Attitudes Toward Anonymous Public Nudes

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ATTITUDES TOWARD ANONYMOUS PUBLIC NUDES

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In Partial Fulfillment

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by

Marianna D. Wendt

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Graduate Studies

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Dean of Graduate Studies
ABSTRACT

ATTITUDES TOWARD ANONYMOUS PUBLIC NUDES

by

Marianna D. Wendt

May 2018

While technologically-mediated expressions of sexuality have been previously studied, there is very little research regarding anonymous public nudes (APNs). APNs are nude photographs which are taken or cropped so as not to include the face or other identifying characteristics, and posted on the Internet. This differs from sexting in that the photographs are meant to be seen by an audience of strangers online, rather than one or a few trusted individuals. The purpose of this study was to examine perceptions of APNs. Sixty-seven male and 160 female students over the age of 18 were recruited from Central Washington University to participate. Each participant looked at one nude photograph for 30 seconds. The photograph depicted either a male or female, with his/her face showing, cropped out, or obscured by a black rectangle. The Measures of Personal Attractiveness were used to assess how socially, physically, and task attractive participants found the photograph target. The Sex-Positivity Scale was used to determine participants’ sex positivity, which was treated as a covariate. It was hypothesized that: 1) anonymous photograph targets would garner lower ratings of social and task attractiveness than identifiable photograph targets; 2) identifiable photograph targets would garner higher ratings of physical attractiveness than anonymous photograph targets; 3) the male photograph target would be rated as less attractive overall than female
photograph target; and 4) male and female participants would differ in their attraction ratings. A multivariate analysis of covariance (MANCOVA) revealed that after controlling for sex positivity, the male photograph target was rated less physically, socially, and task attractive than the female photograph target. Sex positivity as a covariate was also significant across all three types of attraction. There were no significant differences in attraction ratings among anonymity categories or between participant genders.
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CHAPTER I

INTRODUCTION

The use of digital techniques to communicate with peers has become a typical part of modern American society. In a recent investigation into Internet use, 59% of Internet users reported using social networking sites (Hampton, Goulet, Rainie, & Purcell, 2011). Hampton et al. also found a pronounced increase in the number of Americans using social networking sites in just two years. In 2008, 63% of Internet users between the ages of 18 and 35 were using at least one social networking site. By 2010, 80% of Internet users between 18 and 35 were using them. With this rise in social network usage, an increase in behaviors related to computer-based communication is inevitable. Examples of these behaviors include sexting, the use of online anonymity, and moderating one’s online self-presentation.

At the intersection of these behaviors is the act of posting anonymous nude images of oneself in a public online setting. Anonymous public nudes (APNs) differ from sexts in that the images are intended for an audience of strangers rather than for a particular recipient. Current legal discourse regarding stolen or nonconsensual images and underaged participants (Henry & Powell, 2015; Strohmaier, Murphy, & DeMatteo, 2014), as well as research linking sexting with risky behaviors (Champion & Pedersen, 2015; Ybarra & Mitchell, 2014), make further investigation into APNs critical for our understanding of healthy sexual self-expression on social media. The following review of literature examines the areas of study most directly related to APNs; these include sexting, anonymity, and online self-presentation.
CHAPTER II
LITERATURE REVIEW

Sexting

Coined in 2007, Merriam-Webster.com defines sexting as, “The sending of sexually explicit messages or images by cell phone” (Merriam-Webster.com, 2016). The exact prevalence of sexting in the United States is unknown, primarily because surveys use varied definitions of sexting and have, thus, garnered different results (Klettke, Hallford, & Mellor, 2014). In their analysis of academic literature regarding sexting, Klettke et al. more broadly defined sexting as “… the sending, receiving, or forwarding of sexually explicit messages, images, or photos to others through electronic means, primarily between cellular phones” (p. 44). Klettke et al. noted that despite discrepancies between studies, on average, surveys found that approximately 10% of adolescent participants and 50% of adult participant had sent sexts, and about 15% of adolescent participants and about 56% of adult participants had received them from someone else.

In comparison, Lenhart (2009) found that 4% of adolescents had sent sexts, and about 15% had received them. Lenhart also noted that 8% of surveyed teens had been sent sexual images of a third party whom they knew personally. For adults, sexting appears to be more common with younger adults than older adults; 44% of surveyed adults between the ages of 18 and 24 reported receiving sexts, whereas only 34% of adults between 25 and 34 and 22% of adults between 35 and 44 received them (Lenhart & Duggan, 2014). Lenhart and Duggan also noted that sexting among adults has
increased since 2012. Despite inconsistencies in research findings, it is clear that sexting is a relatively common behavior among young Americans.

Though it may be common, sexting is not without danger. In their examination of the consequences of sexting, Henry and Powell (2015) discuss social repercussions of having one’s private sexts redistributed to people who were not the intended target. Though this undoubtedly may occur by coincidence, Henry and Powell note that intimate images are sometimes redistributed purposefully following a relationship breakdown; a phenomenon sometimes called “revenge porn.” They also found that sexts can be used as tools by perpetrators of domestic violence to control or threaten both former and current partners. Unlike some other researchers who study sexting, Henry and Powell consider sexual images taken without consent to be sexting as well (i.e., upskirting or taking a photograph up someone’s skirt without their permission, or filmed instances of sexual assault).

Multiple studies have found a correlation between risky behavior and sexting (Champion & Pedersen, 2015; Ybarra & Mitchell, 2014). Champion and Pedersen (2015) collected survey data from 511 participants, collected at five universities in Canada and through websites such as Reddit. After analyzing these data, the researchers found that of individuals who engage in any form of sexting, those who sent photographs had higher rates of alcohol consumption than sexters who sent only text-based sexts and non-sexters. Photograph-sending sexters were also more likely to engage in risky sexual behaviors, such as engaging in intercourse without using condoms. Ybarra and Mitchell (2014)
found similar results: 63% of adolescents who sexted had engaged in either vaginal or anal sex, as compared to just 14% of adolescents who did not sext.

Another important consequence for underage sexters is legal repercussions. Though jurisdictions vary in methods of handling teen sexting, nude images of people under age 18 fall into the category of child pornography, and teens who exchange nude images of one another are often breaking the law (Strohmaier et al., 2014). Though Strohmaier et al. surveyed only college-aged participants, respondents were asked to think back to when they were under eighteen years of age while answering the survey. Of these, 54% indicated that they had engaged in sexting as a minor, but only 28% indicated that the sexting had been of a photographic nature. Furthermore, 61% of participants who had engaged in sexting as a minor did not know that it was illegal, and 59% of those stated that knowing this “probably would have” or “would have” (p. 251) stopped them from sexting. Overall, participants were also about equally divided on whether minors should be prosecuted for sexting. Approximately a third of participants (36%) felt minors should be prosecuted, a third (32%) felt they should not be, and a third (31%) felt that prosecution should depend on certain factors. Examples of these factors were the age difference between receiver and sender, whether or not the sexts were shared without permission, whether harassment or bullying occurred, and the overall explicitness of the sext.

However, sexting need not have only negative consequences. Hasinoff (2012) argued that many of the negative consequences of sexting are due to the social climate surrounding sexting, not the sexts themselves. For instance, female sexters may be
reprimanded not for their own safety regarding sexting, but for lacking a level of chastity which their male counterparts are not held to. Hasinoff also contended that treating sexting as media production may help abate the stigma around sexting. The major anxiety of sexting, Hasinoff argued, is having the photographs redistributed to people who were not the intended audience. By treating the sext as art, a creative piece of media that can be legally protected from redistribution, the onus of blame can be shifted from the original sexter to the redistributor of the material. Hasinoff reasons that this could change the climate around sexting from one of sexual shame to one of ownership, in which young people are taught that photographs of their bodies are their own property to be managed as they wish.

It may be advantageous for researchers to think of sexts as private property, crafted by and for the individual, because reasons for sexting can be very different from one person to the next. Participants in Champion and Pedersen’s (2015) study indicated that “To initiate sexual contact with the recipient,” “To get a girl’s or guy’s attention,” and “To feel sexy” (p. 210) were the most common motivations for sexting. Champion and Pedersen classified all of these reasons as sensation-seeking. A similar inquiry found that 44% of undergraduates indicated that “mutual interest between exclusive romantic partners” (p. 251) was their top reason for sexting (Strohmaier et al., 2014). Another popular reason was “to impress/flirt with someone in whom I was romantically interested” (p. 251), which 34% of participants chose. Though only 1% of participants chose “peer pressure” (p. 251) as a motive for sexting, 15% of participants sent sexts after receiving them from someone else, feeling “compelled to respond” (p. 251). These
responses indicate that, although sexting is often seen as a pleasurable or recreational activity, it is not without social pressures.

Multiple sexting researchers have called for studies of higher empirical quality (Henry & Powell, 2015; Klettke et al., 2014; Strohmaier et al., 2014). Strohmaier et al. even described current sexting research as “convoluted, incomplete, and fraught with methodological limitations, leaving many unanswered questions” (p. 249). With everyday Americans’ social media use growing, superior research into sexting prevalence, motivations, and legality is necessary, and important to our understanding of APNs.

**Anonymity**

Another important component of APNs is anonymity. In an early look on online anonymity, Suler (2004) noted that many people say or do things online which they would not do in the offline world. Calling this phenomenon the “online disinhibition effect,” (p. 321) Suler theorized that anonymity is one of the principle factors causing it. People utilizing anonymity online have the power to separate their online actions from their offline reputations. Thus, any perceived misbehavior or self-disclosure can be separated from a person’s identity. Suler described the anonymous online persona as a “compartmentalized self” (p. 322).

While many people who have used the Internet have seen this phenomenon firsthand, some empirical studies have used it to link anonymity to other behaviors. Bartlett, Gentile, and Chew (2016) looked specifically at cyberbullying and how it relates to anonymity. Using a longitudinal design, Bartlett et al. correlated how anonymous participants felt online, their levels of acceptance of cyberbullying, and the degree to
which they themselves engaged in cyberbullying. A sample of 146 undergraduate participants (78% female) completed the four-wave survey. Using a path analysis to correlate scores on all three measures, the authors found that level of perceived anonymity was correlated with cyberbullying behavior, with attitudes toward cyberbullying acting as a mediating variable. The more anonymous a person felt online, the more likely they were to accept cyberbullying, and the more likely they were to cyberbully others themselves.

However, anonymity need not always lead to unscrupulous behavior. Keipi and Oksanen (2014) conducted qualitative and quantitative studies on how Finnish youth were utilizing anonymity online. A sample of 258 middle and high school students, ranging in age from fourteen to eighteen, were asked to write a short, third-person narrative about an experience with online anonymity. The researchers left the question very open to encourage the students to write about either positive or negative experiences, fictional or actual experiences, and upon any particular theme which the student felt strongly about. In accordance with Keipi and Oksanen’s hypotheses, many of the students’ narratives focused around competence (17%), autonomy (32%) and relatedness (30%). All three themes were more common in the essays of older students, and girls wrote about relatedness more frequently than boys. The most commonly mentioned risks were cyberbullying or online insults (74%), risky false identity or identity theft (27%), and exploitation or sexual harassment (18%).

Students felt that the Internet was a good place for developing talents and getting positive criticism, such as playing an instrument on video or posting a drawing (Keipi &
Oksanen, 2014). Many also remarked that this could be risky, since one could also receive harsh or cruel criticism, but generally the students seemed to feel the possible benefit was worth the risk. The authors noted that in this case, the line between self-expression and performance could be blurred. Students also indicated that they believed anonymity to be an instrument of social freedom, considering it to inspire honest or even therapeutic interaction, especially since it need not rely on variables such as physical appearance. Though students also held anonymous interactions with some degree of wariness, many felt that this distrust did not necessarily negate the enjoyment of an anonymous conversation. Overall, though the Finnish students were aware of the risks of anonymity, they found it to be a helpful mediator in online communications.

Experimental studies have also assessed anonymity as a mediator between variables. Choiu (2007) assessed how gender, level of anonymity, and level of topic intimacy influenced reply intent. Choiu recruited 122 males and 115 females from southern Taiwan between the ages of 15 and 24 to participate in the experiment. They were sorted into between-subjects groups of high anonymity (i.e., a nickname), medium anonymity (i.e., a photograph) or low anonymity (i.e., a web camera feed). Each participant then, in a within-subjects method, viewed messages from theoretical peers containing highly sexually intimate statements, moderately sexually intimate statements, slightly sexually intimate statements, and control statements. Finally, participants were asked to describe whether or not they would respond to these statements, given their level of anonymity. Choiu found that males were more likely to respond than females across anonymity and topic intimacy. Anonymity had an effect, with higher levels of anonymity
making replying more likely. Topic intimacy also had an effect, with higher levels of intimacy related to higher likelihood of response. This supports the statements of the students in Keipi and Oksanen (2014), in that anonymity can inspire greater honesty and further communication.

However, as with the cases of cyberbullying, anonymity can lead to socially undesired behaviors. Zimmerman and Ybarra (2016) investigated whether anonymity had an effect on aggression online. A sample of 126 university students, 101 female with a mean age of 22, were randomly assigned to anonymous and non-anonymous conditions, and told that they were being partnered with another participant who was actually a research confederate at a different location on campus through an Internet connection. In the non-anonymous condition, participants were asked to disclose personal information to the research confederate, such as college major and living location. In the anonymous condition, participants were asked about their perceptions of other students at the school, such as what most students majored in and where most students lived. Each participant was then asked to play a word unscrambling game with the confederate, and were promised a reward for jointly completing at least 15 words. However, the confederate managed the word scramble so that 15 words could not be completed.

Afterwards, participants viewed either a blog with aggressive posts (i.e., “They have to be pretty terrible to not be able to solve these easy scrambled words”; p. 185) or neutral posts (i.e., “I like word games so it was fun even though we didn’t get the reward”; p. 185). Finally, each participant was asked to write a short blog post about their experience. Participants in the anonymous category were more likely to write aggressive
comments in their blog post. There was also a smaller, but still significant interaction effect between the two variables, so that viewing aggressive blog posts while anonymous affected participants’ blog posts.

Anonymity, especially anonymity as found on the Internet, has been shown by researchers to be a powerful social tool. Socially negative effects such as cyberbullying (Bartlett et al., 2016) and aggression (Zimmerman & Ybarra, 2016) cannot be dismissed, but neither can positive effects such as unmitigated honesty (Choiu, 2007; Keipi & Oksanen, 2014). It is imperative that anonymity continues to be studied, especially in relation to the growing diversity of ways anonymity can be utilized. The precise ways in which posters of APNs use anonymity may be of particular interest to Internet researchers.

**Online Self-Presentation**

The third area of study most related to APNs is online self-presentation. Uploading photographs of oneself, commonly referred to as selfies, has been described as walking a delicate balance between intimacy and performance, connecting to others in honesty while projecting a carefully constructed image (Lasén & Garcia, 2015). Online self-presentation manifests in a myriad of ways, depending on circumstances such as online platform utilized and goals of users. However, a common type of online self-presentation is sexual presentation, such as is common on dating and social media websites.

Gallant, Williams, Fisher, and Cox (2011) investigated sexual online self-presentation as it relates to mating strategies. In this study 300 photographs were taken
from participants on a dating website and analyzed. Half of the photographs were of
males, and participants had an age range of 18 to 35 years. Sex-specific mating strategies
found in the photographs were then coded, such as skin exposure or displays of strength.
Gallant et al. found that women tended to advertise physical fitness, which was
interpreted to be a mating strategy, but that men advertised too broad a range of
characteristics to point to a single male-specific mating strategy. These results may well
be due to gender differences themselves. In their study on self-sexualization, Smolak,
Murnen, and Myers (2014) found that college-aged women were much more likely than
college-aged men to engage in online self-sexualization. Smolak et al. argued that self-
sexualization should be treated by researchers as a gendered phenomenon.

However, men clearly do engage in sexual online self-presentation. Lasén and
Garcia (2015) conducted a set of interviews with heterosexual men in Madrid, Spain,
regarding selfies. The men in these interviews were uncomfortable with taking nude or
sexualized photographs of themselves, but viewed it as a necessary price to pay in order
to receive similar photographs from others. As such, sexual online self-presentation was
described as a tool for flirting and dating. The participants’ feelings toward erotic male
body representations were complex with many disliking representations they felt were
too feminine, as well as overly-masculine posturing male representations, but also
expressing envy for the perceived female attention to these representations. Lasén and
Garcia also noted that many of these men disclosed that they would be embarrassed to be
cought taking selfies, especially sexualized selfies. While Smolak et al. (2014) might
argue that this embarrassment is due to self-sexualization being seen as a feminine behavior, the exact reasons for this remain unknown.

Despite its higher prevalence among females, sexual online self-presentation can backfire upon women as well. Daniels and Zurbriggen (2014) compared the perceptions of 58 adolescent girls and 60 young adult women of either a sexualized and nonsexualized fictional female with a Facebook profile. Participants were asked to rate the profile owner in terms of physical attraction, social attraction (i.e., likeliness of friendship), and task attraction (i.e., competence). The authors found that participants rated the nonsexualized profile owner as more physically attractive, socially attractive, and task attractive than her sexualized counterpart. Adolescent girls were also more severe than young women in their ratings of the sexualized profile owner. The findings of researchers such as Daniels and Zurbriggen may provide clues as to how APNs are perceived by the public.

**Interpersonal Attraction**

In order to assess how APNs are perceived, researchers must first choose valid measures of public perception. A commonly used measure of perception are the Measures of Interpersonal Attraction (McCroskey & McCain, 1974). These measures are based in the work of Berscheid and Walster (1969), who postulated that the more people are attracted to one another, the more those people will attempt to communicate interpersonally with one another. Berscheid and Walster also argued that the more attracted someone is to a particular individual, the more influence that individual has over their communication patterns.
The Measures of Interpersonal Attraction were first delineated using factor analysis (McCroskey & McCain, 1974). Social attraction, physical attraction, and task attraction were the three dimensions identified, and together accounted for 49% of the variance in the model. McCroskey and McCain used the Hoyt procedure to determine internal validity, finding .75 for social attraction, .80 for physical attraction, and .86 for task attraction. These measures were analyzed and improved upon by McCroskey, McCroskey, and Richmond (2006). McCroskey et al. conducted a literature review on all studies which had successfully used the Measures of Interpersonal Attraction, finding that scores on the Measures of Interpersonal Attraction successfully and repeatedly served as a valid predictor for communicative behavior.

Additionally, McCroskey et al. (2006) conducted another factor analysis, item-total correlations, and estimates of internal reliability for the Measures of Interpersonal Attraction. During the factor analysis, they found that each test item loaded highest (.70+) on the attraction dimension it was intended to represent, but that these items also loaded highly on the other two dimensions as well (.40 - .60). The authors stressed that these findings indicate that the three dimensions should be considered separate, but are highly related and should be expected to covary. For the item-total correlation, all items for each dimension garnered correlations above .50, with most items garnering correlations of .80 or above. Internal reliability estimates ranged from .91 to .96. These data support the Measures of Interpersonal Attraction as both valid and reliable, and loan it credibility as a tool for researching the perception of anonymous public nudes.

**Sex Positivity**
Another useful concept regarding APN research is sex positivity. Sex positivity is a relatively novel concept which has roots in feminist theory. It is defined by sociologist Carol Queen as philosophy which advocates for sexuality as a positive force in the lives of humans (Queen & Comella, 2008). Sex positivity may function as a covariate mediating the perception of APNs. More sexually-positive people may feel that posting anonymous nude images is a normal and healthy expression of sexuality, while less sexually-positive people may feel that sharing such images is distasteful or immoral. Gromer-Thomas (2014) used a confirmatory factor analysis to create the Sex-Positivity Scale, a 40-item scale which can be segmented into two subscales (i.e., non-judgement and benefits) each with three components (i.e., population, sex act, and relationship type). The Sex-Positivity Scale was shown to have good reliability (.96), and factor analysis supported the six-factor model. Though sex positivity is a developing concept, it may be useful for researchers looking into the perception of APNs.

**Current Proposal**

To the current author’s knowledge, there is no prior research on APNs. The current study was designed to address only a few of the questions associated with APNs, primarily those associated with public perceptions. Firstly, are APNs perceived as more socially acceptable than identifiable public nudes in which the faces or other identifying characteristics are not hidden? Secondly, is there a difference in levels of social acceptance for male public nudes and female public nudes? Thirdly, do males and females differ in their social acceptance of public nudes? These questions were addressed with an experimental research study conducted in 2017 and 2018. It was anticipated that:
1) anonymous photograph targets would garner higher ratings of social and task attractiveness than identifiable photograph targets; 2) identifiable photograph targets would garner higher ratings of physical attractiveness than anonymous photograph targets; 3) male photograph targets would garner lower ratings of interpersonal attractiveness than female photograph targets; and 4) male and female participants would rate interpersonal attractiveness of the target photographs differently.

Due to the risk of being recognized, identifiable public nudes may be considered riskier than anonymous public nudes. It was anticipated that this would make the identifiable photograph target seem less task oriented and socially attractive than the anonymous photograph target. However, because the identifiable photograph target included the person’s face, it was anticipated that the identifiable photograph target would seem more physically attractive than the anonymous photograph target. Hypothesis 3 was based upon the work of Smolak, Murnen, and Myers (2014), who suggested that self-sexualization be thought of as a primarily feminine behavior, and Lasén and García (2015), who noted that their male participants were acutely uncomfortable with male online self-sexualization. It was anticipated that participants would perceive posting public nudes to be a feminine behavior, and would therefore rate male photograph targets as less attractive than female photograph targets. Hypothesis 4 was exploratory, intended to determine whether participant gender would affect ratings of attractiveness.
CHAPTER III

METHODS

Design

The current study used a 3 x 2 x 2 between-subjects factorial design. The first independent variable was photograph target anonymity with three levels (i.e., identifiable, anonymous cropped, or anonymous obscured). These were operationally defined as showing the face (i.e., identifiable), having the face cropped out of the picture (i.e., anonymous cropped), and having a black bar superimposed over the face (i.e., anonymous obscured). The second independent variable was the sex of the photograph target, with two levels of male or female. Participants were randomly assigned to one of six conditions: 1) identifiable male; 2) identifiable female; 3) anonymous cropped male; 4) anonymous cropped female; 5) anonymous obscured male; or 6) anonymous obscured female. The third independent variable was participant gender, with two levels of male or female. The dependent variables were self-reported attraction to the person in the photograph using the three dimensions of attraction, physical, social, and task attraction. Sex-positivity was treated as a covariate.

Participants

Participants were 228 students from Central Washington University in the Pacific Northwest, recruited through convenience sampling using Sona Systems, an online research portal. Participant ages ranged from 18 to 45 ($M = 20.8, SD = 4.3$). The sample contained 160 females (70.1%), 67 males (29.4%), and 1 agender participant (0.4%). The majority of participants identified as heterosexual ($N = 194, 85.0\%$), with others
identifying as bisexual ($N = 11$, 4.8%), gay or lesbian ($N = 5$, 2.2%), or other ($N = 7$, 3.1%). Eleven participants (4.8%) did not answer the question. Racial/ethnic breakdown of participants resulted in 143 (62.7%) participants who self-identified as white or Caucasian, 6 (2.6%) identified as black or African-American, 38 (16.7%) identified as Hispanic or Latino, 9 (3.9%) identified as Asian, 3 (1.3%) identified as Pacific Islander, 1 (0.4%) as Jewish, 1 (0.4%) as Middle Eastern, 1 (0.4%) as American Indian or Alaskan Native, and 21 (9.2%) as biracial, multiracial, or mixed. Five participants (2.2%) did not answer the question.

As the study pertained to social media, participants were also asked to give an approximation of how many hours per day they spent on social media, and which social media they used. Hours per day on social media ranged from zero to 20 ($M = 4.3$, $SD = 3.2$). Social media site use varied with 203 (89.0%) participants reportedly using Snapchat, 197 (86.4%) reported using Facebook, 195 (85.5%) used YouTube, 192 (84.2%) used Instagram, 119 (52.2%) used Twitter, 114 (50.0%) used Pinterest, 45 (19.7%) used Tumblr, 26 (11.4%) used Reddit, 23 (10.0%) used WhatsApp, and 23 (10.0%) used LinkedIn. Other social media sites participants reported using were Tinder, Discord, PornHub, Flickr, Imgur, Kik, GroupMe, DeviantArt, Wattpad, and Webtoon.

Sona Systems, the online participant recruitment portal, allowed students in psychology classes the opportunity to earn one point of extra credit for completing this study. The majority of participants indicated they were psychology majors ($N = 80$, 35.1%). Other common majors were biology ($N = 7$, 3.1%), business ($N = 11$, 4.8%), law and justice ($N = 7$, 3.1%), clinical physiology ($N = 15$, 6.6%), and education ($N = 22$, 9.2%).
9.6%). An additional 18 participants (7.9%) indicated that they were undeclared, or declined to answer the question. The remaining 68 (29.8%) indicated a wide variety of majors. Almost half ($N = 111, 48.7\%$) of participants also indicated that they were pursuing a minor, with the majority of those studying psychology ($N = 27, 11.8\%$). Class standing was 89 freshmen (39.0%), 31 sophomores (13.6%), 53 juniors (23.2%), 52 seniors (22.8%), 1 graduate student (0.4%), and 2 post-baccalaureate students (0.8%).

**Materials**

**Target Photographs.** Six fictitious Internet web pages were created for this experiment. The blogging platform Tumblr was used as a template for these pages. The web pages were styled to resemble aesthetic-based blogs where the owners display their own nude images along with other content which they find visually pleasing (i.e., a field of flowers or lit candles). With the exception of the type of nude photograph depicted, each blog was exactly alike in format and content. The identifiable nude photographs depicted either a male or female, naked and including their face in the photograph. The anonymous nude photographs were the same photos, of the same male and female, but with either their faces cropped out of the image or a black bar superimposed over their faces. This served to minimize uncontrolled differences between the identifiable and anonymous conditions, such as lighting or background. Extraneous objects in the background (i.e., a toilet and a framed painting in the male and female photographs, respectively) were photoshopped from the image to further minimize natural photograph differences. The anonymous obscured condition was included for purposes of internal validity, and the anonymous cropped condition was included for purposes of ecological
validity. The nude photographs were donated by anonymous individuals, contacted through Reddit.com forums specifically created for individuals who wish to display their nude images (i.e., *Ladyboners Gone Wild* and *Reddit Gone Wild* for the male and female images, respectively).

**Measures of Interpersonal Attraction.** To assess interpersonal attraction the researcher used the Measures of Interpersonal Attraction (McCroskey & McCain, 1974). This scale was based upon earlier measures of interpersonal attraction, and built using factor analysis. The Measures of Interpersonal Attraction was reanalyzed and improved upon by McCroskey et al. (2006), who determined that the measures had high internal reliability estimates (.91 to .96) as well as validity as a predictor of communicative behavior. The scale is intended for adults, and McCroskey and McCain initially tested it with a college-aged sample, indicating its appropriateness for this study. The Measures of Interpersonal Attraction consist of three scales which allow participants to indicate how socially attractive, physically attractive, and task-responsibly attractive the person in the photograph is. The scales consist of six questions each, 18 questions total, ranked on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Examples of questions include “I think he (she) could be a friend of mine” (p. 263) and “I have confidence in his (her) ability to get the job done.” (p. 263). In the current study, the Measures of Interpersonal Attraction attained item-total correlations above .50, as well as Cronbach’s Alpha levels of .91 to .96, further indicating its appropriateness for this study.

**Sex-Positivity Scale.** In order to assess sex-positivity as a mediating variable, participants also filled out the Sex-Positivity Scale (Gromer-Thomas, 2014). This scale
consists of 36 questions ranked on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). Examples of questions include, “I think it’s OK for people to have as many sexual partners as they want” (p. 26) and “I think that all sexual acts that people might engage in are acceptable as long as all parties agree to them” (p. 27). The initial validation sample of the Sex-Positivity Scale garnered a Cronbach’s alpha of .96, while this sample of participants a Cronbach’s alpha of .93, indicating that the high internal reliability of the initial sample was retained.

Participants also filled out a short demographic survey constructed by the researcher. Demographic questions asked included the participants’ age, year in school, major(s), minor(s), gender, sexual orientation, race and/or ethnicity, and relationship status. Due to the nature of the study, participants were also asked to indicate which social media sites they used and approximately how many hours per day they spent on social media. Participants were allowed to leave questions blank, but were excluded from the data analyses for leaving more than 50% of any questionnaire blank.

**Procedures**

This study obtained approval by the Human Subjects Review Council at Central Washington University. Because APNs are more commonly seen on the Internet than in other forms of media, this experiment took place entirely on computer using Qualtrics, an online survey software tool which presented the participants with the experimental condition and surveys as well as recorded data for the primary investigator. Participants completed the experiment on their own computers, and in their chosen locations.
Upon reading an electronic information form, each participant viewed a screen informing them that they would be viewing a blog which contained nudity. If participants indicated that they were 18 or over and consented to viewing nude images, the screen changed to show one of the six fictional blogs for thirty seconds. Following this, the screen automatically changed to the Measures of Interpersonal Attraction. Next, the participants completed the Sex-Positivity Scale, which was filled out after the Measures of Interpersonal Attraction to avoid priming participants to respond to the nude images with a different amount of sex positivity than they initially would have. Finally, the participants were directed to fill out the demographic survey. Participants were allowed to leave questions blank. When participants were finished with the demographics, the screen changed to show debriefing information as well as the researcher’s contact information.
CHAPTER IV

RESULTS

Data Screening

A total of 251 participant responses were collected from January to March, 2018. During data screening, 23 responses were removed due to failure to complete at least 50% of either the Measures of Interpersonal Attraction, the Sex-Positivity Scale, or the demographics, resulting in a retention of 228 participants for which demographic information has been previously provided. Prior to statistical analysis one case was excluded as a multivariate outlier determined by Mahalanobis distance, and one was excluded because their self-reported gender identity (i.e., agender) made dichotomous coding unfeasible. Overall 226 responses were used for a multivariate analysis of covariance (MANCOVA) to determine the effects of photograph gender, participant gender, and photograph anonymity on attractiveness perception while controlling for sex positivity. Prior to the test, visual inspection of scatterplots confirmed linear relationships among the three dependent variables of physical attraction, social attraction, and task attraction. The three types of attraction were found to be moderately correlated with one another; physical and social attraction, $r(222) = .65, p < .001$, social and task attraction $r(222) = .70, p < .001$, physical and task attraction, $r(222) = .56, p < .001$. Box’s M (82.98) was not significant, $p = .209$, indicating that there were no significant differences between the covariance matrices and that Wilks’ Lambda was appropriate.

Sex Positivity
A one-way between subjects analysis of variance (ANOVA) was conducted to assess any possible effects of the three levels of anonymity upon the covariate of sex positivity. The ANOVA revealed that anonymity level did not significantly influence sex positivity, F(2, 211) = 0.82, p = .442. This indicated that having participants view the experimental photograph and complete the Measures of Interpersonal Attraction before the Sex-Positivity Scale did not affect participants’ sex positivity scores. The scale produces scores between one and seven, with higher scores indicating greater sex positivity. For this sample of participants, the mean score was 5.04, and the standard deviation was 0.87.

**MANCOVA**

The MANCOVA analysis revealed an effect of photograph gender on the combined dependent variable of attractiveness, Wilks’ Λ = .830, F(3, 194) = 13.24, p < .001, multivariate η² = 0.170. The covariate of sex positivity also significantly influenced the combined dependent variable, Wilks’ Λ = .793, F(3, 194) = 16.90, p < .001, multivariate η² = 0.207. Follow-up univariate analyses of covariance (ANCOVA) indicated that physical attraction, F(1, 195) = 33.77, p < .001, partial η² = .147, social attraction, F(1, 195) = 25.598, p < .001, partial η² = .116, and task attraction, F(1, 195) = 9.758, p < .001, partial η² = .047, were all significantly affected by photograph gender. Sex positivity also significantly affected physical, F(1, 195) = 30.361, p < .001, partial η² = .134, social, F(1, 195) = 42.854, p < .001, partial η² = .179, and task, F(1, 195) = 12.572, p < .001, partial η² = .060, attraction. There were no effects or interactions involving photograph anonymity or participant gender. Table 1 presents unadjusted
dependent variable group means and correlations. Table 2 presents adjusted group means for photograph gender. Comparison of adjusted means indicates that female photographs were rated more favorably than male photographs across all three types of attraction.
Table 1

Unadjusted Means and Correlations (N = 228)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean</th>
<th>SD</th>
<th>Physical Attraction</th>
<th>Social Attraction</th>
<th>Task Attraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Attraction</td>
<td>18.26</td>
<td>5.75</td>
<td>——</td>
<td>.647</td>
<td>.564</td>
</tr>
<tr>
<td>Social Attraction</td>
<td>16.11</td>
<td>4.98</td>
<td>——</td>
<td>—</td>
<td>.701</td>
</tr>
<tr>
<td>Task Attraction</td>
<td>17.01</td>
<td>4.02</td>
<td>——</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Table 2

Adjusted Means for Photograph Gender

<table>
<thead>
<tr>
<th>Photograph Gender</th>
<th>Physical Attraction</th>
<th>Social Attraction</th>
<th>Task Attraction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Female</td>
<td>20.47</td>
<td>0.54</td>
<td>17.84</td>
</tr>
<tr>
<td>Male</td>
<td>16.05</td>
<td>0.53</td>
<td>14.48</td>
</tr>
</tbody>
</table>
CHAPTER V

DISCUSSION

Results indicate that the gender of the photograph target had a significant effect on how attractive participants found them. The female photograph target was rated as more physically, socially, and task attractive than the male photograph. This finding supported the researcher’s hypothesis that male photograph targets would be rated as less attractive than female photograph targets. Contrary to the researcher’s hypotheses, however, there were no apparent differences between photograph anonymity levels; participants did not rate the identifiable, anonymous cropped, or anonymous obscured photographs differently. The researcher’s hypothesis that male and female participants would rate the photographs differently was also unsupported. Male and female participants did not differ in how attractive they rated the photograph targets. Additionally, the covariate of sex positivity was significant, affecting ratings of all three types of attraction.

Photograph Gender

Originally, it had been hypothesized that male photograph targets would garner lower ratings of interpersonal attractiveness than female photograph targets. This was indeed the case, as the male photograph was consistently rated as less attractive than the female photograph, despite moderating for sex positivity. This is consistent with the work of Lasén and Garcia (2015). In their qualitative study, the authors found that men were somewhat uncomfortable with online sexualization. They disliked images of sexualized men, with some participants finding those images to be too reminiscent of gay or
effeminate men, but also disliked hypermasculine portrayals. Indeed, Lasén and Garcia note that while erotic images of women have been a popular subject of Western art, erotic images of men are more typical of pornography. Male participants in Lasén and Garcia’s study admitted to engaging in self-sexualization in order to gain female attention, rather than for their own enjoyment. The current findings are also consistent with the work of Smolak et al. (2014), who suggested that self-sexualization be thought of as a primarily feminine behavior. It is possible that the male photograph target garnered lower ratings of attractiveness because participants felt that they were engaging in too feminine a behavior, thus acting out of line with social gender expectations.

However, this effect may also have been caused by subtle differences in the arousal level depicted by the male and female nude images. In the male nude image, a fully erect penis could be seen at the bottom of the photograph. The female photograph, though also full-frontally nude, did not indicate such obvious signs of arousal. Future research should consider whether the nature of male anatomy makes online self-sexualization seem more risqué for males than females. Additionally, there is a possibility that participants were simply more desensitized to female nude images than to male nude images; Mount Saint Mary’s University (2016) found that in 2014, female nudity was three times more likely to occur in film than male nudity.

**Photograph Anonymity**

Contrary to the originally proposed hypotheses, ratings of attractiveness did not differ across anonymity categories; a finding that potentially indicates that people do not take anonymity into account when assessing attraction, and that any social disapproval of
riskier, identifiable photographs is negligible. Furthermore, the presence of a face in a
nude photograph did not increase physical attraction, at least not to a noticeable degree in
this experiment. It could be that most participants rated the nude photograph target lower
than they would a clothed photograph target, and the Measures of Interpersonal Attraction
were not sensitive enough to detect this. The inclusion of a clothed control image or the
use of an attraction measure designed specifically for nude images might reveal more
subtle effects in future research.

**Participant Gender**

Contrary to our expectations, no differences were observed in how men and
women rated the photographs on attractiveness. However, in this study there were no
distinctions among assigned viewing condition based on participants’ sexual orientation;
heterosexual women were just as likely to see a female nude image as a male nude image.
In the sample, 116 participants (50%) saw a photograph of the gender they were attracted
to, 95 (41%) saw a photograph of the gender they were not attracted to, and 16 (7%) were
not categorizable in this way due to their sexual orientation (i.e., bisexual). It could be
that matching participants to photographs of their preferred gender would result in higher
ratings of attractiveness. Additionally, controlling for asexuality may prove useful;
though Bogaert (2004) found that only approximately 1% of the population self-identifies
as asexual, their level of attraction to APNs may differ from individuals with other sexual
orientations. Additionally, non-heterosexual participants may have different attitudes
toward nude images, as Gromer-Thomas (2014) noted that homophobia is negatively
related to sex positivity. Future researchers may want to consider applying a matching
technique, in order to examine how attracted people are to nude images once their sexual orientation is accounted for. Future researchers may also wish to compare and contrast heterosexual and non-heterosexual participant attraction to nude images.

**Sex Positivity**

A sex positivity measure was included in the current experiment as a potential method of controlling for a self-selection bias, given that recruitment materials indicated that participants would be viewing nude images. The sample may have contained an overabundance of participants with strong opinions, either positive or negative, about nude images. According to Bethlehem (2010), such biases are common problems in online surveys. The use of the Sex-Positivity Scale was intended to mitigate these effects, and appears to have done so successfully; in the current research, sex positivity influenced ratings of attractiveness on all the attractiveness subscales. This is consistent with prior research indicating that people higher in sex positivity tend to hold more liberal sexual attitudes (Gromer-Thomas, 2014). Given these findings, continuing to use sex positivity as a mediating variable may be useful to researchers studying sexual behaviors. In this study, the researcher chose to administer the Sex-Positivity Scale after the Measures of Interpersonal Attraction, in order to avoid priming effects. Though an ANOVA indicated that presenting the scale measuring the dependent variable first did not affect the covariate of sex positivity, future researchers may wish to counterbalance the presentation order of the scales, to more thoroughly avoid order and priming effects.

**Review of Materials**
The Measures of Interpersonal Attraction functioned as expected with the participant sample, garnering high internal reliability estimates. This was congruous with the scales’ performances in previous literature, as McCroskey et al. (2006) and Daniels and Zubriggen (2014) found similarly high internal reliability estimates. McCroskey et al. and Daniels and Zurbriggen also noted the moderate correlations between subscales, which also followed suit in the current study. The Sex-Positivity Scale also performed as expected. A comparison of internal reliability estimates in the original validation by Gromer-Thomas (2014) and the current study indicated that the high internal validity of the original sample was maintained. Overall, both scales performed as anticipated.

Another important factor of this research was the nude photographs chosen as materials and used within the experiment. Two adults unaffiliated with the research or the institution volunteered their photographs to be used. These volunteers never met the researcher in-person, were contacted via Reddit, and communicated only via messaging with screen names. Experimenter care was taken to ensure that the photographs were similar in all regards besides gender with the man and woman depicted in the photographs having similar hair colors, skin tones, and age, and both took their photographs in a bathroom setting. To further minimize background differences, the researcher removed background items via Photoshop to better equate the images. Finding legal, ethically-sourced photographs which still garnered a modicum of reality proved difficult. There are many nude photographs available for purchase, but these are typically of highly attractive nude models photographed professionally.
Indeed, the use of professional or amateur models for sexuality research seems to be one of researcher opinion; Voracek and Fisher (2006) used porn stars and nude models for their analysis of female physical attractiveness. Holland (2006) criticized them for this decision, arguing that the models were a poor representation of an average woman’s body. Unfortunately, as there is very little research surrounding these topics, precedents for achieving ecological validity in nudity and attraction research have not yet been set. For this experiment, the researcher was searching for ordinary-looking individuals in nonprofessional settings, and therefore chose to contact amateur APN owners. Future researchers should consider the benefits and drawbacks of using either professionally or nonprofessionally sourced photographs.

Limitations

There were some limitations with this study. As with all experiments conducted online, there is the possibility of survey fraud. It is not difficult for a person to lie online about their age, gender, sexual orientation, or other important demographic characteristics. Generalizability could also be called into question, as the participant sample was young and located in a rural, conservative area of a predominantly liberal state. Several researchers have noted differences in sexual attitudes between political ideologies and age groups; Hershey and Sullivan (1977) noted that conservative participants were more likely to hold traditional views on sex roles than liberal participants, and Le Gall, Mullet, and Shafighi (2002) found that older and more religious participants were less likely to exhibit sexual permissiveness. There may be important differences in attraction to APNs between ages, levels of religiosity, and political
ideologies. Future researchers may also wish to analyze the relationships between participant, sex positivity, and interpersonal attraction in general.

Additional issues with generalizability can be attributed to the materials themselves, as both photograph targets were young, Caucasian, and blonde. Future researchers should consider replicating this study with more diverse populations and materials. As stated above, future researchers may also want to consider adding a clothed control image, a procedure to match participants to the photograph gender to which they are sexually attracted, or procedures to control for asexuality. Another possible limitation was the concept of task attractiveness; questions were somewhat ambiguous as to the nature of the task, and could have been misinterpreted as a sexual task (i.e., question 14 “You could count on him/her getting the job done” may have been interpreted as relating to sexual performance). Instructing participants to imagine a specific task scenario, such as a school or work project, may be useful to future researchers.

Conclusion

As Hampton et al. (2011) noted, social media usage is on the rise. With the advent of dating websites and apps, such as Match or Tinder, it has become clear that the Internet is becoming an integral part of human sexuality. More in-depth research on APNs is needed to assess the prevalence, frequency, and consequences of this behavior. A more complete comprehension of gender differences in APNs could help ease gender-based stereotypes of online behavior, aiding in preventing online harassment for both men and women. Furthermore, better understanding of APNs may help guide our understanding of computer-mediated sexuality. This could have practical applications for social media
sites, online dating services, and individuals wishing to understand their own sexuality as it relates to the Internet. Therefore, it is the author’s sincere hope that research on computer-mediated sexuality will continue to accumulate.
CHAPTER VI

REFERENCES


APPENDIX A

Simulated blog with female nude image

Anonymous Cropped condition. Identifiable conditions not shown for photograph owner anonymity. Pixelated for public viewing (participants saw a non-pixelated version).
APPENDIX B

Simulated blog with male nude image

Anonymous Cropped condition. Identifiable conditions not shown for photograph owner anonymity. Pixelated for public viewing (participants saw a non-pixelated version)