequency of sexual behaviors, sexual difficulties and distress, psychopathology, interpersonal functioning, and alexithymia in 187 asexuals recruited from the Asexuality Visibility and Education Network (AVEN). Asexual men ($n = 54$) and women ($n = 133$) completed validated questionnaires online. Sexual response was lower than normative data and was not experienced as distressing, and masturbation frequency in males was similar to available data for sexual men. Social withdrawal was the most elevated personality subscale; however, interpersonal functioning was in the normal range. Alexithymia was elevated in 12%. Social desirability was also in the normal range. Study 2 was designed to expand upon these quantitative findings with 15 asexuals from Study 1 through in-depth telephone interviews. The findings suggest that asexuality is best conceptualized as a lack of sexual attraction; however, asexuals varied greatly in their experience of sexual response and behavior. Asexuals partnered with sexuals acknowledged having to "negotiate" sexual activity. There were not higher rates of psychopathology among asexuals; however, a subset might fit the criteria for Schizoid Personality Disorder. There was also strong opposition to viewing asexuality as an extreme case of sexual desire disorder. Finally, asexuals were very motivated to liaise with sex researchers to further the scientific study of asexuality.

Keywords Asexuality · Sexual identity · Sexual orientation · Sexual attraction · Romantic attraction · Qualitative methodology

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Introduction

The term "asexual" is typically encountered in the literature on invertebrates and other lower-level vertebrates, where asexuality conveys greater benefits with ecological adaptation over sexual forms. Recently, the topic of asexuality in humans has ignited a great deal of attention in the popular press (Chang, 2006); however, there have been only a few published studies on the topic. There have been at least seven primetime television features on asexuality in the past year, and several more newsprint and internet articles on the topic. A recent national probability study of 18,000 individuals in the United Kingdom suggested that approximately 1% of the population self-identify as asexual (Bogaert, 2004). Participants were asked to indicate their preferred target of sexual attraction. Those who selected "I have never felt sexually attracted to anyone at all" were categorized as asexual and became the sample of interest. Storms' (1980) definition of asexuality focused on the absence of sexual orientation, characterized by low homoeroticism and low heteroeroticism, and shared with the definition of Bogaert (2004) that asexuals lack a basic attraction towards others. Others,

however, have focused on behavioral definitions and characterized asexuals as individuals who engaged in few or no sexual behaviors (Rothblum & Brehony, 1993). Using a dual-control model of sexual excitation and inhibition, other researchers have defined asexuality based on low levels of sexual desire or excitement (Prause & Graham, 2007). The definition of asexuality adopted by the largest international on-line community of asexual individuals, the Asexual Visibility and Education Network (AVEN), is broader than definitions proposed earlier. It is characterized as an absence of sexual attraction and that "each asexual person experiences things like relationships, attraction and arousal somewhat differently" (Jay, 2005). This definition is most closely aligned with that described by Bogaert (2006) in his conceptual analysis of asexuality.

Although the available data are limited, two studies exist which have sought to describe the characteristics of asexual individuals. Bogaert (2004) explored various demographic and health-related variables predictive of being asexual in the British probability sample. The asexual individuals had a later age of first sexual intercourse, had fewer sexual partners, and engaged in sexual activity less frequently than the sexual participants. Asexuals were also more likely to be female, older, from lower socioeconomic conditions, and have had less education than sexuals.[1] On health-related measures, asexuals were found to have poorer health status, weighed less, and were shorter compared to the sexual group. Asexual women also had a later age of menarche (Bogaert, 2004). Based on these biologic features, Bogaert concluded that the etiology of asexuality may relate to biologic factors early in development.

Prause and Graham (2007) utilized a mixed methods approach to explore asexuality, with a particular focus on the sexual excitation and sexual inhibition (SIS) characteristics of the sample. They first conducted in-depth interviews with four self-identified asexuals and four themes emerged: (1) the experience of sexual behaviors; (2) definitions of asexuality; (3) motivations for engaging in sexual behavior; and (4) concerns about asexuality. The researchers then used these themes to guide a subsequent quantitative phase in which 41 self-identified asexuals and 1,105 sexuals completed online questionnaires, including the Sexual Inhibition Sexual Excitation Scales (SIS/SES), a measure of one's sexual excitation and inhibition proneness (Janssen, Vorst, Finn, & Bancroft, 2002). It was concluded that lack of sexual desire was a defining feature of the asexual group because they had low sexual arousability (low SES scores); however, SIS scores did not significantly differ between sexuals and asexuals. It was suggested that low excitatory processes may characterize asexuality and that asexuals may, therefore, have a higher threshold for sexual arousal (Prause & Graham, 2007).

Notably, there were some contradictory findings between the Bogaert (2004) and Prause and Graham (2007) studies. For example, the studies differed on the proportion of asexuals who had previously been in long-term relationships; the asexual sample in the Prause and Graham (2007) study had a higher level of education; and those in the Bogaert (2004) study reported significantly fewer lifetime sexual partners. It is possible that different operational definitions of asexuality employed to categorize sexuals from asexuals may at least partially account for these discrepancies. In a recent conceptual analysis of asexuality, Bogaert (2006) acknowledged that by using a more general definition of asexuality, this may overcome the problem of investigator-derived operational definitions. It is also possible that a more comprehensive analysis of the experiences of asexual individuals, and the meanings those individuals ascribe to those experiences (i.e., the "lived experiences")[2] may inform the definition as well as clarify the associated features of being asexual. Therefore the goal of this two-part study was to examine asexuality using a mixed-methods (i.e., quantitative and qualitative) methodological design. Increasingly, the benefits of combining quantitative with qualitative methods are being demonstrated in sexuality research (Tolman & Szalacha, 1999), as this reflects the optimal mode of exploring a construct that lacks conceptual and empirical clarity.

Study 1

The primary aim of Study 1 was to further characterize asexual individuals on the basis of sexual, interpersonal, personality, and psychopathology measures. Based on the conclusion by Bogaert (2006) that definitions of asexuality in research should be kept more general, and because there is no consensus among researchers on the definition, we allowed participants to self-identify as asexual. Doing so allowed for participation of a more inclusive group to be studied.

The internet is becoming a widely used forum for conducting research. The anonymity and accessibility of the internet make it a useful tool for research into sensitive topics such as sexuality. Furthermore, the internet can be used to target specific individuals and increase the sample size of an

[1] Note that whereas in prior research this group was defined as "non-asexual," the preferred term used among the asexual community is "sexuals" (Jay, 2005). This term will, therefore, be employed throughout this article.

[2] Phenomenological qualitative researchers use the term "lived experience" to reflect the immediate experience itself *plus* the reflective meanings of it. It derives from philosophical German. Originally, the term "erleben" was used in this context to refer to "to live and to see," referring to the experience plus the meaning that one makes of that experience. In its translation to English, the term "lived experience" was the result.

otherwise underrepresented group (Mustanski, 2001). In the current study, participants were recruited from the AVEN website, which is devoted to those identifying as asexual. There are various asexuality web-forums internationally; however, AVEN has the world's largest self-identified asexual community. AVEN was founded in 2001 by David Jay, with the goal of creating public acceptance and discussion of asexuality, and of facilitating the growth of an asexual community. AVEN members throughout the world regularly engage in visibility projects, included but not limited to distributing informational pamphlets, leading workshops, arranging local meetings, and speaking to the media. Thus, many members are enthusiastic about participating in academic research.

Study 1 explored the sexual, personality, psychopathology, and interpersonal functioning of a group of asexuals recruited via AVEN. To explore sexual behavior (e.g., frequency of touching/petting/kissing, masturbation, and intercourse) in hopes of resolving some of the discrepancies between the findings of Bogaert (2004) and Prause and Graham (2007), we included validated measures of sexual activity. As the possibility that asexuals are simply at the extreme end of the sexual desire spectrum has been raised, sex-specific validated measures of sexual desire and other aspects of sexual response (including sexual arousal, orgasm, and pain) were included. We predicted scores on the desire domain for both men and women to be comparable to available data on men and women with hypoactive sexual desire disorder (HSDD). We included a validated measure of sexual distress to test the hypothesis that asexuals might represent a subgroup of those with sexual dysfunction who have no accompanying sexual distress.

Based on the finding by Prause and Graham (2007) that asexuals have depressogenic features, we predicted that depressive symptoms would be elevated compared to national norms. We also included a brief screen of personality to explore the possibility that asexuality is linked to, or is a feature of, a personality disorder, particularly those from Cluster A (the cluster of DSM-IV syndromes characterized by odd or eccentric features including a tendency towards solitary activities). The construct of alexithymia, described as a collection of personality traits that disturb individuals' affective experience and emotional understanding (Bagby, Parker, & Taylor, 1994), has been found to be related to less frequent sexual behaviors in women (Brody, 2003) and to sexual dysfunction in men (Michetti, Rossi, Bonanno, Tiesi, & Simonelli, 2006). We therefore included a measure of alexithymia to test our hypothesis that alexithymia would be elevated in our sample of asexuals. Finally, because asexuality may represent a more benign expression of discomfort or awkwardness with interpersonal interactions not reflective of a psychiatric or personality disorder, we included a measure of interpersonal problems to test for this hypothesis.

In order to control for the possibility that asexuals might provide exaggerated socially desirable responses, and to reduce additional stigma associated with the term asexual (Bogaert, 2006), we also included a measure of social desirability.

Method

Participants

Although 214 individuals provided consent to participate and completed parts of the online questionnaires, information on the participant's gender was missing in 27 cases. We thus limited our analyses to the 187 participants who indicated their gender ($n = 54$ men, $n = 133$ women).

The average age of participants was 30.1 years for men ($SD = 11.9$) and 28.2 years for women ($SD = 12.1$), and this difference was not statistically significant, $t(179) < 1$. There was no significant sex difference on highest level of education achieved, $\chi^2(6) = 4.26, p > .05$, with the majority of participants having at least some university education. Twenty-six percent had a university degree and 8% had completed post-graduate training (e.g., Ph.D., or M.D.). There was a significant sex difference in individual annual income, $t(178) = 2.64$, $p = .009$, such that men had higher income levels than women.

Measures

Demographic Information

We asked participants to complete demographic information on age, education, annual income, ethnicity, relationship status and length, sexual orientation, whether or not they experienced distress over their sexual identity, whether or not they had ever been diagnosed with a psychiatric disorder, and whether they would like to be contacted for future studies on asexuality. Apart from age, ethnicity, and sexual orientation, which were in a free-response format, all other questions had forced-choice response options.

Sexual Behavior and Response

The Derogatis Sexual Functioning Inventory (DSFI) Drive Scale (Derogatis & Melisataros, 1979) is a multidimensional self-report scale that measures the quality of current sexual functioning. The Drive subscale (7 items) was used in the current study as it measures the frequency of five different sexual behaviors: sexual fantasies, kissing and petting, masturbation, sexual intercourse, and the participant's ideal frequency of intercourse. Behaviors were assessed on a

9-point scale from *Not at all* to *4 or more per day* and a single score was obtained from the sum of these five behavioral domains. The DSFI Drive subscale was found to have acceptable internal consistency (Cronbach's alpha = 0.60), and good test-retest reliability ($r = .77$). We also asked participants' age of first sexual interest and first sexual intercourse.

The Female Sexual Function Index (FSFI) (Rosen et al., 2000) is a 19-item multidimensional self-report scale that assesses key dimensions of sexual response in women. It is composed of six domains: desire, arousal, lubrication, orgasm, global satisfaction, and pain. Test-retest reliability is high for each domain ($r = .79$ to .86) as is internal consistency (Cronbach's alpha > 0.82). The FSFI also has good construct validity and reliably discriminates women with and without sexual desire and arousal disorders. Participants receive a zero on items inquiring about sexual response during sexual activity if such activity had not occurred in the prior 4 weeks. In light of the findings of Meyer-Bahlburg and Dolezal (2007) in which they argued that women who are not currently sexually active should not receive subscale scores on the arousal, lubrication, orgasm, and pain subscales, missing values were entered for items in these subscales if the woman had not been sexually active in the past 4 weeks. Thus, mean totals on these domains reflect the small subgroup of asexual women who were recently sexually active. We did not compute a FSFI Total Score given the large number of missing data in several of the subscale totals due to lack of sexual activity.

The International Index of Erectile Function (IIEF) (Rosen et al., 1997) is a 15-item self-report questionnaire that provides a brief assessment of sexual functioning in men. It assesses five domains: erectile function, orgasmic function, sexual desire, intercourse satisfaction, and overall satisfaction. The IIEF is widely used in clinical trials and has been shown to have excellent internal consistency (Cronbach's alpha on erectile domains >0.90), high test-retest reliability on all domains (>.80), and very good discriminant and convergent/divergent validity (Rosen et al., 1997). Similar to the scoring for the FSFI, we coded as missing data subtotals for any man who was not engaging in sexual intercourse in the past 4 weeks. We also did not compute an IIEF Total Score given the large number of missing data because of lack of sexual activity.

The Female Sexual Distress Scale (FSDS) (Derogatis, Rosen, Leiblum, Burnett & Heiman, 2002) is a brief 12-item self-report scale that quantifies sexually-related personal distress based on the frequency rather than the intensity of distress. The questionnaire lists a series of problems that women might have about their sexuality, and asks the participant how often each of these problems has bothered her in the past 30 days. Each item was scored on a 5-point scale ranging from *Never* to *Always*. The results were summed with a score of 15 or more being recommended as a cutoff point for determining the presence of personal sexual distress. The FSDS has been shown to reliably discriminate between women with and without sexual dysfunction and is sensitive to therapeutically induced change. Internal consistency is very high ($\alpha > .93$) as is temporal consistency (Derogatis et al., 2002). We included a modified version of this scale (12-items) to assess sexual distress in men (MSDS) given that there are no validated measures of male sexual distress available. The reliability of the MSDS in the current sample was excellent (Cronbach's $\alpha = 0.95$).

Psychiatric Symptoms and Personality Characteristics

The Personality Assessment Screener (PAS) (Morey, 1991a) is a brief 22-item self-report inventory that measures various domains of general social functioning. It is based on the longer Personality Assessment Inventory (PAI) (Morey, 1991b), and is a commonly used tool to screen for psychopathology. The PAS is divided into 10 domains of personality problems: Negative Affect, Acting Out, Health Problems, Psychotic Features, Social Withdrawal, Hostile Control, Suicidal Thinking, Alienation, Alcohol Problem, and Anger Control. Each domain is assessed with at least two questions and is scored by a sum of these items. In addition to scores within these subscales, a total score is used to measure overall potential for emotional or behavioral problems. If participants have a total score $\geq$19, P scores are calculated for each individual domain. The P score in each domain represents the likelihood that the participant would have a significant clinical score in that domain if tested with the more thorough PAI. Internal consistency for the PAS Total Score ranges from 0.72–0.79, and test-retest reliability is excellent at 0.86 (Morey, 1991a).

The Inventory of Interpersonal Problems–Circumplex Version (IIP-C) (Horowitz, Rosenburg, Baer, Ureno, & Villasenor, 1988) is an inventory designed to assess a wide range of interpersonal problems. The IIP-C is a 64-item version of the original longer IIP (Alden, Wiggins, & Pincus, 1990; Horowitz, Alden, Wiggins, & Pincus, 2000). Eight octant scales are assessed: Domineering, Vindictive, Cold, Socially Avoidant, Nonassertive, Exploitative, Overly Nurturant, and Intrusive. Two different types of interpersonal behaviors are assessed in this inventory–those that the participant finds hard to do ("It's hard for me to…"), and those that the participant feels that they do too much ("The following are things you do too much"). Each item is measured on a 5-point scale ranging from *Not at all* to *Extremely*. In this study, the mean IIP-C scores were used as an overall measure of severity of IIPs, with a higher score reflecting greater interpersonal problems. Cronbach's alpha ranges from 0.82–0.94 across IIP-C domains and the test-retest correlation coefficients range from 0.80 to 0.90 (Horowitz et al., 1988).

The 22-item Toronto Alexithymia Scale (TAS-20) (Bagby et al., 1994) is a 20-item self-report measure designed to measure the alexithymia construct. It is based on three factors that are common to alexithymia: difficulty identifying and distinguishing between feelings and bodily sensations, difficulty describing feelings, and externally-oriented thinking. Each item is measured on a 5-point scale ranging from *Strongly Disagree* to *Strongly Agree*. A score ≥61 has been suggested as a cutoff score to identify alexithymic participants. Internal consistency is moderate (Cronbach's $\alpha = 0.81$) as is test-retest reliability (0.77).

The Beck Depression Inventory Second Edition (BDI-II) (Beck, Steer, & Brown, 1996) is a 21-item self-report questionnaire revised from the original BDI, and designed to assess severity of depressive symptoms over the past week in clinical and non-clinical samples. The statements are rated on a 4-point scale ranging from 0 to 3. A score ≥15 denotes probable depression. In a sample of college students, the internal consistency of the BDI-II was excellent at 0.90 (Storch, Roberti, & Roth, 2004).

Social Desirability

The Balanced Inventory of Desirable Responding (BIDR) (Paulhus, 1988) is a 40-item scale used to identify exaggerated socially desirable responses. Participants indicate how true they think a series of statements are that refer to the participants' behaviors or feelings. Each statement is rated on a 7-item scale ranging from *Not True* to *Very True* and total scores are calculated using the sum of extreme responses (6 or 7). Two subscales are calculated: Impression Management and Self-Deceptive Enhancement with a maximum score of 20 for each scale. Internal reliability for the scales are in the highly satisfactory range for the two domains (Cronbach's alpha = 0.75–0.84), and it has been shown to have excellent face, discriminant, and convergent validity (Paulhus, 1988).

Procedure

Participants were recruited to complete the online questionnaire from a link to the survey placed on the website of AVEN (www.asexuality.org). The advertisement was placed on the "Discussion" section of the website–a forum where members of the community post information on current events and engage in dialogue about different topics related to asexuality. The study was described as one aimed at better understanding asexuality.

After linking to a new webpage that briefly described the study, participants viewed a consent form. Upon agreeing to participate, participants were then asked to complete a demographics questionnaire and were assigned a series of female- or male-specific questionnaires. The battery of questionnaires was estimated to take approximately 60 min to complete. The survey was created using the program *Survey Monkey* and was open to recruitment from March–June 2006.

Results

Some participants did not complete all questions and missing items appeared to have occurred randomly throughout the questionnaires (i.e., participants were not more likely to omit questions about sexual behavior). We indicate in each subsection the number of participants on which the following analyses are based.

Sexual Orientation and Relationship Status

There was no significant sex difference on self-reported sexual orientation ($n = 185$), $\chi^2(4) = 7.39$, $p > .05$, with 80% of male participants and 73% of female participants indicating that their sexual orientation was asexual (Table 1). Eleven percent of all participants chose "other" as their sexual orientation and this was indicated as heteroasexual, biromantic asexual, or homoasexual in free response format, and one participant indicated "fetishist" as his sexual orientation. The majority of participants did not feel distressed by their sexual orientation ($n = 185$, 85% men, 75% women), and this did not differ significantly by sex, $\chi^2(1) = 2.39$, $p > .05$.

Women were significantly more likely than men to currently be in a relationship ($n = 184$), $\chi^2(1) = 4.86$, $p = .027$, with the majority of men (92.6%) and women (79.2%) not currently in a relationship. Among those who were currently in a relationship, the relationship length was usually less than one year, and this did not differ by sex $\chi^2(8) = 6.89$, $p > .05$, and 56% of the men and 23% of the women did not describe their relationship as heterosexual or homosexual. Instead, they were described as being biromantic/asexual polyamorous, heteroromantic, or homoromantic, with an emphasis on the romantic and not on the sexual. Among the 70% of participants who had ever been in a relationship ($n = 130$), women had a significantly longer relationship duration than men, even after controlling for annual income, $F(1, 33) = 3.88$, $p = .05$ (Table 1).

Sexual Frequency Measures

Scores on the DSFI Drive subscale were significantly higher for men than women, even after controlling for annual income ($n = 138$), $F(1, 132) = 5.53$, $p = .02$; however, overall scores in both groups were very low (Table 1). Only 29% of the total sample indicated that they recalled when they first became interested in sexual activity and this age did not differ between men and women, $t(52) < 1$. The majority

Table 1 Sexual orientation and sexual behavior characteristics of participants in study 1

Variable	Males ($n = 54$)	Females ($n = 133$)
Self-reported sexual orientation		
Asexual	80%	73%
Heterosexual	9%	12%
Homosexual	3.7%	0%
Bisexual	1.9%	2.3%
Other	5.6%	13%
Current relationship duration[a]		
<1 year	60%	25.8%
1–7 years	40%	41.9%
>7 years	0%	32.3%
Longest relationship duration[b]		
<1 year	62.5%	36.7%
1–5 years	28.1%	37.8%
>5 years	9.4%	28.6%
	M (*SD*)	M (*SD*)
DSFI drive[a]	6.51 (4.2)	3.19 (3.6)
Age of first sexual interest	14 (4.0)	14.4 (5.1)
Age of first sexual intercourse	22.5 (7.3)	19 (5.0)
Ideal frequency of sexual intercourse[c]		
0–2 times/year	85.7%	93.8%
Once/month	2.4%	3.1%
Once/week	7.1%	1%
>once/week	4.8%	2.1%
Masturbation frequency		
Never	7%	42.7%
<once/month	4.7%	27.2%
1–4 times/month	32.6%	23.3%
2–7 times/week	48.8%	6.8%
>once/daily	7%	0%
Frequency of kissing/petting		
Not at all	83.7%	74.8%
<once/month	14%	13.6%
1–4 times/month	2.3%	3.9%
2–7 times/week	0%	5.8%
>once/daily	0%	1.9%
Frequency of fantasy		
Not at all	37.2%	63.1%
<once/month	14%	13.6%
1–4 times/month	16.3%	16.5%
2–7 times/week	30.2%	4.9%
>once/daily	2.3%	1.9%

Note: Response options[a,b] were 1 ≤ 1 year to 9 ≥ 7 years. Response options[c] were 1 ≤ Not at all to 8 ≥ 3 times/day. Scale range[c]: 0–40

(73%) of participants had never engaged in intercourse. Among the 27% who indicated that they had had sexual intercourse, the age of intercourse debut did not differ between men and women, even after controlling for annual income, $F(1, 14) < 1$, and the ideal frequency of sexual intercourse for men and women did not significantly differ, $\chi^2(7) = 8.91, p > .05$ (Table 1).

Despite these low intercourse frequencies, 80% of men and 77% of women reported that they had engaged in masturbation ($n = 146$), with men reporting a significantly greater masturbation frequency than women, even after controlling for annual income, $F(1, 140) = 27.06$, $p < .001$ (Table 1).

There were also significant sex differences in the frequency of kissing/petting ($n = 146$), $t(134.9) = -2.76, p = .007$, and sexual fantasies ($n = 146$), $t(61.7) = 3.21$, $p = .002$, with women reporting significantly more kissing/petting, and men reporting significantly more sexual fantasies. However, both groups reported a low overall frequency of these behaviors (Table 1).

Sexual Response and Distress

FSFI Desire subscale data were available on 115 women whereas subscale totals on all remaining domains were based on 11–53 women given that non-sexually active women were excluded from relevant analyses. Mean scores on each FSFI domain are presented in Table 2. Desire and arousal scores were less than (i.e., more impaired) a comparison group of women with HSDD and sexual arousal disorder, respectively (Wiegel, Meston, & Rosen, 2005). Lubrication and Pain scores were comparable to a control group, and orgasm and satisfaction were similar to those with HSDD.

IIEF Desire subscale data were available for 49 men whereas subscale totals on all remaining domains were based on 9–46 men given that the latter depended on being sexually active. Mean scores on each IIEF domain are presented in Table 3. Scores on the Erectile Functioning domain were in a range comparable to men without erectile dysfunction (Cappelleri, Rosen, Smith, Mishra, & Osterloh, 1999).

Sexual distress ($n = 142$) was below the clinical cut-off point for both men ($M = 5.02$, $SD = 9.8$) and women ($M = 5.86$, $SD = 7.98$), and did not differ significantly by

Table 2 Mean scores on the Female Sexual Function Index (FSFI)

Scale	M	*SD*	Scale range
FSFI-desire[a]	1.43	0.55	1.2–6.0
FSFI-arousal[b]	2.84	1.77	0–6
FSFI-lubrication[c]	4.43	1.73	0–6
FSFI-orgasm[d]	3.59	1.70	0–6
FSFI-satisfaction[e]	3.55	1.03	0.8–6
FSFI-pain[f]	4.0	1.82	0–6

Note: Higher scores denote better sexual response. Data based on $n = 115$[a], $n = 31$[b], $n = 26$[c], $n = 28$[d], $n = 53$[e], $n = 11$[f]

Table 3 Mean scores on the International Index of Erectile Function (IIEF)

Scale	M	*SD*	Scale range
IIEF-erectile function[a]	21.0	6.76	1–30
IIEF-orgasmic function[b]	7.35	2.60	0–10
IIEF-sexual desire[c]	3.02	1.59	2–10
IIEF-intercourse satisfaction[d]	7.60	3.78	0–15
IIEF-overall satisfaction[e]	5.80	2.60	2–10

Note: Higher scores denote better sexual response. Data based on $n = 9^a$, $n = 23^b$, $n = 49^c$, $n = 10^d$, $n = 46^e$

sex, $t(140) < 1$. Only 10% of participants (equal numbers of men and women) reported scores above the clinical cutoff score of 15, signifying significant sexual distress.

Psychiatric Symptoms and Personality

Significantly more women (20.6%) than men (9.3%) self-reported having been diagnosed with a psychiatric disorder ($n = 185$), $\chi^2(1) = 3.44$, $p = .046$. Depressive scores, as measured by the BDI-II, did not significantly differ by sex ($n = 156$), $t(154) < 1$ and were, on average, in the non-clinical range for both men (M = 6.64, $SD = 7.54$) and women (M = 7.18, $SD = 8.20$). Only 2.8% of participants scored in the severe depression range, 3.5% scored in the moderate depression range, and 18.3% scored in the minimal range.

Alexithymia ($n = 150$) was computed with the overall score on the TAS–the mean of which fell below the clinical cut-off score of 61 (M = 46.8, $SD = 11.4$). Men and women did not differ significantly, even after controlling for annual income, $F(1, 143) < 1$, with men scoring 48.1 (*SD*, 13.5) and women scoring 46.9 (*SD*, 10.5). Using the clinical cutoff, 12.2% of participants would be considered alexithymic, 65.5% non-alexithymic, and the remaining 22.3% fell in the intermediate area (with a score between 51 and 60). The scores on the three TAS subscales revealed that there were no significant sex difference on Factor 1, Difficulty identifying feelings, $t(148) < 1$; Factor 2, Difficulty describing feelings, $t(148) < 1$; or Factor 3, Externally-oriented thinking, $t(148) < 1$. The mean scores for men and women were also comparable to those in a community sample of 1,933 individuals (M = 47.3 for men, M = 44.15 for women) (Parker, Taylor, & Bagby, 2003).

On the PAS ($n = 135$), there was no significant sex difference on the PAS total score, even after controlling for annual income, $F(1, 128) < 1$. Those scoring >19 (the clinical cut-off on the PAS total score; 56.3% of the total sample) had each of their domain scores converted into *T* scores and further analyzed. A *T* score ≥75 on any individual domain indicates a high probability of that domain being elevated if the individual was assessed with the full PAI. Among these participants with a total (raw) score ≥19, the most frequently represented subscale was Social Withdrawal (e.g., discomfort in relationships and social detachment), seen in 80% of this group (men *T* score M = 90.1; women *T* score M = 88.5, where a *P* score > 74.9 indicates marked elevation). The remaining PAS subscales were in the moderate range, with Anger Control being the next most common experience reported in 75% of this subgroup, followed by Suicidal thinking in 52%. Alienation, Hostile Control, Negative Affect, Health Problems, and Psychotic Features each had *T* scores that just met the clinical cut-off for moderate symptoms requiring further investigation. Across all PAS subscales, there was only a significant sex difference for Negative Affect, $t(137) = -2.36$, $p = .02$, where women had higher Negative Affect scores than men.

Interpersonal problems ($n = 146$), as measured by the IIP, are significant in cases of a *T* score greater than 60, and are markedly significant in cases of a *T* score greater than 70. The subscales with clinically elevated domains were: Cold/Distant for men ($T = 61.16$), and Social Inhibition for men ($T = 63.0$) and women ($T = 63.25$). All other IIP subscales fell in the non-clinical range.

Social Desirability

Men and women significantly differed on Impression Management on the BIDR ($n = 146$), even after controlling for annual income, $F(1, 140) = 4.19, p < .05$, such that men had significantly higher scores (M = 9.4, $SD = 3.4$) than women (M = 7.9, $SD = 3.2$). The mean score for men fell in the range of being possibly invalid, suggesting that men had a higher need for impression management. BIDR Self-Deceptive Enhancement scores were low and did not differ significantly by sex, even after controlling for annual income, $F(1, 140) < 1$. The range on this scale is 0–20 and scores for men and women fell in the non-clinical range, suggesting a lack of socially desirably responding.

Sexual Function Correlates

Pearson product moment correlations were computed between FSFI subscale scores and the FSDS (sexual distress), BDI-II, TAS, PAS, IIP, and BIDR for women. Interestingly, there was a significant positive correlation between sexual distress and desire, such that asexual women experienced higher levels of distress with increasing levels of sexual desire (see Table 4). There were also significant negative correlations between sexual distress and sexual satisfaction and pain such that women experienced less distress with higher sexual satisfaction and lower pain.

FSFI Desire was correlated positively with IIP Control, $r(98) = 0.31$, $p = .002$, negatively with BIDR Self-Deceptive Enhancement, $r(103) = -0.32$, $p = .001$, and

Table 4 Pearson product-moment correlations between sexual response scores in women (Female Sexual Function Index; FSFI) and Men (International Index of Erectile Function; IIEF) with sexual distress

Questionnaire	Subscale	Sexual distress (r)
FSFI	Desire***	0.35
	Arousal	0.12
	Lubrication	−0.19
	Orgasm	−0.16
	Satisfaction**	−0.40
	Pain***	−0.94
IIEF	Desire**	0.40
	Erectile function	−0.56
	Orgasmic function	0.18
	Intercourse satisfaction	−0.35
	Overall satisfaction*	−0.39

* $p < .05$; ** $p < .01$; *** $p < .001$

positively with PAS Negative Affect, $r(98) = 0.23$, $p = .022$. As sexual desire increased, IIPs and negative affect increased, and self-deceptive enhancement decreased.

FSFI-Arousal correlated marginally significantly with depression, $r(30) = 0.35$, $p = .05$, and negatively with the TAS, $r(29) = -.40$, $p = .03$, such that as sexual arousal increased, depression increased and alexithymia decreased. FSFI Lubrication correlated negatively with PAS Hostile Control, $r(20) = -0.54$, $p = .014$, such that hostile control decreased as lubrication increased.

FSFI Pain correlated negatively with PAS Suicidal Thinking, $r(8) = -0.76$, $p = .029$, so that as genital pain increased (i.e., lower scores), suicidal thinking increased. PAS Alienation was correlated positively with FSFI Orgasm, $r(22) = 0.55$, $p = .008$, so that as orgasmic function increased, alienation also increased. Finally, FSFI Satisfaction was correlated negatively with PAS Alcohol Problems, $r(44) = -0.40$, $p = .007$, such that alcohol problems increased as sexual satisfaction decreased.

For men, Pearson product moment correlations were computed between IIEF subscale scores (erectile response) and the MSDS (sexual distress), BDI-II, TAS, PAS, IIP, and BIDR. Similar to what was found in women, there was a significant positive correlation between sexual distress and desire, indicating higher levels of sexual distress with increasing reports of sexual desire. There was also a significant negative correlation between IIEF Overall Satisfaction and MSDS, such that distress increased as overall sexual satisfaction decreased. None of the other IIEF subscales significantly correlated with sexual distress (see Table 4).

Neither depression (BDI-II) nor alexithymia (TAS) correlated with any IIEF subscale. PAS Acting Out was correlated negatively Orgasmic function, $r(19) = -0.56$, $p = .014$, such that more acting out behavior was associated with poorer orgasmic function. PAS Psychotic Features was significantly negatively correlated with IIEF Erectile Function, $r(7) = -0.77$, $p = .043$ such that poorer erectile function was associated with more Psychotic Features. PAS Alienation was correlated negatively with IIEF Erectile Function, $r(7) = -0.86$, $p = .012$, and with IIEF Orgasmic Function, $r(19) = -0.51$, $p = .027$, such that higher alienation was associated with less erectile and orgasmic function. None of the IIPs subscales correlated with any of the IIEF subscales. BIDR Impression Management and IIEF Sexual Desire were significantly negatively correlated, $r(43) = -0.36$, $p = .019$, such that as impression management increased sexual desire decreased.

Discussion

Participants recruited from AVEN completed on-line questionnaires assessing sexual behavior and response, sexual distress, psychopathology, personality, and socially desirable responding. Interestingly, only 80% of the men and 73% of the women selected "asexual" when presented with a forced-choice question about their sexual orientation. This is despite the fact that we recruited from AVEN, a web-community devoted to asexuals, and that participants had to personally endorse the asexual label before being routed to questionnaires. An examination of their responses to a question about the nature of their relationship–for those asexual individuals who were currently in a relationship–may help to interpret why not all participants selected asexual as their orientation. The majority described their relationships with a focus on the romantic (e.g., heteroromantic) as opposed to the sexual (e.g., heterosexual). Thus, the 11% who did not endorse asexual as their label may have been deterred by the focus on "sexual" in asexual, and preferred to conceptualize themselves and their relationships as a romantic orientation. Because this finding suggests that the language used to self-identify is important, and that asexuals may prefer to conceptualize their relationships in romantic as opposed to sexual terms, future research should explore the labels and meanings that asexual individuals give to themselves and their relationships. Of note, the majority of the sample denied being distressed about their asexual orientation.

In assessing the age of sexual interest and intercourse debut, many individuals indicated that they could not recall the onset of sexual interests. This lack of recollection of first sexual interests and experiences might be important if one considers that puberty for humans marks a significant developmental hallmark where the initiation of sexual feelings and behaviors is an important aspect (Udry, 1988). This suggests, perhaps, a developmental trajectory whereby the lack of sexual interests in early adulthood may set the stage for later lack of sexual desire or excitement. It is noteworthy

that 73% of the sample had never engaged in sexual intercourse and this replicates the findings of Bogaert (2004). Moreover, that one-third of a sample of individuals with a mean age of 30 has never been in a relationship is noteworthy. According to Bowlby's (1969) attachment theory, there exists a universal human tendency to seek closeness to another person and to feel secure when that person is present. Problems in child-parent attachment may lead to problems in how the person later develops intimate relationships as an adult. Although speculative, it is possible that asexuals may have been avoidant as children leading to insecure attachment and to view relationships as awkward and uncomfortable as adults.

Among the 27% of asexuals in the present sample who had engaged in sexual intercourse, they maintained that they lacked sexual attractions despite engaging in sexual behavior. If one adopts the definition of asexuality offered by Rothblum and Brehony (1993), focusing on an absence of sexual activity, this subgroup may have been misclassified as being sexual. The fact that 25% of the sample engaged in intercourse despite affirming that they had no sexual attraction whatsoever is puzzling, and one might question their motivations for having intercourse. However, in light of recent findings in which young adults provided a variety of reasons for engaging in sexual intercourse, including several that appear unrelated to sexual attraction (e.g., it was a favor to someone, I felt sorry for the person, I wanted to get out of doing something, I wanted to manipulate him/her into doing something for me) and many reasons related to the emotional connection with the partner (e.g., I wanted to express my love for the person, I wanted to feel connected to the person) (Meston & Buss, 2007), the fact that asexuals could continue to engage in intercourse despite a lack of sexual attraction may well be within the normal experience. In addition, masturbation frequencies were comparable to those reported in a recent British national probability study of sexual individuals (Gerressu, Mercer, Graham, Willings, & Johnson, 2008), and between 73 and 80% of women and men, respectively, had engaged in masturbation. The average frequency was a few times/week for men, and once/month for women. Similar rates of asexual women in our study (approximately 30%) and women in the probability study of sexuals (Gerressu et al., 2008) had never engaged in masturbation. Sexual intercourse and masturbation that are stripped of sexual attraction might, therefore, be motivated by non-sexual reasons. For example, is masturbation a way of reducing tension or getting to sleep? Is sexual intercourse without attraction motivated by a fear of a partner's negative backlash or by the belief that sex is simply something one does as part of a "normal" relationship, even if one does not enjoy it?

We examined scores on the various aspects of sexual response with the FSFI in women and IIEF in men. Because the majority of sexual function domains depend on being sexually active (e.g., Meyer-Bahlburg & Dolezal, 2007), calculations on these subscales were based only on the subgroup of asexuals who had been sexually active in the past 4 weeks. Scores on the desire, arousal, orgasm, and satisfaction domains were in the range comparable to women with sexual desire and arousal disorders (Wiegel et al., 2005), with scores on the desire domain being the lowest. For men, whereas scores on the desire domain were low, erectile functioning was similar to a community sample of men without erectile difficulties (Cappelleri et al., 1999).

Despite these arguably low scores for sexual response, the majority (90%) of the sample denied having sexual distress and only 10% fell into the clinical range on the FSDS and MSDS. Because the FSDS, which we adapted for men in the current study, had been developed and validated on a sample of sexual individuals, the extent to which it is a valid measure of sexual distress for asexuals is unknown. Also, because distress over having an asexual orientation was low in the majority of individuals, this suggests that distress, if any, might stem from the interpersonal consequences/aspects of asexuality, rather than being related to personal consequences. Whereas it has been speculated that asexuality might overlap with sexual desire disorder (Prause & Graham, 2007), our findings support the speculation by Bogaert (2006) that asexuality and desire disorder can be differentiated on the basis that the person with low desire experiences distress whereas the asexual does not. Thus, because the asexual does not have a sexual disorder per se the implication is that there is less stigma.

To explore the correlation of sexual response variables on other dependent variables in this study, a series of Pearson product-moment correlations were conducted separately by sex. For both women and men, sexual distress and sexual desire were positively correlated such that distress increased with increasing desire scores. These paradoxical correlations suggest that the presence of a desire response is distressing for the asexual individual. Desire might be interpreted negatively, since it may be experienced as the mind defying one's true intentions. On the other hand, sexual satisfaction and distress were negatively correlated for both men and women indicating that distress lessened as sexual satisfaction improved. Because the sexual satisfaction domains were not dependent on sexual activity per se, it is possible to have high satisfaction scores despite low desire (or arousal, orgasm, etc.) scores. It is, therefore, reasonable that distress and satisfaction correlate since they might also be viewed as polar ends of the same dimension.

Regarding responses to the question of participants ever having been diagnosed with an Axis I psychiatric disorder, about half as many men as women indicated so (20.6% for women and 9.3% for men); however, these rates are not significantly different from national base rates for psychiatric illness (Kessler et al., 2005). Depression was in the low and

non-clinical range for men and women, and alexithymia scores were below the clinical cut-off and comparable to mean scores from a large community sample, even though the sexes differed significantly on the "difficulty describing feelings" subscale. The brief personality measure indicated that 56.3% of the sample had an elevated raw total score, so their individual domain scores were explored further. Among this subgroup, social withdrawal was the most notable domain, with 80% of this subgroup scoring in the clinical range. This suggests that if the full version of the PAI (Morey, 1991b) were administered, scores reflecting a socially inhibited personality would likely be apparent in at least half of asexual individuals. Among the eight subscales of the Inventory of IIPs, only the Socially Inhibited domain was elevated for both men and women in the moderate range. In addition, men only had significantly elevated scores on the Cold/Distant domain of the IIP. The PAS and IIP data together support possible categorization to Cluster A of the personality disorders. In particular, Schizoid Personality Disorder, characterized by emotional coldness, limited capacity to express warm feelings towards others, and lacking desire for close, confiding relationships (American Psychiatric Association, 2000) might be related to asexuality. Combined with the finding that one-third of the sample had never engaged in a relationship, the findings suggest atypical social functioning which appears to be more widespread than just related to sexual relationships. As noted, problems in early attachment may have stemmed from having an avoidant childhood temperament, thus perpetuating distrust and awkwardness in later social relationships. This may have become integrated into the individual's personality and mode of relating to others rather than being expressed as a symptom of an Axis I disorder. This also raises the possibility that asexuality is a byproduct of such atypical social function rather than a cause of it. A more detailed qualitative exploration between the potential link between social withdrawal and asexuality was the aim of Study 2.

The correlational findings between sexual response scores and measures of personality and psychopathology were very interesting. For nearly all significant correlations in both men and women, there was a general pattern of more sexual response difficulties with more personality and psychologic impairment (e.g., in women: self-deceptive enhancement, alexithymia, hostile control, suicidal thinking, alcohol use; in men: acting out, psychotic features, alienation, and impression management). This supports the finding among non-asexuals that sexual dysfunction and psychopathology are significantly related (Zemishlany & Weizman, 2008). However, for women, there was a paradoxical positive correlation between depression and arousal, and between alienation and orgasmic function. It is possible that with increased alienation and social isolation (perhaps symptomatic of depression), solo-sexual activities may increase (Frohlich & Meston, 2002), leading to higher rates of arousal and orgasmic function.

Because of the possibility that asexual participants may have distorted their answers to give a more positive impression, particularly in light of recent media attention that has, in some cases, taken a critical stance towards asexuality (e.g., the Montel Williams show in 2006), we explored scores on a measure of socially desirable responding (Paulhus, 1988). Scores on both the Impression Management and Self-Deceptive Enhancement subscales of the BIDR were not elevated for men and women, suggesting that social desirability did not influence their questionnaire scores.

Unsolicited feedback from some of the participants to the AVEN discussion board was forwarded by the founder of AVEN to the researchers. Some of these reports indicated that participants felt compelled to underrate their psychiatric symptoms in hopes of minimizing any relationship between asexuality and psychopathology that the researchers may have hypothesized. Moreover, other unsolicited feedback suggested that participants felt that many of the questionnaires were more appropriate for individuals with sexual attractions and were, therefore, irrelevant for an asexual person. This feedback, along with the number of new research questions generated from Study 1, prompted the design of Study 2.

Study 2

The goal of Study 2 was to explore some of the findings from Study 1 in more detail by using a qualitative design. Increasingly, sex researchers are integrating qualitative with quantitative designs (e.g., Graham, Sanders, Milhausen, & McBride, 2004; Prause & Graham, 2007; Reece, Milhausen, & Perera, 2006; Tolman & Szalacha, 1999), as this method may lead to greater knowledge of poorly understood constructs (Tolman & Szalacha, 1999). In our study, a subsequent qualitative phase allowed us to ask the participants themselves for clarity on some of the more puzzling findings from Study 1. For example, that a sizable proportion of the sample indicated "other" instead of "asexual" as their sexual orientation, and described their relationships as hetero- (or homo or bi) romantic suggests that the ways in which asexuals conceptualize relationships has a bearing on their own sexual identity. Moreover, that sexual distress was a feature of asexuality in only a minority of the sample despite rather low ratings of sexual desire is intriguing and indicates that the threshold at which a low sexual response becomes distressing may be different for asexuals versus sexuals. Although Prause and Graham (2007) conceptualized asexuals as having low sexual excitation, masturbation frequency was manifest among our sample, and did not differ markedly from recent normative data (Gerressu et al., 2008) suggesting that the

motivations for masturbation may not stem from an intrinsic desire or sexual excitement. Finally, that social inhibition and withdrawal, both symptoms characteristic of the Cluster A Personality Disorders (American Psychiatric Association, 2000), were elevated among asexuals deserves greater exploration. A qualitative methodology allowed us to probe each of these assertions in more detail, and permitted us to explore unifying themes emerging from what appeared to be, in Study 1, a rather heterogeneous group.

Method

Participants

Participants from Study 1 were recruited for Study 2. They were informed about the procedures following their participation in the web-based survey, and were asked to leave their e-mail address with their completed questionnaires to be contacted by a member of the research team. We arbitrarily selected 15 as our sample size, and the first 15 individuals who were contacted via e-mail and agreed to participate in Study 2 formed the sample. Following qualitative analyses, we were prepared to contact additional participants who expressed interest in being interviewed; however, we reached saturation of themes (Sandelowski, 1995) with these 15 participants and therefore did not find it necessarily to continue recruitment. Participants were 4 men and 11 women with an age range of 20–57, and lived in various countries: United States, Germany, England, Canada, and New Zealand.

Procedure

Interview dates and times were scheduled via e-mail by the study assistant (K.R.), who also conducted all interviews via telephone. A list of pre-established questions was asked of all participants, and based on the replies and experiences shared by participants, follow-up questions were probed. Participants' results from their questionnaires were not made known to the interviewer. Individuals were told that the purpose of the interview was to gain a better understanding of the experiences of asexuals. Asexuals were invited to describe their own sexuality in whatever words they chose. They were asked to provide examples of sexual and non-sexual experiences or behaviors to exemplify their descriptions and were asked the following probing questions: Would you consider asexuality to be a sexual orientation? What are your beliefs about the associations between asexuality and low sexual desire? What is the link between asexuality and personal distress for you? Is there a link between religion and your asexuality? Describe your fears associated with sexuality? What are your feelings about yours and others' genitals?

The interview lasted 30–90 min and participants were paid a $50 honorarium. The telephone interview was digitally recorded and later transcribed by a professional transcription service.

Data Analyses

A Phenomenological approach was undertaken to explore the experience of asexuality as shared by participants. This approach focuses on describing the essence of phenomena, as described in the everyday or "lived experiences" of the participant (Burch, 1990). What differentiates the phenomenological approach from other qualitative approaches is the premise that knowledge and meaning are embedded in our everyday experiences. Content analyses (van Manen, 1990) were used to explore the interview material following professional transcription of the data. A team of three investigators, who were not involved in conducting the interviews, initially read each interview and noted general impressions of the transcripts in the margins. A meeting of the three raters then took place in order to discuss the preliminary reactions and formulate a tentative list of themes. The raters then used the 10 themes to re-read the interview transcripts and to code passages of text that directly corresponded to those themes. Raters were mindful of themes that were not readily apparent in the transcripts, and documented if they believed there were additional themes, not previously discussed, present in any particular transcript that deserved more systematic exploration. A third meeting of the reviewers was used to review passages of text corresponding to each of the themes and to resolve discrepancies. Inter-coder reliability was established informally by discussing discrepancies and resolving them as a team in line with the guidelines for analysis developed for each theme.

Results and Discussion

A total of 10 topics emerged from the analyses as being the most meaningful themes. Each of these will be discussed in turn.

Theme 1: Definition of Asexuality

There was a consistent theme to how asexuals defined asexuality. A "lack of sexual attraction" was evident in nearly all interviews, and individuals distinguished this lack of attraction from other aspects of sexual response which may still have been present, such as sexual desire. If sexual desire or arousal were present, asexuals argued that they were not "directed" at anyone. This persistent or lifelong lack of sexual attraction was differentiated from the normative decline in sexual attraction that takes place with relationship duration:

> I have a sexual drive that comes up regularly through my hormonal cycle, before I menstruate, there are times when I feel aroused, but it is not directed towards any individual. (Participant 8)

Another recurrent theme around definitions of asexuality was that there was a lack of anticipation leading up to any sexual experiences, and such a lack of anticipation, they argued, is what differentiated sexuals from asexuals. Notably, there was still excitement and anticipation for other (non-sexual) activities; thus, this did not appear to be a general blunting of all excitement:

> I think sexuals have a lot of anticipation and pleasure leading up to the sexual experience. I don't have any of that. I could do without it. Even though it is very pleasurable and exciting while I am doing it, I have absolutely no anticipation for it at all. I have no interest or desire that would lead me towards that in the way that I do towards other activities that I enjoy. (Participant 8)

> I could be attracted to someone. I can…you know, think they're good looking and think they're interesting and want to spend time with them and get to know them better. But to me it's never, oh, yeah, I hope we end up in bed. (Participant 2)

Prause and Graham (2007) argued that the lack of sexual attraction was related neither to a fear of sexual activity nor to a fear of forced sexual activity. This was replicated in our findings where individuals reported enjoying and looking forward to romantic contact, but had no interest in, rather than avoiding, sexual activity.

Theme 2: Feeling Different

A sense that one has always been different than others was also apparent throughout most of the interviews. Several talked about puberty and how their experiences contrasted with their friends in that they did not experience intense sexual urges or interests, and they could not understand "what the fuss was about":

> I always knew that I was different and I always knew that I didn't have that interest like my friends had…I always had this babysitting job and I though it was great because they would always give me a huge tip, but then my friends would go, "Oh we went to this really cool party and everybody was making out and it was so much fun and you should come next year." I would make a point of getting a babysitting job because there was no way I wanted to be in that kind of environment because I…I just didn't want to. (Participant 3)

Some elaborated on the theme of feeling different by noting that although they could not relate to their peers' sexual interests, they were unaware at the time that they may be asexual. Many added that once they discovered AVEN, and the large community of other asexuals, they felt that the asexual label explained them and their experiences completely. There was also strong agreement that asexuality was a sexual orientation rooted in biology. Some felt that if the biologic underpinnings of asexuality could be proven, then stigma associated with asexuality would lessen.

Theme 3: Distinguishing Romantic from Asexual Relationships

It was not the case that asexuals did not desire any kind of relationship, and there was a careful distinction between romantic versus sexual aspects to relationships. Several reported wanting the closeness, companionship, intellectual, and emotional connection that comes from romantic relationships, and in this regard, they were similar to sexual individuals who desire closeness and intimacy. Many also discussed hopes of marrying one day, of having a "life partner," and possibly of having children.

> Basically, I just enjoy being close to someone and spending time with them and doing things that make them happy. Not sexually….. Well, like I like being touched and held but I just don't really want to do anything sexual if that makes any sense. Like I desire to be held and like to cuddle and stuff but not to have sex. (Participant 1)

The desire for a romantic relationship was not universal in our sample. Some indicated that they desired neither sexual nor romantic interactions. Among those who did desire a romantic relationship, they defined those relationships according to romantic as opposed to sexual attractions (e.g., hetero-romantic instead of hetero-sexual).

> Everyone's definition of sexual activity is somewhat different but I mean asexual people just aren't interested in intercourse and there are all different levels of how far they'll go…there are some asexuals who are aromantic and they don't want anyone to touch them and they hate being touched at all….in asexuality there is the same types of romances there is with sexuality. There's aromantic, heteroromantic, biromantic, and homoromantic and their sexualities could differ and what they desire could differ. It just depends on the person. (Participant 1)

Theme 4: Asexuality is not Another Disorder "In Disguise"

Many opposed the notion that asexuality was a symptom or component of another disorder, including HSDD. Because

asexuals lack interest in sexual activity, and the defining feature of HSDD is a distressing lack of desire (American Psychiatric Association, 2000), Bogaert (2006) noted that there might be a subgroup of asexuals who are at the lower polar end of the desire continuum. He also noted that there is likely another subgroup of asexuals who have normal, or even high, desire, despite the lack of sexual attraction (Bogaert, 2006). This hypothesis was presented to the current sample who clarified that they felt an important difference between them and that those with HSDD is that the latter still have a sexual attraction for others, whereas asexuals do not. In addition, as borne out in our quantitative data, levels of sexual distress for the majority of participants fell below clinical cut-off scores, and this was supported in the interviews.

> I've never had the interest and so, even if today you could say, "Oh here…here's a pill that will fix you"…no, that's okay, thanks. (Participant 3)

> I know there is a spectrum of asexuality, so there are people who do experience some sexual attraction, but for me, low sexual desire says that I think there is a problem with who I am, I want to desire sex, I know what that feels like some of the time to have some kind of desire, and now I am not experiencing any desire, so I see this as a disorder. Whereas for me, I have never felt any kind of sexual attraction, so I do not miss what I do not know. (Participant 9)

There was resistance to labeling asexuality as any type of disorder because of the emphasis on the pathological aspects of the term. Instead, the sentiment was that if asexuality were more accurately considered as an orientation, and not as a disorder, that this would reduce stigma and enhance non-judgmental research into asexuality.

> Everyone in the asexual community wants to spread the message that it's [asexuality] not a disorder and it's not something that's a problem and needs to be fixed and that's the big thing, the reason that we're trying to get the word out about it as an orientation because if it's not considered an orientation then there must be a problem because you have to have an orientation. (Participant 1)

Theme 5: Overlap with Schizoid Personality

We found in Study 1 that social withdrawal featured strongly among a subset of the sample. Given that the Personality Disorders considered within Cluster A of the DSM-IV-TR are characterized by social withdrawal, we probed this further throughout the interviews. Specifically, participants were asked about the extent to which they could relate to some of the features of Schizoid Personality Disorder, which include having little interest in sexual experiences, emotional coldness, limited capacity to express warm feelings towards others, and lacking desire for close, confiding relationships. Some asexuals noted that several of the members of AVEN were introverts, and therefore fit the descriptions of the Cluster A personality disorders. In our probing, seven of the 15 participants felt that they personally met criteria for Schizoid Personality Disorder:

> To, at least a moderate extent, I pretty much match all of them (referring to Schizoid criteria)…although I've never been formally diagnosed and probably never will…I am pretty sure that if I did walk in, they would probably diagnose me with Schizoid Personality Disorder. (Participant 11)

Interestingly, whereas we did not specifically solicit the information, a number of participants suggested that many asexuals might also fit the criteria for Asperger's Disorder, which is characterized by having more pervasive problems with social interactions (as well as stereotyped patterns of behaviors). One participant noted that this was discussed widely on the AVEN discussion board, and that researchers might turn there for preliminary ideas to fuel research on the topic. As we did not probe this information from all participants, this possible link requires further exploration.

Theme 6: Motivations for Masturbation

We specifically probed experiences with masturbation and the rationale for engaging in this behavior given that some of the negative media attention to asexuality has focused there. Specifically, the criticism has been that asexuality is an inappropriate label for an individual who continues to engage in intentional and planned sexual activity. A sizeable proportion of the interviewees (but by no means all) admitted to masturbating and this was proportionately higher in men than in women (as is the case in the general population; Oliver & Hyde, 1993). There was a strong sentiment that "sex with oneself" was qualitatively different from sex with another in that the former can exist without sexual attraction. Furthermore, in masturbation, the motivation stemmed more from physical/physiologic needs rather than from emotional or relational reasons:

> Even though they (an asexual) might want to clean out the plumbing once in a while, they don't have any interest in doing it with someone else. …so that would…you know, that would qualify (as an asexual). (Participant 4)

At least a third of participants had great discomfort in talking about masturbation and one individual elected not to talk about his motivations for masturbation. This suggests that just as there may be confusion in the non-asexual

community about why an asexual might desire masturbation, there may also be embarrassment, guilt, shame, or other negative emotions associated with reasons for masturbation, or associated with the consequences of masturbating. One might posit that such reluctance around talking about masturbation might be even more pronounced than in the sexual person given that an open admission of masturbatory activity could threaten one's asexual identity. Although this possibility was not probed in the current study, it deserves greater exploration.

Theme 7: Technical Language

In discussing their experiences with masturbation, it was highly evident that the language used to describe masturbation, sexual intercourse, and their bodies was void of any pleasurable or sexual affect. Instead, these experiences were discussed in more of a technical, emotionally-stripped manner. This was the case when individuals were discussing emotional changes at puberty, sexual arousal, and feelings for their genitals, among other sexual domains. For example:

> Puberty, well uh, you know I had the hormones, uh stuff starting working there but I really didn't have anything, nothing to focus it on. I did you know test the equipment so to say and everything works fine, pleasurable and all it's just not actually attracted to anything. (Participant 2)

> Yeah, I'd say I was…well I would say I was lubricated I guess…but enough? It's hard to know. Um…you know, I mean like the plumbing works, let's say, if you want an expression…… Well, I don't know if I'd call it aroused. I mean, just because I'm lubricated doesn't necessarily mean I'm aroused. (Participant 13)

In reference to their feelings about their genitals, several stated that "they are just there." For some with artistic backgrounds, they stated being able to appreciate the artistic value of the genitals, but that this was not sexual. Most noted that the genitals neither "bothered" nor "excited" them, and disgust with genitals did not play a role in their asexuality. Notably, these emotionally-bare descriptions were specific to discussing sexual activity, and not to other aspects of the individual's lives or behaviors. Thus, corroborating our findings from Study 1, it did not appear as though asexuals were, in general, alexithymic, or void of the ability to experience emotions.

Theme 8: Negotiating Boundaries in Relationships

In Study 1, 26% of women but only 9% of men were currently in a relationship; however, 70% had reported ever previously being in relationships. Some asexuals had been/were currently in relationships with another asexual. In such cases, there was little need for negotiating sexual activity since both partners were presumably uninterested in sex. Among those individuals paired with an asexual partner, participants talked about the advantage of not having to contend with "the messiness" of relationships. They reported being able to be naked and physically close to their partners without the pressure or expectation that it would lead to intercourse. Among those couples where a partner was sexual, the asexuals talked about having to negotiate what types of sexual activities they were willing to take part in, the frequency, and the boundaries around the relationship in the event that the asexual did not engage in any sexual activity with his/her sexual partner.

> You know, the only reason I do it (intercourse) is to make the other person happy. And so, we were in a relationship and you know, he wanted to do it and we had been dating for a while and you know, I was in love or whatever and I thought we'll be together forever. So um…yeah, so we kind of planned it and that's…yeah…I mean it wasn't…I mean the way he was talking about it, oh it's so great and you're going to love it, blah, blah, blah, and then okay…you know, I believed him…..(Participant 14)

Although asexuals rejected the notion that they were engaging in nonconsensual sexual activity with their sexual partners, their consensual sexual activity was unwanted, similar to what has been described for heterosexual dating samples in which one study found the prevalence of such unwanted but consensual sexual activity to take place in 38% of the sample (e.g., O'Sullivan & Allgeier, 1998). Sexual ambivalence (i.e., exploring the many dimensions of wanting and not wanting sex; Muehlenhard & Peterson, 2005) has been described among heterosexual couples and is highly relevant in cases of sexual-asexual pairings. Among such dyads, the asexual participants added that sexual activity did not help them to feel closer to their partners in the way that their (sexual) partners described. This was captured by the following quote from a woman:

> (My boyfriend said to me) "Oh gosh, I would like to crawl into you," and I said, "Wow, I would like to crawl into you too!" And then he said that maybe that's what sexual feelings are, when I want to have sex with another person–that is the ultimate "crawling into". And then I said, "Well, aren't sexuals then disappointed when they find out that they have gone through all of this trouble to crawl into a person and then finally they have just had sex and are still not in the other person? (Participant 10)

At least a few of the participants who engaged in sexual activity reported having to focus on something else while

being sexual and this made the asexual person experience only the physical stimulation aspects of sex, stripped of the emotional intimacy. One woman discussed having mythical fantasies during intercourse that served as a way to take her mind away from the act of sex. Another asexual woman who spoke about sexual activity she engaged in with her sexual partner described it as curiosity not triggered by anything even remotely sexual. The technical, emotionally-void language was also highly apparent in her description:

> Well, because he is sexual and I am asexual, we have tried to see what our body parts do to each other, trying to find out what body positions are most appropriate for us, or what kind of feelings it brings about when we touch that body part…while touching my genitals doesn't do anything to me either, but I like very much them being very close to his, when the whole body is connected with the other body. (Participant 10)

Infidelity was a feature of asexual relationships, however, the unfaithfulness was discussed as being focused more on having romantic attractions with someone else as opposed to having sexual attractions and behaviors with another. Some of the participants indicated that if a sexual partner wished to (or needed to) have sexual activity, the asexual would be accepting of that person seeking it outside of the relationship, on the condition that the sexual relationship did not become emotional. There was a great deal of variability across the participants in the extent to which they might be bothered by a partner's sex with another person outside the relationship:

> Basically in a sexual relationship cheating on someone is if the person has sex with someone else. In a purely romantic relationship cheating would just be like if I have a boyfriend who considers himself in love with another girl and like he goes and sees her and kisses her and stuff and cuddles with her and tells her he loves her. (Participant 5)

Theme 9: Religion

It has been speculated previously that religious prohibitions against sexual activity might underlie the experiences of some asexuals. In other words, is the expressed resistance against sexual attraction and sexual activity a manifestation of moral or religious feelings about sexuality? We probed this among our current sample and found, contrary to our predictions, a disproportionately high number of atheists in our sample. When questioned about this link between asexuality and atheism, one individual explained it by:

> I think it (atheism and asexuality) might be related. I do think that because asexuals are forced to realize that they are different and they know they are different than everybody else, they have to think about something that is perfectly natural for everybody else, I think it does sort of encourage a nonconformist streak in people to where if they have any tendencies whatsoever to be skeptical, then they are going to go that way… And a lot of religions place a lot of value on marriage and appropriate gender roles to include sex, so you can imagine somebody growing up asexual who doesn't want to have a relationship or who doesn't want to get married or doesn't want to be fruitful and multiply…It would be easier for them to reject the religion and become atheist. (Participant 14)

> On the web site as well as there was an informal poll and there seemed to be a quite a lot of atheist people. (Participant 6)

Theme 10: A Need to Educate and Destigmatize

There has recently been a vast amount of media attention focused on asexuality, and in part, this stems from a strong desire among asexuals to educate the public about what is asexuality. Because some of the recent media attention has been negative, members of the AVEN community see it as part of the "visibility and education" efforts of AVEN to liaise with researchers to conduct scientific trials on asexuality, in particular if those studies have the result of reducing stigma.

> Well, I think that it's (asexuality) really not perceived and that's the problem and that's why like we need the (AVEN) message board and all the news reports and stuff because nobody or very few people know that it exists or have heard of it. (Participant 9)

AVEN also was viewed as having the function of being a place to brainstorm on theories of asexuality and propose ideas for future study. AVEN members have even initiated a separate asexuality list-serv group for sexuality researchers. Some of the participants indicated that they encouraged researchers to use the AVEN discussion board as fodder for future studies. Another educational function of the AVEN website was to provide information and a sense of community for individuals who felt different, but who did not know enough about asexuality to feel like he/she could identify with it. Some talked about a great sense of relief upon discovering AVEN, particularly in finding that many others had also experienced a non-distressing lack of sexual attraction like them.

> I am very keen on getting the word out because had I known years ago my life could have been so different. I always knew that I was different and I always knew that I didn't have that interest like my friends had. But I never

heard of asexuality. I didn't realize that I could say, hey, I'm asexual, you know…go away. (Participant 6)

Conclusion

The results from our two studies supported the definition, which characterized asexuality as a lack of sexual attraction, as proposed by Bogaert (2004, 2006). The definition of asexuality should not depend upon (absence of) sexual activity given that some asexuals continued to engage in sexual intercourse and many masturbated. The position held by AVEN–that each individual experiences and expresses sexual desire, arousal, and behavior somewhat differently–was borne out in the current studies where there was a great deal of variability in sexual response and behavior.

Our study also replicated and expanded upon several of the findings from Prause and Graham (2007) and provided an empirical test of some of the conceptual points raised by Bogaert (2006). For example, asexuality did not appear to be a fear-mediated construct, and the lack of sexual activity was not related to avoidance or disgust when envisaging the genitals. There was also a great deal of heterogeneity in the sexual behaviors engaged in by our sample. Some had rather frequent sexual intercourse and others had never had sexual intercourse. There was a general sentiment that since one could have sex without love, why could one not also have love without sex? Among those who were currently sexually active, many talked about motivations for intercourse stemming from the partner rather than from the asexual's own desires. Some also talked about wanting to preserve some sexual activities in an effort to "seem normal." Among those in relationships with a sexual person, the theme of negotiating the boundaries within that relationship was apparent. Communication was an essential element in the early stages of asexual-sexual partnerships to establish the rules around touching and sexual activity. Finally, there was a very apparent motivation to educate the public, via media outlets, participating in research, and through AVEN, to bring awareness about asexuality and to reduce stigma to those who are asexual.

Several of the transcripts also supported the finding by Prause and Graham (2007) that asexuals have low levels of sexual arousability or excitement. Many discussed a lack of anticipation of sexual activity and this bears some resemblance to women described by Basson (2000, 2002) who lack sufficient reasons or incentives for responding to a partner's sexual advances or for initiating sexual activity on their own. It may be possible that one subgroup of asexuals represents those at the low polar end of the sexual desire spectrum, and that encouraging them to deliberately anticipate sexual activity may bring them above the threshold to a point where the distress prompts them to seek attention. The border between HSDD and asexuality is unclear. However, it is possible that the woman with lifelong lack of sexual attractions and interests and who is unbothered by her sexual status may better fit the asexuality label, whereas the woman initially labeled as asexual who, after declaring distress linked with her lack of interests, and also experiences sexual attractions, better fits the sexual dysfunction category of HSDD, and might therefore seek appropriate treatment. Only a fraction of women who report sexual problems, across all domains of sexual response, experience concomitant distress (Bancroft, Loftus, & Long, 2003; King, Holt, & Nazareth, 2007), and interestingly, among women who did not have any sexual problems, over 10% did experience marked distress about their relationship or marked distress about their own sexuality (Bancroft et al., 2003). Predictors of distress in their study were: negative mental state, overall physical health, subjective response during sexual activity (including pleasure, feeling emotionally close), impaired physical response, thinking about sex with interest, and college education (Bancroft et al., 2003). Just as a more thorough examination of the construct of distress may be integral to determining whether a sexual problem is a dysfunction, distress may also be at the heart of differentiating a problematic lack of sexual desire (HSDD) from a non-distressing lack of attraction (asexuality). The validity of this distinction requires empirical testing.

Seventy per cent of the sample had previously been in a romantic relationship, however, at the time of this study, only 7% of men and 20.8% of women were in a relationship. Study 1 showed that 11% defined their relationships with a focus on the romantic (i.e., hetero-romantic), and not the sexual (i.e., heterosexual). Moreover, their descriptions of the qualities they sought in a romantic partner were not at all different from those described by sexual individuals. Because sexual desire and romantic love are independent (Diamond, 2003), it is possible to have love without sex, just as one can have sex without love. By studying the developmental period in adolescence during which sexual desires and romantic love become interconnected (Furman & Wehner, 1994; Hazan & Zeifman, 1994), this may shed light on their separateness for asexuals. Given the natural human propensity to form pair-bonds that are sexual in nature, why there is a preference for pair-bonding via romantic attachment in asexuals is remains to be studied.

The link between Schizoid Personality, and possibly Asperger's, is also intriguing and deserves further study. The qualitative data provided a valuable opportunity to explore asexuals' experiences and thoughts around Cluster A personality features. The AVEN message board might be a useful source of analysis for the relationship between Schizoid Personality and Asperger's Disorder given that there is more candid dialog without potential socially desirable responding. Recent data have found a significantly higher proportion of asexuals among women with Autism Spectrum

Disorders compared to a matched control group without Autism (17% vs. 0%, respectively; Ingudomnukul, Baron-Cohen, Wheelwright, & Knickmeyer, 2007). Whether the higher rates of asexuality in those with Autism were related to aberrations resulting in higher levels of testosterone, or to the social challenges inherent to having a diagnosis of Autism, is unknown.

Finally, the fact that all asexuals interviewed believed that asexuality was biologic and that there may be a genetic component to it deserves further study. There was also the very strong sentiment that it should be conceptualized as a sexual orientation, as suggested also by Bogaert (2006). Sexual psychophysiologic techniques (e.g., vaginal photoplethysmography, penile plethysmography), as well as digit ratio, handedness, and birth order mapping in asexuals may be worthwhile research avenues to pursue in hopes of clarifying the extent of physiologic and biologic involvement in the development of asexuality.

Some limitations of the studies must be considered. Firstly, 27 individuals in Study 1 did not indicate their sex and were, therefore, removed from the analyses. Unlike the question about sexual orientation (which was free-response), the question about sex only offered "male" and "female" as response options. It is unlikely that this item was missed in error since it appeared at the very beginning of the online survey. It is possible that individuals deliberately left this item blank because they did not label themselves exclusively as male or female (i.e., agendered, gender queer, homoaesthete asexual, pan-asexual gender-free, gender-fluid girl born with an outie) or perhaps they identified equally as male and female. Given that this was not explored in the qualitative study, the extent to which this explanation accounts for the missing data on "sex" is unclear. It must also be acknowledged that there were potential selection biases in the sample recruited from AVEN. Those belonging to AVEN may be a distinct group given that they have (somewhat publicly) acknowledged their asexual identity, although it is important to point out those only aliases, and not actual names, are typically used on AVEN. Some of the similarities of the findings from the current study and that of Prause and Graham (2007) may be due to the fact that both studies recruited asexuals from AVEN. It is also possible that distress is a motivating factor for joining an online web community and this might have inflated psychopathology scores. However, given that those in Study 2 indicated that their distress significantly lessened once they found a community in AVEN, this possibility is unlikely.

It bears mentioning that there were many more female participants than male participants in Study 1 (71% female) and Study 2 (73% female). Bogaert (2004) found a significantly greater proportion of women than men in his population-based study, and because it is men, and not women, who are more likely to volunteer for questionnaire studies on sexuality (Wolchik, Braver, & Jensen, 1985) our findings may reflect a true population gender difference in the prevalence of asexuality. Because women have been described as having greater sexual plasticity in sexual response and sexual orientation (e.g., Baumeister, 2000; Chivers, Rieger, Latty, & Bailey, 2004; Diamond, 2005), and to be more likely to show desynchrony between mental and physiologic arousal than men (Chivers, Seto, Lalumiere, Laan, & Grimbos, 2008), if this sex difference in asexuality prevalence is valid and not merely a volunteer bias, then it is reasonable to assume that women might also be more likely than men to lack sexual attractions. In a survey on AVEN conducted in July 2007 (http://www.asexuality.org/en/index.php?showtopic=24599), 61.9% of the sample endorsed female, 32.8% of the sample endorsed male, and 5% endorsed other categories (intersex, male-to-female transsexual, female-to-male transsexual). In the message board following the online poll results, several AVEN participants indicated that they had not completed the question about their biologic sex because they did not feel they could relate to any of the categories provided. Thus, the question of sex differences in the prevalence of asexuality is more complicated that simply assessing male versus female; it encompasses discussions of gender identity.

Overall, this study illustrated a number of personal and sexual characteristics of asexuals (Study 1) and illuminated these characteristics in more depth using detailed interviews (Study 2). Similar to the proposition by Bogaert (2006), the findings suggested that asexuals are a mentally healthy group who continue to seek out and engage in rewarding, emotionally connected relationships. They may be more likely to question conformity, as illustrated by their atheism, and they may be more likely to focus on the technical aspects of sexual activity during masturbation or partnered sexual activity. There is strong motivation for conceptualizing asexuality as a biologic, perhaps genetic, sexual orientation and, as such, asexuals are highly invested in working with sex researchers to execute this important research.

Whereas this study attempted to uncover some of the characteristics of asexuality by exploring asexuals' own narrative truths, this study did not address the true nature of asexuality. To what extent is asexuality a sexual identity versus a sexual orientation? Sexual orientation traditionally refers to behavioral characteristics and a predisposition towards a certain gender (Kinsey, Pomeroy, & Martin, 1948) whereas sexual identity includes the recognition, acceptance, and identification with one's preferences (Mohr, 2002). Shively and De Cecco (1977) advanced a broad definition of sexual identity, which encompassed sexual orientation, biologic sex, gender identity, and social sex-role identity. Asexuals in this study conceptualized their asexuality as an identity but also referred to their asexuality as an orientation but many rejected the traditional categories of gender and sexual orientation. On the other hand, all participants

embraced the asexual identity, and this supports previous findings in which those with non-conventional sexual feelings may have a stronger sense of sexual identity than those who are unaware of their feelings (McConaghy & Armstrong, 1983).

Although the majority of research exploring sexual orientation identity formation has focused on non-heterosexual identity formation, Cass' (1979) model of identity formation might be extended to apply to asexuals. Cass' model illustrates the transition through identity confusion (confusion about who one is in light of their sexual desires and behaviors), identity comparison (the individual compares their identity with those sharing a similar identity to cope with the alienation), identity tolerance (the individual seeks to meet the social, sexual, and emotional needs that supports his/her emerging identity), identity acceptance (the individual is developing a clearer sense of their identity as gay/lesbian), identity pride (the individual experiences pride at their identity and may devalue heterosexuality), and identity synthesis (acknowledging supportive and devaluing non-supportive heterosexuals, and developing a sense of wholeness). Asexuals in the present study articulated their identity confusion, and many discussed long-standing confusion and "experimentation" with the heterosexual orientation prior to their knowledge of AVEN. With the discovery of an asexual community, many indeed discussed identity comparison, tolerance, and pride. Asexuality may, therefore, force reconceptualizations of sexual identity, sexual orientation, and gender identity to be more inclusive. Future research should be targeted to studying gender identity development in asexual individuals, and comparing those who are romantically inclined to same versus opposite sex partners.

It also bears mentioning that asexuality is likely a heterogeneous entity. Some accepted traditional categories of gender (male/female) and sexual orientation (hetero-, bi-, and homosexual), whereas others resisted these and preferred non-traditional descriptions. Also, whereas asexuality was characterized by a lifelong lack of sexual attractions, 29% in the current study recalled first sexual interests. Some (27%) engaged in intercourse despite the lack of attraction. The qualitative data indicated a lack of sexual distress, and only 10% scored in the clinical range on the measure of sexual distress. These data suggest that there is not one asexual prototype, and that as research continues to explore the nature and characteristics of asexuality, subtypes may emerge. It is also possible that some individuals may be more accurately categorized as having a sexual dysfunction or as having a paraphilia (this was the case for at least one participant in our sample).

What mechanisms might underlie the development of asexuality? A closer look at the development of sexual attraction might shed light on this perplexing question. One explanation may be gleaned from Bem's (1996) "exotic becomes erotic" developmental theory, which posits that physiologic arousal generated by feeling different from opposite-sex peers becomes transformed into erotic attraction. To explicate *how* such transformation takes place, Bem proposed three possible mechanisms–one of which is the extrinsic arousal effect, in which physiologic arousal is combined with a cognitive causal attribution (e.g., my arousal was elicited by a potential sexual partner), giving rise to erotic desire. Thus, it may be that asexuals lack this cognitive causal attribution and their physiologic arousal does not become directed towards any target. McClintock and Herdt (1996) prefer a biologic explanation to the development of sexual attraction and strongly link normal attraction to adrenarche–the period of maturation of the adrenals between the ages of 6 and 10. This marks the first event in a developmental sequence progressing from attraction to fantasy to sexual behavior. Moreover, this "turning on" of sexual attractions takes place at the age of 10 for boys and girls, well before gonadal puberty, regardless of sexual orientation, and has been shown in a number of different countries (Herdt & McClintock, 2000). They hypothesize that with the maturation of the adrenal glands at the age of 6–8 and the increase in dehydroepiandrosterone secreted from the adrenal cortex, this alters brain function, including neural proliferation and selective loss of nonfunctional connections. Following from this theory of attraction, it is possible that disruptions in the process of adrenal maturation, such that the child does not experience the 10-fold rise in adrenal androgens, take place. Alternatively, asexuality may develop from a central mechanism that prevents the activation of neural receptors by these androgens thus preventing proliferation. Certainly, the finding that the majority of our participants could not recall onset of any sexual attractions during childhood and, instead, reported feeling different from their peers, who verbalized sexual attractions, points to possible aberrations in the period of adrenarche.

Longitudinal research designs, as have been conducted in exploring other facets of sexual orientation development and changes over time (e.g., Diamond, 2005), might be key to better understanding the development, nature, and trajectory of asexuality. Moreover, the combination of qualitative with quantitative methodologies may be essential for defining the central characteristics of this poorly understood construct.

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