

Asexuality as a Spectrum:

A National Probability Sample Comparison to the Sexual Community in the UK

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May 1, 2013

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ABSTRACT

Asexuality has thus far been studied as a binary category attached to a spectrum of sexual orientation: those who are sexually attracted to the opposite sex, same-sex, both, or neither – representing asexuality. This study, in contrast, separates the spectrum of gendered sexual orientation from a spectrum of the amount of sexual attraction people have, where asexuality is at one end of the spectrum and hyper-sexuality is at the other, see Figure 1. An intermediate category of people, deemed gray-sexual, is compared to the asexual and sexual populations as another portion of this study's spectrum. This population of gray-sexual people was larger than the asexual population and exhibited many demographic, attitudinal, and behavioral similarities to asexual people or had intermediary results between asexual and sexual people. Data came from three studies, the first two National Surveys of Sexual Attitude and Lifestyles in 1990 and 2000 (NATSAL I and II) from the UK, and Towards Better Sexual Health (TBSH) in 2000. Notably, asexual and gray-sexual people were found to consume less alcohol and were more likely to abstain from drinking alcohol all together.

INTRODUCTION

Definition of Asexuality

Asexuality is a relatively rare sexual orientation. Its definition has evolved over time to generally consist of people who do not experience and have not experienced sexual attraction (Aicken, Mercer, & Cassell, 2013; “AVEN,” 2012; Bogaert, 2004, 2013). Asexual people were first included in Michael Storms model of sexual orientation, where an asexual person was classified as someone with both low homo-eroticism and low hetero-eroticism (Storms, 1980). This two dimensional spectrum included both a spectrum of sexual attraction in terms of gender, (i) heterosexual, (ii) homosexual, and (iii) bisexual, as well as a spectrum of how much sexual attraction or eroticism people experienced (Storms, 1980). Since Storms, the literature has not focused on the idea that asexuality is one end of a spectrum of the degree of sexual attraction or eroticism.

The main goal of this paper is to expand the definition of asexuality in the literature into one where asexuality is one end of a spectrum, which is more consistent with the Storms model and the self-conceptions of self-identified asexual people (“AVEN,” 2012; Storms, 1980). To achieve this goal, this paper will replicate results found with the previous more restrictive binary definition of asexuality, using the same data but with this paper’s more inclusive spectral definition of asexuality. Previous research has found that some demographic characteristics and some behaviors are statistically significantly different between asexual and sexual people. This new hypothesis that this paper will test is that people who fall between asexual and sexual people would have characteristics and behaviors that (i) either are fully similar to asexual people or (ii) are intermediate between asexual and sexual people.

Asexuality may seem like an invisible difference between people, and in many ways it is. The main website and online community of asexual and gray-sexual people is not called the Asexual Visibility and Education Network by accident. Visibility and acknowledgement of these orientation is vitally important to building a community and finding acceptance (“AVEN,” 2012). In addition, it has been shown that others have more prejudices against and are willing to discriminate against asexual people in comparison to other sexual minorities (MacInnis & Hodson, 2012). Gray-sexual people may be subject to these same prejudices and discrimination, because the practical differences between asexual and gray-sexual people may not create a safer space for gray sexual people. Asexual and gray-sexual people have created active online and in-person communities that they describe as a source of strength (Elizabeth, Pan, Sarah, Karl, Patti, & Kathleen, personal communication, April 20, 2013). Acknowledging that asexuality is part of a spectrum in the literature can encourage additional research on the spectrum, open up the community to additional people who may not have know about asexuality or gray-sexuality, and validate sexual people who fall on the lower end of the spectrum.

Sexual Attraction and Desire as a Spectrum

Little is known about asexual people and the asexual community, which – under a binary definition – comprises approximately 0.4% to 1.8% of the population (Aicken et al., 2013; Bogaert, 2004, 2013; Lucassen et al., 2011). Some researchers have used nationally representative probability samples, whether of the United Kingdom in 1990 and 2000 (Aicken et al., 2013; Bogaert, 2004, 2013) or of New Zealand secondary school students in 2007 (Lucassen et al., 2011). Other researchers used non-representative samples, including convenience samples of asexual people generally taken from the Asexual Visibility and Education Network

(“AVEN,” 2012; Brotto, Knudson, Inskip, Rhodes, & Erskine, 2010; Prause & Graham, 2007; Yule, 2011), and human subject pools at universities (Yule, 2011).

As mentioned earlier, the dominant definition of asexuality is someone who has ‘does not experience sexual attraction,’ or someone ‘has never been sexually attracted to anyone at all’ (Aicken et al., 2013; “AVEN,” 2012; Bogaert, 2004, 2013). By way of contrast, sexual people are people who report sexual attraction to the opposite sex, same sex, or both.

This paper will argue that narrowly defining asexuality as a binary classification of people who have never felt sexually attracted to anyone at all, eliminates those people experiencing little to no sexual attraction or those who have changed over time (Hinderliter, 2009; Kinnish, Strassberg, & Turner, 2005). This may eliminate self-identifying asexual people, because they may have experienced sexual attraction once in his or her lifetime for even a fleeting second, while it has not practical significance in his or her life (AVEN, 2012). The asexual community includes people who have never felt sexually attracted to anyone, but it is not exclusive to it.

The self-identifying asexual community includes asexuality as a part of a spectrum of how sexual or non-sexual someone can be, with asexual people on one end of the spectrum (“AVEN,” 2012). The literature so far has not explored what proportion of the population may fall between asexual and sexual people. Additionally, Hinderliter (Hinderliter, 2009) explains that it can be hard for an asexual to know if they have experienced sexual attraction, simply because if they have not experienced sexual attraction then they do not know what sexual attraction feels like; asexual people who have not felt sexual attraction could also confuse romantic attraction for sexual attraction, with romantic attraction meaning to whom someone

feels romantic love, feelings of affection feelings, and affectionate bonding, as described by Lisa (Diamond, 2003).

This paper will argue that there is at least one specific identity between asexuality and sexuality on a spectrum, where there may be many more. The identity argued in this paper is gray-sexuality (or grey-sexuality). Such individuals are very close to asexual people on the spectrum, but they differ from strictly asexual people because they may have once or very rarely experienced some level of sexual attraction. Gray-sexual people may experience sexual attraction, libido, sexual desire, and/or sex-drive in various combinations and/or only under specific circumstances (“Gray-A / Grey-A - AVENwiki,” n.d., “The Gray Area,” n.d.). In the online and in-person asexual community, gray-sexual seems to be used as a way to classify an amorphous area in between asexual and sexual, that can be very difficult to describe (“The Gray Area,” n.d.). This paper will identify a portion of people who may fit into this gray-sexual category, as those people who report sexual attraction to the opposite-sex, same-sex, or both, but who explicitly prefer no sexual activity. This definition will in no way include all fractions of the gray-sexual community, and may include people who would not identify as gray-sexual, but can provide evidence for groups between asexual and sexual people, creating a spectrum.¹

The idea of sexuality as a spectrum was popularized under Kinsey (Institute for Sex Research, 1953; Kinsey, 1948) and has grown more sophisticated in the intervening years, with more dimensions and scales to consider, beginning with the Storms model mentioned above

¹ Another intermediary orientation not addressed in this paper is one of demi-sexuality, where individuals only experience sexual attraction after forming a strong emotional bond or romantic bond with another person (“AVEN,” 2012, “Demisexual - AVENwiki,” 2013).

(Storms, 1980). Typically, the sexuality on the scale ranges from complete homosexuality to complete heterosexuality, with bisexuality in the middle.

The idea of putting zero sexual attraction on one end of the scale and constant sexual attraction on the other has been much less common and relatively untouched since the Storms model (1980), but nonetheless it is growing in importance. In fact, this scale is somewhat implicit in the psychological community already, but only for people whose level of sexual attraction changes. Hypo Sexual Desire Disorder (HSDD) is a sexual dysfunction classified in the Diagnostic and Statistical Manual IV T-R that may seem very similar to asexuality, but is definitively distinct. HSDD is defined as “a deficiency or absence of sexual fantasies and desire for sexual activity (Criterion A). The disturbance must cause marked distress or interpersonal difficulty (Criterion B) (American Psychiatric Association, 2000, p. 541). This second criteria, the marked distress has not been shown to be significantly statistically different for asexual people compared to sexual people (Brotto et al., 2010). This paper will consider asexuality and gray-sexuality sexual orientations, not sexual dysfunctions.

Now, recently there has been a controversy around whether to add “hypersexual disorder” to the newest DSM-V as well, indicating the opposite side of a spectrum regardless of its official acceptance as a disorder or not.

Evaluating the Spectrum

Even though, or perhaps because, there is not a large body of research on asexual people there are many popular stereotypes about asexual people. Many of these stereotypes serve as the baseline assumptions for researchers too. Some of the most common assumptions are that asexual people are virgins, who do not masturbate, have a disorder causing them to be asexual,

have unfulfilling lives without sex, cannot have or have not had an orgasm, and that asexual people will judge sexual people for being sexual (AVEN, 2012).

Some earlier papers, therefore, have explored the sexual behavior and mental illness of asexual people, and their satisfaction with their sex lives, often relative to sexual people (Aicken et al., 2013; Brotto et al., 2010). Also, several papers have looked for differences in demographic characteristics between asexual and sexual people.

Since this study looks to expand the definition of asexuality in the literature into one where asexuality is one end of a spectrum, the theoretical expectation is that people who fall between asexual and sexual people would have characteristics and behaviors that are similar to asexual people, or are intermediary between asexual and sexual people. This paper will look further into how asexuality may be part of a spectrum of sexual attraction and desire, comparing gray-sexual people to previously significant differences between asexual and sexual people. This study will also compare new data to previous reported prevalence of asexuality, compare one aspect of asexual people's attitudes, and compare three behavioral aspects. Asexual people's attitudes will focus on: satisfaction with their frequency of sex. Behavioral aspects will include: if they have difficulty achieving orgasm, their alcohol consumption, and their smoking habits.

It must be stated that much of the research into asexuality has been a-theoretical, or has followed theory from the lesbian, gay, and bisexual communities. The study of asexuality is growing, but is a new area of exploration with little understanding of why asexual people may differ from sexual people. Theoretical hypothesis have often found contradictory results. There is not yet enough empirical research to create theoretically founded hypotheses that do not rely heavily upon stereotypes and assumptions about asexual people, for most aspects of asexual people, their behaviors, attitudes, and lifestyles. This paper will provide theoretical

interpretations where appropriate, but also take an exploratory stance, so as not to rely on stereotypes and other potentially negative assumptions of asexual people. Nonetheless, here is what the literature to date has found concerning asexual individuals.

PREVIOUS RESEARCH

Demographic Characteristics Associated with Asexuality

Age. Researches have hypothesized that asexual people, on average, might be younger than their sexual counterparts, because younger people are still finding their sexualities and may not have reached sexual maturity (Bogaert, 2004). Simply put, they have had many less years to be sexually attracted to anyone. It is less clear if age operates the same way if we think of asexuality more as self-identification. In this instance, it is probably more likely that asexual people will be older on average, since identity-formation takes time and people may be reluctant when they are young to claim to not be sexually interested in others. But older individuals may re-interpret their earlier (sexual and romantic) experiences and their earlier desires in new ways (reflecting their sense of themselves as really asexual). While there has been support for these hypotheses in some studies, other studies have not found a link or found contradictory results for age (Aicken et al., 2013; Bogaert, 2004, 2013; Brotto et al., 2010; Prause & Graham, 2007).

For gray-sexuality, given that we are looking more at people's ideal states of sexuality, it is possible that people will be older because it may take time to identify with gray-sexuality. Alternatively, gray-sexual people in this study may be younger, because of the definition used: sexual attraction but an explicit preference for no sexual activity. Younger people may not have fully developed mentally and emotionally and therefor may be more likely to prefer no sexual activity to older people.

Gender. Most scholars have assumed that more women will identify as asexual than men, potentially due to the general tendency of men to have more sexual partners than women (Anne M. Johnson, Mercer, Erens, Copas, & al, 2001). Surprisingly, this hypothesis has not been clearly supported (Aicken et al., 2013; Bogaert, 2004, 2013; Brotto et al., 2010; Prause & Graham, 2007). This insignificance may be the case for self-identifying gray-sexual people as well, but possibly not for those gray-sexual people identified in this study, due to the non-inclusive definition of gray-sexuality as people who have experienced sexual attraction, but explicitly prefer no sexual activity. In the case of this study, there may be more gray-sexual women than men, because this definition is so specific. Asexual women have been shown to have similar scores for desire, arousal, orgasm, and satisfaction scales as women with sexual desire and arousal disorders, which may be factors that correlate with a desire for no sexual activity, increasing the number of gray-sexual women. Asexual men on the other hand only showed low sexual desire, with no difference in erectile function to sexual men, potentially decreasing the number of men who have experienced sexual attraction, but prefer no sexual activity (Brotto et al., 2010).

Family life. Studies have shown that asexual people were more likely to report being single than sexual people and fewer asexual people have children (Aicken et al., 2013; Bogaert, 2004, 2013; Prause & Graham, 2007; Yule, 2011). In fact, the NATSAL I and II found asexual and sexual people to have the opposite relationship statuses: while most asexual people were single (approximately 70%), most sexual people were in a relationship (around 70%) (Aicken et al., 2013). However, the majority of asexual people had been in a relationship at some point (70%) (Brotto et al., 2010, p. 612). Theoretically, gray sexual people may exhibit similar characteristics.

Fitting with less asexual people being in relationships, previous work has concluded that compared 60% of sexual women, only 21% of asexual women have biological children (Aicken et al., 2013). The study did not, however, find any statistically significant difference between asexual and sexual men (Aicken et al., 2013).

Sexual Behavior

There is a distinction between asexual people and those individuals who have not yet participated in sexual behavior. Theoretically, asexual people would have fewer sexual partners and fewer sexual encounters, because they do not experience sexual attraction, which can be considered a large underlying impulse to participate in sexual activity. In nationally representative samples, asexual people report having engaged in sexual activities, but those who have report fewer sexual partners and fewer sexual encounters with those partners than sexual people report (Aicken et al., 2013; Bogaert, 2004, 2013). Asexual people were also more likely to report having had no sexual partners (around 60%-70%) compared to sexual women and men (five percent, six percent) (Aicken et al., 2013; Brotto et al., 2010). Most asexual people report not having sex, which also happens to coincide with their ideal frequency: at least two-thirds of asexual people had no sexual partners in the last five years (Aicken et al., 2013), and in a separate study at least 85% stated that their ideal frequency of sex was zero to two times a year (Brotto et al., 2010). While it is not safe to assume that gray-sexual people are sexually inactive, it is theoretically understandable that gray-sexual people, would also have fewer sexual partners and have less sexual encounters with those partners, because they are determined by people who would prefer to have no sexual activity.

One may hypothesize that because asexual people have sex less frequently, they would masturbate less frequently, and that gray-sexual people may be the same. In this case, asexual men, but not women, have been found to masturbate less frequently (42% combined men and women) than sexual men (73%) and women (37%) in a national probability sample (NATSAL II), although 50% of the asexual people were not asked because they had not had any previous sexual encounters (Bogaert, 2013; Gerressu, Mercer, Graham, Wellings, & Johnson, 2008). However, in studies targeted towards asexual people, a similar proportion of asexual people have masturbated compared to sexual people, with the majority of asexual (80%) and sexual (95%) men as well as asexual (77%) and sexual (71%) women having masturbated at some point in their lives (Brotto et al., 2010; Gerressu et al., 2008). So, how does one interpret the distinct roles of masturbation and sex in the life of asexual people? To explain the distinct roles of masturbation and sex in the life of asexual people Bogaert (2012) coined the term ‘autochorissexualism,’ or ‘identity-less’ sexuality where asexual people may have a sexual orientation for their physical body, but do not have a sexual orientation as a part of their identity. In a qualitative follow up interview, asexual people reported reasons for masturbation that were geared towards physical needs instead of emotional or interpersonal needs (Brotto et al., 2010, p. 611). When discussing sexual activity, including masturbation, with others, asexual people tended to use technical and non-emotional language; this was not the case when describing other aspects of their lives or behavior, showing that they were not void of emotion in general but just related to sexual behaviors (Brotto et al., 2010). This small sample of 15 asexual people, recruited from Brotto’s (2010) convenience sample study, also indicated that some were having consensual but unwanted sexual intercourse that “did not help them feel closer to their partners in the way that their (sexual) partners described” (Brotto et al., 2010, p. 612).

Attitudes

Contrary to theoretical assumptions, asexual people report being more sexually satisfied than sexual people (76% & 46% respectively) (Aicken et al., 2013). The finding that the majority of asexual people are not engaging in sex coupled with the report that asexual people would ideally have sex zero to two times a year (more than 85%), may theoretically suggest that most asexual people are sexually satisfied *not* having sex (Aicken et al., 2013; Brotto et al., 2010). Might not gray-sexual people fall into a similar vein where they are sexually satisfied with no sex? On average, perhaps, but not all asexual people (people who do not experience sexual attraction) lack a want for sex: one in five asexual men and one in ten asexual women reported that they would like sex a bit more often or much more often, compared to more than half of sexual men and one in three sexual women (Aicken et al., 2013).

While it may seem theoretically safe to assume that asexual people, or gray-sexual people, do not enjoy sex, of the asexual people who reported having sex within the past year, the majority enjoyed sex most of the time (Aicken et al., 2013). This may seem to defy the definition of asexuality, however, as alluded to previously Aicken et al. (2013). explain that “it cannot be assumed that those not experiencing sexual attraction are not sexually active – indeed, among those who are sexually active, enjoyment of sex is common (and more common than non-enjoyment).” In fact, a small proportion of asexual people have reported an ideal frequency of sex of either once a week or more than once a week, 12% for asexual men and 3% for asexual women (Brotto et al., 2010).

Asexual and sexual people, on average, have opposing views about whether sex is the most important part of a marriage. Theoretically one might assume that asexual people would find sex to be less important because they engage in sex less frequently. However, in the

NATSAL II the majority of asexual women agreed or strongly agreed that sex was the most important part of any marriage or relationship, but the majority of sexual women and men disagreed or strongly disagreed that sex was the most important part of a relationship (Aicken et al., 2013). If this is the case, then perhaps sex is a more pronounced or un-expectantly present part of a relationship for someone who is not sexually attracted to others, and therefore sex seems to be a more important part of a relationship to asexual people.

Alcohol and Smoking Behaviors

Other sexual minorities in the lesbian, gay bisexual, and transgender (LGBT) community have been shown to have high levels of both alcohol consumption and prevalence of smoking, compared to the general population (Cochran & Mays, 2000; Greenwood & Gruskin, 2007; Stall, Greenwood, Acree, Paul, & Coates, 1999). The continual discrimination that the LGBT community faces has been suggested as a potential reason for this increase in alcohol and tobacco consumption (Greenwood & Gruskin, 2007). Discrimination towards asexual people will be outlined below, highlighting how theoretically asexual people may be at a similar risk.

Asexual people were originally hypothesized to be younger (Bogaert, 2004), and therefore less likely to drink or smoke. However, the national probability sample NATSAL I and two targeted samples found asexual people to be slightly older than sexual people (Bogaert, 2004; Prause & Graham, 2007; Yule, 2011), and the national probability sample NATSAL II found no difference between the ages of asexual and sexual people (Aicken et al., 2013; Bogaert, 2013). Asexual people have an interesting and seemingly contradictory relationship to religion. While asexual people were equally likely to report no religion compared to sexual people (Aicken et al., 2013), asexual people who were religious tended to be more religious, i.e. attend

service more regularly than their sexual counterparts, which may influence asexual people's alcohol and tobacco consumption (Bogaert, 2004, 2013).

Discrimination Towards Asexual people

The relationship between alcohol and tobacco consumption and discrimination depends on the presence of discrimination against asexual people. In early inquiries into the nature of asexuality, asexual people were thought to escape many of the negative stereotypes, prejudices, and discrimination that other sexual minorities face (Bogaert, 2004). Unfortunately, there is now evidence that asexual people face prejudices and biases to the same degree and often more so than other sexual minorities. The evidence for prejudice or intergroup bias against asexual people was shown through the following three findings: heterosexuals viewed asexual people more negatively, as less human, and as a less valuable contact partner compared to heterosexual people and other sexual minorities (MacInnis & Hodson, 2012). Asexual people received the most prejudice of all sexual orientations overall and for each specific scale: negative evaluations, uniquely human traits (equivalent with bisexuals) and emotions, human nature traits and emotions; and who the respondent would like to meet (equivalent with bisexuals) (MacInnis & Hodson, 2012). In addition, heterosexual people were willing to discriminate against asexual people to the same degree as they would discriminate against homosexual people (MacInnis & Hodson, 2012). If sexual attraction is considered so pervasive that asexual people are considered the most un-human, perhaps asexuality itself is not off putting or offensive, but instead sexual people interpret a total lack of sexual attraction from an asexual person as rejection or that they, the sexual people, are not sexually attractive.

Research Questions

This study works to expand the understanding of asexuality from a binary classification, where people have never felt sexually attracted to anyone, into a spectrum where asexuality is at one end, and further the understanding about asexual people and others close to them on that spectrum. Defining people who have experienced sexual attraction, but prefer to have no sexual activity as “gray-sexual” people, this paper compares asexual, gray-sexual, and sexual people to one another. To assess the validity of this paper’s definition of gray-sexual people, gray-sexual people are compared to asexual and sexual people using demographic and behavioral variables that have shown significant differences between asexual and sexual people in previous studies. For similar reasons, newly available archived data focusing on young people in Northern Ireland is evaluated to compare the proportion of asexual people to previous studies, and gray-sexual people to the two other datasets in this study. In addition, this paper will explore whether or not asexual and gray-sexual people report difficulty achieving orgasm, as a possible reason or contributing factor for asexuality or gray-sexuality. Finally, because there are increased odds that other sexual minorities consume more alcohol and tobacco than the heterosexual majority, this paper will examine if there is a difference in the amount of alcohol and tobacco consumed by asexual and gray-sexual people.

APPROACH AND METHODOLOGY

Data

This study will use the NATSAL databases from 1990 and 2000, the NATSAL I and II, and a follow up survey based on the NATSAL’s, Towards Better Sexual Health: A study of sexual attitudes and lifestyles of young people in Northern Ireland (Towards Better Sexual

Health) in 2000. The NATSAL I and II consist of nationally representative stratified probability sample surveys of households in Britain (England, Scotland, and Wales) (A. M. Johnson, Wadsworth, Wellings, & Field, 1994). The main purposes of these two studies were to establish a benchmark understanding of patterns of sexual behavior, provide data on HIV/AIDS and Chlamydia, and in the NATSAL II to track changes from the NATSAL I (Erens et al., 2001). The Towards Better Sexual Health study used a mixed methods approach based on an opportunistic sample, a quota sampling technique, and it was undertaken because Northern Ireland was not included in either the NATSAL-I or II . Intentionally, the three surveys have many variables in common, so that they can be compared to each other.

National Survey of Sexual Attitudes and Lifestyles I

The trained NATSAL-I interviewers surveyed 13,765 persons, face to face, from the ages of 16-59 with a response rate of 66.8% (A. M. Johnson et al., 1994). The sample consisted of 50,000 Postcode Address File addresses, clustered into groups of 50 addresses. Each group of addresses either received ‘short’ versions of the survey, or a mixture of ‘short’ and long surveys pre-determined by serial number, and only one person per household was surveyed. Only the long version of the study included questions that could identify people who had experienced sexual attraction, but who would prefer to have no sexual activity, explained in detail below in the Measures section. Therefore, many of the results from the NATSAL I presented in this study only refer to those participants answering the survey in long form. In addition, a self-completion questionnaire was given to people who had previous sexual experience, eliminating many asexual people and people who report sexual attraction, but who prefer to have no sexual activity. The weighted results were very similar to the original results, so the original results are

presented in this study (Bogaert, 2004). Those participants exhibiting trouble with the survey either due to literacy or language problems were omitted from the NATSAL I results.

National Survey of Sexual Attitudes and Lifestyles II

The NATSAL-II surveyed 12,110 persons, face to face, from the ages of 16-44 with a response rate of 65.4% (Aicken et al., 2013; Bogaert, 2013). The sample was selected using a multi-stage stratified probability design, starting with postcode sectors, then addresses within those postcode sectors, and finally one person per household. Within the NATSAL II there was a self-completion questionnaire only administered to participants who had previous sexual encounters. Unfortunately, this requirement eliminated many asexual people and people reporting sexual attraction who would prefer to have no sexual activity. The variables affected in this study include, difficulty achieving orgasm, and sexual satisfaction. Addresses within London were oversampled due to their increased risk of HIV/AIDS from the NATSAL I. An additional minority boost sample was taken, but will not be used in this study. As in a previous study, some of the original core sample results are very similar to the weighted core sample results (Bogaert, 2013). All variables that reached significant differences between weighted and un-weighted results, will report weighted results. For some variables only differences in the sexual population were significantly different between the weighted and un-weighted results. In these cases, this study will report the results from the original data, with additional weighted results. Those participants exhibiting trouble with the survey either due to literacy, language, or cognitive problems were omitted from the NATSAL II results.

Towards Better Sexual Health

The Towards Better Sexual Health (TBSH) study was conducted by the University of Ulster and the Family Planning Association (Northern Ireland). It surveyed 1,268 people, from the ages of 14 to 25 with a 51.6% response rate, using self-administered questionnaires, with an additional 71 focus groups, and 15 in-person interviews (Simpson, 2004). The sample was determined using quotas of the Northern Ireland government population estimates, and minority ethnic groups, people with disabilities, people living in residential homes or hostels, and people expelled from school were specifically recruited (Simpson, 2004). The data from this survey is not intended to be nationally representative, does not include weights, and was not weighted in previous studies. Therefore, this study reports the results from the original data from the TBSH study, which should not be generalized to the larger population of young people in Northern Ireland.

For more personal questions, on the NATSAL I and II participants were given cards with coded responses, such as the card on sexual attraction (the response options are the same for Towards Better Sexual Health):

Now please read this card carefully as it is important that you understand it and are as honest as you can be in your answer. When you've finished reading, tell me which letter represents your answer.

I have felt sexually attracted. . .

(K) Only to females, never to males

(C) More often to females, and at least once to a male

(F) About equally often to females and to males

(L) More often to males, and at least once to a female

(D) Only ever to males, never to females

(N) I have never felt sexually attracted to anyone at all

(Erens et al., 2001)

For each of the three surveys, those participants who reported that the reason for their first occasion of sex was due to rape or was forced against the participant's wishes will not be included, to control for rape or forced sexual encounters as a cause for asexuality or lessened desire for sex. This was the only variable included in each of the three surveys that relates to sexual trauma.

Measures

Asexuality

Asexual people were determined by the variable sexual attraction from NATSAL-I & II, and Towards Better Sexual Health, illustrated above, with 0= sexual - the first five options where someone was sexually attracted to persons of the same or opposite sex, and 1= asexual - never being sexually attracted to anyone as one, indicating asexual. Percentages of asexual people by survey are shown in Table 1.

Gray-sexual: sexual people with no desire for sex

The incremental category between asexual people, a category that may relate to gray- or grey- sexual people, demi-sexual people, and less sexual people, will be operationalized by a combination of two variable criteria from the NATSAL I and II, and TBSH. This classification of people will be referred to as 'gray-sexual' people. The first criteria will be "sexual attraction," where people report attraction to the opposite-sex, the same-sex, or both. The second criteria will be those who choose "prefer to have no sexual activity," from the question: "what is your ideal

sexual lifestyle now?’ with the following options: 1= prefer to have no sexual activity, 2= no regular partners, but casual partners when I feel like it, 3= a few regular partners, 4= one regular partner but not living together, 5= not married, but living with a partner, and with some sex activity outside the partnership, 6= not married, but living with a partner, and no other sex partners, 7= married, with some sex activity outside the marriage, 8= married, with no other sex partners. Percentages of gray-sexual people from the NATSAL I and II can be found in Table 1.

For the TBSH study, two versions of ideal lifestyle were asked, one about your life now and one predicting in the future. This study will use current ideal lifestyle, because of the extremely low percentage of “predicted” gray-sexual young people (0.43%). However, it is important to use caution when attributing all of the current gray-sexual young people as gray-sexual in general, due to their young age. The distributions of the current ideal lifestyle and future ideal lifestyle by asexual, gray-sexual, and sexual can be found in Table 2.

Previous findings for comparison

To analyze the similarity of gray-sexual people to sexual people and asexual people, previously significant findings for asexual people will be reported for each: asexual, gray-sexual, and sexual people, using the most recent and comprehensive weighted NATSAL II data. Those variables will include: total sexual encounter partners, frequency of sex, percent ever masturbated, frequency of masturbation, marital status and percent single, education, percent white, socio-economic status, religious attendance, importance of religion, height, preferred frequency of sex, enjoyment of sex, and being a parent. Additionally, previously inconsistent findings of gender and age will be reported for both the NATSAL I and II.

Total partners includes all heterosexual and homosexual sexual encounter partners, where sex includes all vaginal, anal, and oral sexual encounters. Sexual frequency includes the number of sexual encounters within the past four weeks. Percent ever masturbated is the percentage of persons who have ever masturbated, but the question was only asked of participants who had sexual encounters eliminating the majority of asexual people and many gray-sexual people. The frequency of masturbation refers to the last occasion of masturbation with the following options: 0= never, 1 = longer than five years ago, 2 = between one and five years ago, 3 = between six months and one year ago, 4 = between four and six weeks ago, 5 = between one and four weeks ago, and 6 = within the last seven days. Marital status includes four categories: 1= married & living with spouse, 2 = cohabitation, 3 = previously married (widowed, divorced, separated), and 4 = single and never been married. The percent single includes people who are single who have never been married, widowed, divorced, and separated people as single, and people who are married or cohabitating as married or in a relationship. Educational status ranges from 1= no degree, 2 = degree level qualification, 3 = A-level, AS-level, SLC or higher exams, and 4 = O-level exams. Due to the small count of asexual people, race will be described by the percent of the sample that is white compared to all other races and ethnicities. Religious attendance ranges from 0 = no religion, 1 = never or practically never, 2 = less than once a year, 3 = at least once a year, 4 = at least twice a year, 5 = at least once a month, 6 = at least once in two weeks, and 7= once a week or more. The importance of religion ranges from 1 = not at all important, 2 = not very important, 3 = quite important, and 4 = very important. Height is a numerical variable measured in centimeters. Whether someone is a parent or not is reported in a binary yes or no. Percentages, means, and standard deviations for each variable by asexual, gray-sexual, and sexual for the NATSAL II are shown with results section in Table 8.

The distributions used to compare gray-sexual people to previously significant differences between asexual and sexual people will include the following. Preferred frequency of sex had the following options: to have sex much more often, to have sex a bit more often, it is about right, to have sex less often, to have sex much less often, and don't know or no answer. The enjoyment of sex asks how much people enjoy having sex with the following choices: always enjoy it, enjoy it most of the time, don't often enjoy it, never enjoy it, do not have sex these days, and don't know or no answer. Percentages for each variable by asexual, gray-sexual, and sexual for the NATSAL II are shown in the results section in Table 9.

Difficulty achieving orgasm

Reports on difficulty achieving orgasm will be operationalized by the NATSAL II question "unable to experience an orgasm for at least a month," with yes and no as potential responses, and no answer recoded as missing. The distribution of difficulty achieving orgasm by gender can be seen in Table 3.

Alcohol consumption

Alcohol consumption will be operationalized by the NATSAL I, II, and Towards Better Sexual Health derived variable alcohol consumption. Alcohol consumption is derived from two questions: on average how often do you drink alcohol and about how many drinks do you have when you have any. Alcohol consumption includes the following categories 0 = those who do not drink are considered non-drinkers, 1 = low consumption drinkers - women who consume 15 or less and men who consume 20 or less drinks per week, 2 = moderate consumption drinkers - women who consume 16-34 and men who consume 21-49 drinks per week, and 3 = high

consumption drinkers: women who consume 35 or more and men who consume 50 or more drinks per week. Distributions of alcohol consumption are shown in Table 4.

Tobacco Consumption

Tobacco consumption, or smoking will be operationalized by the derived NATSAL I and II, variable smoking, which is derived from two questions: “do you ever smoke cigarettes and about how many do you smoke a day?” Smoking includes the following categories: 0 = those who have never smoked, 1 = ex-smokers, 2 = light smokers: people who smoke less than 15 cigarettes a day, and 3 = heavy smokers: people who smoke 15 or more cigarettes a day. Distributions of tobacco consumption are shown in Table 5.

Statistical Analyses

This study used STATA 11.2 to perform statistical analyses. As mentioned previously, results reported are the original data results, and the weighted results when the weighted results showed significant differences. The ethnic boost sample from the NATSAL II was not included.

In order to determine statistical significance of the differences across categories, Chi-square statistics are used, which can be represented by the following equation:

$$\chi^2 = \sum \frac{(\textit{observed frequencies} - \textit{expected frequencies})^2}{\textit{expected frequencies}}$$

The Chi-square test works by adding the sum of squared independent standard normal random variables for each category. In this paper the categories are: asexual, gray-sexual, and sexual people. A Chi-square test calculates frequencies for each category under the null hypothesis that there is no difference between asexual, gray-sexual, and sexual people. The difference between the expected frequencies and the observed frequencies are then compared to determine if there is

a statistically significant difference between them, and significance results were considered those with $p < 0.5$ results.

Interval variables, such as alcohol and smoking consumptions were compared using Chi-squared tests as well as odds-ratios using logistic regression, so that certain demographic characteristics, such as age, gender and religion could be controlled for. Logistic regression can be represented by the following equation:

$$\text{Log} \frac{\Pr(Y = 1)}{\Pr(Y = 2)} = \alpha + \beta_1 X_{i1} + \beta_2 X_{i2} + \dots + \beta_p X_{ip}$$

Where the log-odds that asexual people exhibit a frequency amount of a behavior, such as consuming less alcohol, than sexual people ($Y=1$) vs. the log-odds that asexual people exhibit the same amount of a behavior, i.e., drink as much as sexual people, ($Y=2$). This is then repeated for gray-sexual people vs. sexual people, for each variable. The additional $\beta_p X_{ip}$ represent controls, such as age, gender, and religion, and results of each test were considered significant if $p < 0.5$ results. For ease of interpretation, logistic regression log-odds were converted into odds-ratios, which are represented by the following equation:

$$\left(\frac{p}{1-p} \right) = e^{\alpha + \beta_1 X_{i1}} + e^{\alpha + \beta_2 X_{i2}} + \dots + e^{\alpha + \beta_p X_{ip}}$$

An odds-ratio equal to one is interpreted as equal to the baseline group (sexual people). An odds-ratio greater than one means that the sample has greater odds of exhibiting the variable in question, while an odds-ratio of less than one signals that the subgroup has a lower odds of exhibiting the variable in question.

Finally, one and two sample t-tests are used to compare proportions found in this study to previous studies, or between subgroups. The equations for a one-sample and two sample t-test can be represented by:

One Sample:

$$t = \frac{\bar{x} - \Delta}{\bar{s}/\sqrt{n}}$$

Two Sample:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\left(\bar{s}_1^2/n_1 + \bar{s}_2^2/n_2\right)}}$$

Where \bar{x} represents the proportion found in this study, in a one-sample t-test \bar{x} is compared to a previous study's proportion Δ , and in a two-sample test this is the proportion of one subgroup subtracted from the proportion of the second subgroup. The denominators denote the estimate of the standard error of the mean. In a one sample t-test the standard error of the mean is computed by dividing the standard deviation by the square root of the sample size. In a two sample t-test the standard error of the mean is the square root of the sum of each variance divided by its sample size. The one sample t-test is used to compare the proportion of young people who do not report sexual attraction in the Towards Better Sexual Health Study to the two previous NATSAL studies, and a study of secondary students in New Zealand. The two-sample t-test is used to compare the means of tobacco consumption between asexual and sexual people.

RESULTS

Asexuality as Part of a Spectrum

Sexual Satisfaction

As shown in Table 1, there are more people who have experienced sexual attraction, who prefer not to engage in sexual activity than asexual people. In both the NATSAL-I & II there were more gray-sexual women than men (73.40% - NATSAL I & 69.73% NATSAL II), compared to sexual people (55.62% - NATSAL I & 48.38% - NATSAL II), while there were only more asexual women in the NATSAL II (74.63%), as shown in Table 6. Gray-sexual

people, but not asexual people, on average were younger ($M = 27.39$) than sexual people ($M=30.64$), but only statistically significant in the NATSAL II, shown in Table 6.

Using the NATSAL II data, Aicken, Mercer, and Cassel (2013), found that asexual people were more likely to report that they were satisfied with their frequency of sex, (76%) as compared to sexual people (46%). This study found slightly different percentages of sexually satisfied asexual and sexual people compared to Aicken et al. (2013), because this study did not include the ethnic boost sample and the results are un-weighted. The results in this study are un-weighted due to the insignificant difference between the weighted and un-weighted results, as shown in Table 7. However, asexual people were still more sexually satisfied (61.70%) than sexual people (49.83%) statistically significant after eliminating “not answered/don’t know” (Chi-square = 67.91, $p=0.000$) as shown in Table 7. Of those asexual people who reported sexual satisfaction, 79.31%, or 23 out of 29 sexually satisfied asexual people, also report that they “do not have sex these days” (Erens et al., 2001); meaning that on average, the majority of asexual people are sexually satisfied with no sexual activity.

In addition, gray-sexual people reported being more sexually satisfied than either sexual people or asexual people, with 64.45% reporting sexual satisfaction (compared to 61.70% and 49.83% for asexual and sexual people respectively). This difference is statistically significant (Chi-square = 202.39, $p=0.000$). Of those sexually satisfied gray-sexual people, 78.87%, or 153 gray-sexual people out of 194 sexually satisfied gray-sexual people, report that they “do not have sex these days” (Erens et al., 2001); meaning that the vast majority of sexual people who would prefer to have no sexual activity are sexually satisfied with no sexual activity, as shown in Table 7. This may seem redundant. However, in terms of pure number counts, there are more people who report experiencing sexual attraction, who prefer *not* to have sex, and are not having sex,

than there are asexual people. In addition, 5.4% of the sexually satisfied sexual people, or 284 people, are sexually satisfied and report that they “do not have sex these days” (Erens et al., 2001). Two hundred and eighty four people is not only more people than the number of asexual people in the survey, but also a higher number than the sexually satisfied gray-sexual people, also indicating a spectrum of how much sexual desire individuals have. Overall, 4.18% (460/11,000) of the total sample consists of people who are sexually satisfied with having no sexual activity, or ten times the amount of asexual people in this same survey.

Demographic and Behavioral Characteristics

Previous studies on asexual people found significant differences between asexual people and sexual people in terms of sexual activity, demographics, and preferences. In this study, many of those significant results for asexual people were also significant when comparing gray-sexual people to sexual people, shown in Table 9. Specifically, using the NATSAL II data, (Bogaert, 2013) found that asexual people had fewer sexual encounter partners in their lifetimes, lower frequency of sex, were less likely to masturbate, more likely to be single, less likely to be white, had lower socio-economic status, more religious, and shorter than sexual people. Some of the characteristics of gray-sexual people indicated intermediary differences between asexual and sexual people, such as the number of sexual encounter partners, measures of masturbation, percent white, socio-economic status, religiosity, and height. While a few showed that gray-sexual people were more extreme than asexual people, such as having a lower frequency of sex, less education, and an even higher percentage of being single.

Aicken et al., (2013) found that asexual people differed from sexual people in terms of their preference for frequency of sex, enjoyment of sex, whether sex is the most important aspect

of a marriage or long term relationship, marital status, and having children. These distributions were also significantly different between gray-sexual and sexual people, determined by Chi-square tests, as shown in Table 9. Gray-sexual people had significantly different distributions for their preferred frequency of sex and whether sex is the most important part of any marriage or relationship compared to asexual people. Asexual and gray-sexual people both had higher percentages of sexual satisfaction, as previously stated, but asexual people had a higher percentage of reporting “I don’t know” (13.64%) in comparison to gray-sexual (3.13%) and sexual (0.71%) people. This increase in “I don’t know” did not repeat in the question relating to one’s enjoyment of sex. Instead, the distributions for asexual and gray-sexual people were not significantly different, both had over 60% reporting that they do not have sex, and slightly higher percentages reporting that they “don’t often enjoy” or “never enjoy” sex (5.23% asexual, & 4.8% gray-sexual) compared to sexual people (just over 2.01%). Gray-sexual people had significantly different opinions on whether sex was the most important part of a marriage or relationship, compared to asexual and sexual people, but overall seem to have more similar opinions to sexual people than asexual people. Over two-thirds of both gray-sexual and sexual people disagreed that sex was the most important aspect of a relationship, while under 40% of asexual people disagreed. In terms of being in a relationship and having children, gray-sexual people were not significantly different from asexual people, where the majority of both were more likely to be single and childless compared to sexual people.

Prevalence of Young People Who Report No Sexual Attraction

In the Towards Better Sexual Health study, the prevalence of young people who have not experienced sexual attraction in Northern Ireland was 1.6%, shown in Table 10. This is higher

than the two statistics found in the NATSAL I and II, between 1.05% -4% (Aicken et al., 2013; Bogaert, 2004, 2013). Using a one-sample t-test, 1.8% is not statistically significant from the 1.05% of asexual people found in the NATSAL I ($p=.09$), but is statistically significantly different from the 0.4% of asexual people found in the NATSAL-II ($p=0.00$), which was undertaken in the same year (2000). Compared to Lucassen, Merry, Robinson, Denny, Clark, Ameratunga, Crengle, and Rossen's (Lucassen et al., 2011) previous study on secondary school students in New Zealand, where the prevalence of students who reported no sexual attraction was 1.8%, this study's finding of 1.6% is not significantly different ($p=0.68$), when using a one-sample t-test.

Difficulty Achieving Orgasm

No reported differences in difficulty achieving orgasm between asexual, gray-sexual, and sexual people were statistically significant. This was true for weighted and un-weighted results, shown in Tables 11 and 12. As stated in the data section of this paper, more asexual and gray-sexual people were excluded from the self-completion questionnaire, which included the question pertaining to difficulty achieving orgasm. The insignificant results presented here are out of those asexual, gray-sexual, and sexual people eligible to respond to the question asking if they had experienced difficulty in achieving orgasm within the past month. As stated above, only people who had previous sexual encounters were asked about achieving orgasm.

Alcohol Consumption

Overall, asexual people and gray-sexual people report drinking less than sexual people on average, in both NATSAL I and II, regardless of weighting in the NATSAL II shown in Table 13. In terms of the weighting differences, the only significant difference was that sexual people

had a slightly higher mean, with the weighted sample than the un-weighted sample, indicating a slightly higher amount of alcohol consumption on average. Asexual and gray-sexual young people from the TBSH study, where gray-sexual young people is described as those who prefer no sexual activity now, not in the future, also drank less than sexual young people.

While between 40.00%-72.64% of asexual people did not drink, only 10.12%-15.34% of sexual people did not drink. Following with the theory that there are people on a spectrum between asexual and sexual people, between 28.06%-41.96% of gray-sexual people did not drink. The odds of one's categorical alcohol consumption decreases between -94% & -82% ($0.061-1=-0.94*100$ – TBSH, & $.08-1=-0.92*100$ –NATSAL II, respectively, with $0.18-1=-0.82*100$ – NATSAL I in between) when that person is asexual, compared to being sexual, controlling for age, sex, and the importance of religion, on average, significant $p=0.00$. The odds of one's categorical alcohol consumption decreases between -66% & -71% ($.34-1=-0.66*100$ – NATSAL-I, $0.29-1=-0.71*100$ –NATSAL II, respectively, with $0.31-1=-69*100$ – TBSH in between) when that person is gray-sexual compared to being sexual, controlling for age, sex, and importance of religion, on average, significant $p=0.00$.

Tobacco Consumption

Asexual people report consuming less tobacco, on average, than sexual people, but the difference is to a far lesser extent than the reported difference with the consumption of alcohol, as shown in Table 14. Odds-ratios were not strong enough to produce results, let alone statistically significant results, both as a simple logistic regression as well as with controls for age, sex, and importance of religion. Chi-square tests showed differences between the smoking distribution, but only for the NATSAL II (Chi-square = 34.75, $p=0.00$), and without the significance of the odds-ratio logistic regression test these results should be taken with caution.

Only for the NATSAL II two-sample t-tests showed that asexual people smoke less ($M=1.52$) compared to sexual people ($M=2.09$), significant $p=0.00$. Gray-sexual people ($M=1.99$) do not significantly smoke less than sexual people ($M=2.09$), $p=0.11$.

LIMITATIONS

Theory

So little is known about asexual people, that there are very few theoretical reasons why asexual people may be different from sexual people. Many of the hypotheses that have somewhat of a theoretical basis have not been consistently significant, such as age and gender, both of which have had conflicting and non-significant results for asexual people compared to sexual people. The lack of information about asexual people encouraged this study to err on the side of exploratory research, so as not to theorize based on stereotypes, or the assumption that asexual and gray-sexual people have physical, mental, or sexual dysfunctions or disorders. Where there is a theoretical basis, often where there are differences in other sexual minority groups, theory is included and explained, but this is a minority of the research in this study. As the literature builds and a stronger sense of the asexual community is understood more theoretical reasoning should be included in future research.

Biases and Exclusions

As Aicken, Mercer, and Cassell (2013) suggest, social desirability bias may be working both for and against asexual people, possibly resulting in both over and under reporting of sexual attraction. Additional bias may come from participation bias, as asexual people may be less willing to participate in a study on the sexual lifestyles and attitudes (Aicken et al., 2013), due to

a lack of sexual activity, which may also bias the gray-sexual population for the same reasoning. Self-identified gray sexual people are most certainly under represented. The definition used here, people who have been sexually attracted to others, but who explicitly prefer no sex, in no way encompasses gray-sexual people in the self-identified gray-sexual community (“Gray-A / Grey-A - AVENwiki,” n.d., “The Gray Area,” n.d.). Self-identified gray-sexual people may have similar preferred frequencies of sex or increased preferences for the frequencies of sex compared to asexual people, who do not all prefer no sexual activity. Gray-sexual people who desire any amount of sex greater than none would not be captured by this study. Another intermediary sexuality in the asexual community is demi-sexuality, which this paper did not have the capacity to investigate. Demi-sexuality requires a strong emotional bond before sexual attraction can occur and no survey questions identified this strong emotional bond, and demi-sexual people were therefore un-identified. With these specific limitations, this paper works to show that there are people on a spectrum between asexual and sexual people, who may be a portion of the gray-sexual community, which should be investigated in future studies along with emotional bonds and demi-sexuality.

Other aspects of orientation were unavailable with the data in this study, such as the idea that one could be romantically attracted to another person or not, as posited by Diamond (2003), also cited as a limitation by Aicken et al. (2013). Prause and Graham (2007), found that a small portion of their study accepted the term of asexuality, but self-identified in terms of a romantic orientation. In addition, without asking about romantic orientations we cannot compare romantic asexual people to a-romantic asexual people as Hinderliter (Hinderliter, 2009) does with data from the Asexuality Visibility and Education Network (AVEN).

DISCUSSION

This paper works to examine asexuality as one end of a spectrum, to evaluate the percentages of asexual and gray-sexual people with newly available data, and to examine aspects of asexual and gray-sexual people's characteristics compared to sexual people's characteristics. Data came from three surveys examining sexual attitudes and behaviors, two national probability surveys of the UK: the National Survey of Sexual Attitude and Lifestyles from 1990 and 2000, and Towards Better Sexual Health, which focused on young people in Northern Ireland. Results were calculated using Chi-square, logistic regression odds-ratios, and t-tests.

Main Findings

Asexuality as a Spectrum

More people were found to experience sexual attraction, but prefer to have no sexual activity, defined as gray-sexual in this paper, than there were asexual people in both the NATSAL I and II. This group of gray-sexual people exhibited similar statistically significant socio-demographic characteristics, sexual activities, and most sexual attitudes distinct from sexual people, in similar ways as asexual people differed. Many of the results spoke to gray-sexual people as part of a spectrum, where they were significantly difference from sexual people, but on average, fell in between asexual and sexual people. This was the case for preferred frequency of sex, the total number of sexual encounter partners, the percentage that had ever masturbated, the frequency of masturbation, education level, the percentage white, socio-economic status, religious attendance, the importance of religion, and height.

Interestingly, there were some sexual behaviors and attitudes where gray-sexual people were more extreme than asexual people. These included percentage female, enjoyment of sex, the percentage single, and the frequency of sex. More women were gray-sexual than men, where some but not all studies have shown that there are more asexual women than men. In terms of enjoyment of sex, both asexual and gray-sexual people had over 60% report that they were not having sex these days, but of those having sex more asexual people always enjoyed it (16.68%) compared to gray-sexual people (10.99%). Gray-sexual people were more likely to be currently single than asexual people, and specifically more likely to be previously married and currently single. Perhaps, because gray-sexual people experience sexual attraction they are more likely to enter into relationships and then discover that they would prefer no sexual activity once in a relationship, terminating the relationship. While asexual people may be less likely to enter into a relationship because they do not find people sexually attractive, making it more difficult to find a partner or enter into a relationship in the first place. This may also speak to why gray-sexual people had a higher frequency of sex, even though in this study gray-sexual people were explicitly defined as those who would prefer no sexual activity. This is one among many reasons it would be very informative to ask participants about both their own sexual identities and their romantic identities, as suggested by Prause and Graham (2007). They found that a small portion of their study accepted the term of asexuality, but self-identified in terms of a romantic orientation, for example hetero-romantic where someone is romantically attracted to people of the opposite sex, regardless of sexual orientation. Unfortunately, this distinction between romantic and sexual attraction has not been included in national probability studies where asexual people could be identified.

Proportions of Asexual and Gray-sexual Young People

New data on young people in Northern Ireland produced similar proportions of asexual young people who do not experience sexual attraction to most previous studies, except the most recent NATSAL, the NATSAL II. The definition of gray-sexual people from the NATSAL I and II had two distinct questions in the TBSH study. Participants were asked what their preferred sexual lifestyle would be now and in the future. A larger percentage of young people desired no sexual activity now (8.43%), while a much smaller percentage predicted that they would desire no sexual activity in the future (0.43%). The difference between current desires, future desires, and the NATSAL I and II findings may indicate that sex is expected to be a desirable part of interpersonal relationships, and that it takes time and maturity to realize that one would rather have no sexual activity.

The potential underestimation of future gray-sexual people may also occur because young people do not know that these categories of gray-sexual or asexual people exist. As the largest online community of asexual people is explicitly the Asexual Visibility and Education Network, understanding that a spectrum exists for how much people desire sex, which includes no desire for sex, may be helpful for people in understanding where they fall in regards to sexual desire and sexuality. A source of strength for asexual people comes from meeting one another and creating a community (Pan, Kathleen, & Elizabeth, personal communication, April 21, 2013). Asexual people wanted to meet with other asexual people, as one person described: “when you remove the sexual component, being asexual becomes irrelevant and everything else becomes relevant” (Sara, personal communication, April 21, 2013). Creating a community may help reduce or eliminate stigma or the experience of being seen as “un-humanness” found by (MacInnis & Hodson, 2012), as another asexual person described, “There's nothing to be

ashamed of and this [meeting one another] assures other people that we're not abnormal, we're just different from other people because of that [asexual] reason” (Pan, personal communication April 21, 2013).

Behavioral Comparison

A surprising percentage of asexual people reported that they did not drink (40%-73%) compared to sexual people (10%-15%). This is contradictory to literature on other sexual minorities, but not inconsistent with informal conversations with asexual people (Five College Queer Sexuality and Gender Conference, personal communications, March 2, 2013; Ace NYC Meet Up Group, personal communications, March 16, 2013). The presence of discrimination and decreased alcohol consumption in asexual people calls into question the relationship between discrimination and increased alcohol consumption. If asexual people face increased discrimination, theoretically, they would consume more alcohol than the general sexual population. Perhaps then there is a link between the amount of sex someone desires and alcohol consumption. Alcohol is a common social lubricant, but perhaps it can have explicit sexual undertones, or it is used to elicit sexual undertones.

Asexual people consumed less tobacco than sexual people, but this was only significant in the NATSAL II and did not have strong enough results to produce an odds-ratio, and thus must be evaluated with caution. There were no significant differences between asexual, gray-sexual, and sexual people in terms of difficulty achieving orgasm.

Implications

If people's desires for sex or preferred frequency of sex is a spectrum, then people cannot assume that other people, or more importantly their partners, have the same desire or desire the same frequency of sex that they do. Sex can be hard to talk about openly and honestly, while it has a large presence in advertising and romantic storylines in literature and movies. Sex sells. Sex is in advertising everywhere, but this study shows that not everyone is having sex all the time and many sexually inactive people, sexual, gray-sexual, and asexual, are sexually satisfied.

Sex-positivity promotes sex as something good, healthy, and pleasurable, so long as it is safe and is consensual (Anderson, 2013). Asexuality may seem to conflict with sex positivity, but being sex positive does not mean that everyone should be having sex all the time. Sex positivity means that people should have sex on their own terms, (David Jay in, Tucker, 2011), without shame or embarrassment, including the choice to have no sex. In relationships it is particularly important to acknowledge and communicate sexual desires with the assumption that everyone will be different, and that is completely fine and to be expected, so long as everyone is comfortable and safe. There is a need for future research to examine the distribution of people's preferred frequency of sex in more detail, beyond whether people would like to have more sex, less sex, or if they are happy with the amount of sex they are having. While this study explored the lower end of the spectrum of the amount of sexual desire people have, the entire spectrum warrants further investigation in the future.

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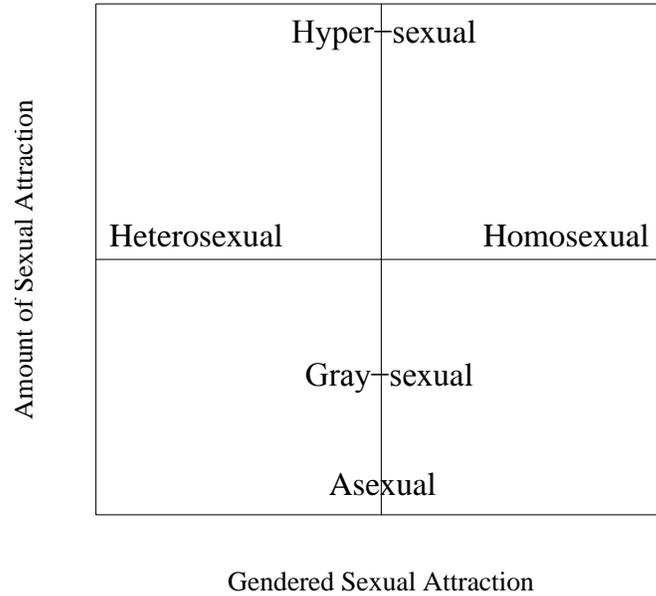
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FIGURES

Figure 1. Dual Sexual Attraction Spectrum



TABLES

Table 1. Distributions of Asexual and Gray-sexual People (Un-weighted)

Sexual Attraction	NATSAL I		NATSAL II		TBSH	
	%	n	%	n	%	n
	Asexual	1.35	61	0.47	52	1.62
Gray-sexual	4.42	199	2.85	313	-	-
Sexual	94.22	4,242	96.68	10,635	98.38	911
Total Observations		4,502		11,000		926

Table 2. Distributions of Asexual and Sexual People who Prefer No Sexual Activity (Un-weighted)

Sexual Attraction	TBSH Now		TBSH Future	
	%	n	%	n
Asexual	1.6	15	1.6	15
Sexual People Who Prefer No Sex	8.43	79	0.43	4
Sexual	89.97	843	97.97	918
Total Observations		937		937

Table 3. Distribution of Difficulty Achieving Orgasm (Un-weighted)

Difficulty Achieving Orgasm	Men	Women	Total
No	83.38%	78.23%	80.43%
Yes	5.38%	12.73%	9.60%
Not Answered	2.03%	1.64%	1.81%
Not Asked	9.21%	7.39%	8.17%

Table 4. Alcohol Consumption Distribution (Un-weighted)

	NATSAL I		NATSAL II		TBSH	
	%	n	%	n	%	n
None (0)	11.45	507	16.44	1,811	15.82	155
Low (1)	74.86	3,315	74.67	8,226	70.00	686
Moderate (2)	11.9	527	6.95	766	11.53	113
High (3)	1.78	79	1.93	213	2.65	26
Mean		1.04		0.94		
SD		0.55		0.56		
Total Observations		4,428		11,016		980

Table 5. Tobacco Consumption Distribution (Un-weighted)

	NATSAL I		NATSAL II	
	%	n	%	n
None (0)	42.26	1,853	46.34	5,106
Low (1)	19.66	862	15.55	1,714
Moderate (2)	15.3	671	20.95	2,309
High (3)	22.78	999	17.15	1,890
Mean		2.19		2.09
SD		1.2		1.16
Total Observations		4,385		11,019

Table 6. Gender and Age Comparisons between Asexual, Gray-sexual, and Sexual People

Variable	Asexual		Gray		Sexual		Asexual to Sexual	Gray to Sexual	Gray to Asexual
	M	SD	M	SD	M	SD	t or Chi-square	t or Chi-square	t or Chi-square
<u>NATSAL I</u>									
Percent Female (un-weighted)	74.63	-	73.40	-	55.62	-	-0.19**	-0.17****	-0.01
Age (Weighted)	36.29	15.32	34.14	15.48	35.36	11.65	0.93	-1.22	-2.15
<u>NATSAL II</u>									
Percent Female (weighted)	63.93	-	69.73	-	48.38	-	4.66	48.14****	0.74
Age (weighted)	27.61	9.80	27.39	9.7	30.64	8.02	-3.03*	-3.25****	-0.22
Significance: *=0.5, **=0.01, ***=0.00									

Table 7. Sexual Satisfaction
(Un-weighted)

Sexual Attraction	Percent Sexually Satisfied		Sexually Satisfied without Sex in Past 4 Weeks		
	%	n	%	n	Total
	Asexual	55.77	29	79.31	23
Gray-sexual	61.98	194	78.78	153	313
Sexual	49.42	5,256	5.4	284	10,635
Total Observations					11,000

Table 8. Comparison of asexual, gray-sexual, and sexual people on previously significant predictor variables from NATSAL II (Weighted)

Variable	Asexual		Gray		Sexual		Asexual to Sexual	Gray to Sexual	Gray to Asexual
	n=52		n=313		n=10,948				
	M	SD	M	SD	M	SD	t or Chi-square	t or Chi-square	t or Chi-square
Sexual Activity									
Total partners	0.67	1.18	1.83	1.87	3.33	1.54	-2.66***	-1.49***	1.16***
Sex Frequency	1.13	2.48	0.89	2.36	5.76	6.54	-4.63***	-4.87***	-0.24
Percent Ever Masturbated	0.44	-	0.68	-	0.84	-	26.26***	30.00***	6.79*
Masturbation Frequency	2.37	0.63	2.84	2.38	3.91	2.24	-1.54*	-1.07***	0.47
Demographics									
Percent Single	0.72	-	0.81	-	0.40	-	21.29***	190.06***	2.43
Education	1.93	0.79	2.08	0.91	2.39	0.98	-0.46***	-0.32***	0.14
Percent White	0.61	-	0.80	-	0.92	-	59.19***	49.19***	9.21*
SES	3.80	1.32	4.50	1.23	4.74	0.02	-0.93***	-0.24*	0.69*
Religiosity									
Religious Attendance	2.90	3.06	2.54	2.95	1.40	2.15	1.50***	1.14***	-0.35
Importance of Religion	2.90	1.07	2.47	1.08	1.96	0.88	0.94***	0.51***	-0.42*
Physical Characteristics									
Height	165.56	9.78	167.43	10.5	171.34	9.94	-5.77***	-3.92***	1.85

Significance: *=0.5, **=0.01, ***=0.00

Table 9. Comparison between asexual, gray-sexual, and sexual people of distributions on previously significant variables from NATSAL II (Weighted)

	Asexual	Gray-sexual	Sexual	Asexual to Sexual	Gray to Sexual	Gray to Asexual
	%	%	%			
<i>Sexual Attitudes</i>						
Preference for frequency of sex						
Have much more often	2.5	7.72	12.77	Chi-square 178.82***	161.16***	16.82*
Have a bit more often	8.41	16.26	34.07			
About right	61.36	62.6	50.5			
Have less often	11.82	6.1	1.59			
Have much less often	3.41	4.07	0.35			
Don't know/no answer	13.64	3.13	0.71			
Enjoyment of sex						
Always enjoy	16.68	10.99	45.41	Chi-square 1,13763***	208.19***	1.6
Enjoy most of time	13.3	15.88	44.08			
Don't often enjoy	3.83	3.42	1.93			
Never enjoy	1.4	1.38	0.08			
Do not have sex	63.12	66.78	7.92			
Don't know/no answer	1.67	1.55	0.59			
Sex is the most important part of any marriage or relationship						
Agree strongly	5.67	6.93	3.08	Chi-square 24.44***	70.98***	27.42***
Agree	22.22	10.6	10.53			
Neither agree nor disagree	24.94	13.46	19.46			
Disagree	27.21	51.79	55.12			
Disagree Strongly	12.24	16.31	11.39			
Don't Know	7.71	0.9	0.42			
<i>Family and Relationships</i>						
Marital Status						
Married	24.79	15.55	42.85	Chi-square 191.42***	29.30***	5.8
Cohabiting	3.16	3.4	17.74			
Previously married	2.19	10.23	5.82			
Single, never married	69.87	70.81	33.59			
Weighted Denominator				10,979	10,743	320
Significance: *=0.5, **=0.01, ***=0.00						

Table 10. Prevalence of Asexual People (Un-weighted)

Sexual Attraction	Asexual		Sexual		Total
	%	n	%	n	n
NATSAL I	1.35	60	98.65	4,381	4,441
NATSAL II	0.47***	52	99.53	10,976	11,026
TBSH	1.62	15	98.38	911	926
NZ Secondary School Students¥	1.8	146	98.2	96.4	7,713

T-test significance compared to TBSH: *=0.5, **=0.01, ***=0.00

¥ Included 1.8% or 143 who reported "not sure," not included in this table

Table 11. Difficulty achieving orgasm distributions (Weighted)

Sexual Attraction	No Difficulty		Difficulty		No Answer		Total n
	Asexual	95.65	23	0	0	2.05	1
Gray-sexual	86.11	164	12.78	24	1.06	2	191
Sexual	89.72	9323	9.19	955	1.09	113	10391
Total Observations							10606

Table 12. Difficulty Achieving Orgasm, Significance Tests

Significance Tests	Chi-square (Un-weighted)		Logistic Regression Odds Ratio (Weighted)	
		<i>p</i>		<i>p</i>
Asexual vs. Sexual	4.34	0.11	0.18	0.095
Gray-sexual Vs. Sexual	1.18	0.56	1.19	0.423
Combined	5.54	0.24		

Controlling for age, sex, and importance of religion

Significance: *=0.5, **=0.01, ***=0.00

Table 13. Distribution of Alcohol Consumption

Alcohol consumption						
	NATSAL I (un-weighted)		NATSAL II (weighted)		TBSH (un-weighted)	
	%	n	%	n	%	n
Asexual						
None (0)	40.00	24	72.64	35	71.43	10
Low (1)	55.00	33	22.70	11	28.57	4
Moderate (2)	5.00	3	3.63	2	0.00	0
High (3)	0.00	0	1.02	0	0.00	0
<i>Mean</i>	<i>0.65</i>		<i>0.33</i>		<i>0.29</i>	
<i>SD</i>	<i>0.58</i>		<i>0.60</i>		<i>0.47</i>	
Gray-sexual						
None (0)	28.06	55	41.96	113	35.44	28
Low (1)	61.22	120	55.40	150	60.76	48
Moderate (2)	9.69	19	1.30	4	3.80	3
High (3)	1.02	2	1.34	4	0.00	0
<i>Mean</i>	<i>0.84</i>		<i>0.62</i>		<i>0.68</i>	-
<i>SD</i>	<i>0.63</i>		<i>0.59</i>		<i>0.54</i>	-
Sexual						
None (0)	10.20	425	14.37	1537	12.71	104
Low (1)	75.87	3,160	75.84	8112	71.27	538
Moderate (2)	12.08	503	7.83	837	13.08	107
High (3)	1.85	77	1.97	210	2.93	24
<i>Mean</i>	<i>1.06</i>		<i>0.97</i>		<i>1.06</i>	
<i>SD</i>	<i>0.54</i>		<i>.55</i>		<i>0.61</i>	
Chi-square	109.71***		276.06***		33.99***	
Odds Ratio						
Sexual	1.00		1.00		1.00	
Gray-sexual	0.34		0.29***		0.30***	
Asexual	0.18		0.08***		0.06***	
Total Observations	4,421		11,017		911	
Compared to sexual people, and controlling for age, sex, and importance of religion						
Significance: *=0.5, **=0.01, ***=0.00						

Table 14. Distribution of Cigarette Smoking (Un-weighted)

Tobacco Consumption	NATSAL I		NATSAL II	
	%	n	%	n
Asexual				
None (0)	49.21	29	76.92	40
Low (1)	8.47	5	1.92	1
Moderate (2)	16.95	10	13.46	7
High (3)	25.42	15	7.69	4
<i>Mean</i>	<i>2.19</i>		<i>1.52</i>	
<i>SD</i>	<i>1.29</i>		<i>1.00</i>	
Gray-sexual				
None (0)	46.60	89	54.31	170
Low (1)	15.18	29	11.18	35
Moderate (2)	15.71	30	15.65	49
High (3)	22.51	43	18.50	59
<i>Mean</i>	<i>2.14</i>		<i>1.99</i>	
<i>SD</i>	<i>1.23</i>		<i>1.21</i>	
Sexual				
None (0)	41.91	1,731	45.87	4,875
Low (1)	20.05	828	15.77	1,676
Moderate (2)	15.25	630	21.19	2,252
High (3)	22.78	941	17.16	1,824
<i>Mean</i>	<i>2.19</i>		<i>2.10</i>	
<i>SD</i>	<i>1.20</i>		<i>1.16</i>	
<i>Total Observations</i>		4,380		10,992
Chi-square	7.96		34.75***	
T-test				
Asexual to Sexual	0		.56***	
Gray-sexual to Sexual	0.05		0.11	
Significance: *=0.5, **=0.01, ***=0.00				