

Attachment Style, Tinder Use, and Permissive Sexual Attitude

by

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Abstract

Research has demonstrated that attachment anxiety and attachment avoidance plays a significant role in the development, maintenance, and satisfaction of adult romantic relationships (Hazan & Shaver, 1994). Technology has afforded individuals new ways to connect with potential romantic partners and Tinder is one of the most widely used mobile dating applications. The present study investigated the role of attachment anxiety and attachment avoidance on Tinder use. In addition, the effects of permissive sexual attitude on attachment orientation and Tinder use was explored. The relationship between gender and permissive sexual attitude was also explored. Results indicated that attachment anxiety, but not attachment avoidance was related to relationship seeking on Tinder. Additionally, gender was found to relate to permissive sexual attitude but did not moderate a relationship between attachment and sexual behavior on Tinder. Furthermore, no relationship was found between attachment avoidance and sexual behavior on Tinder, and no indirect mediation effect for permissive sexual attitude was found between attachment avoidance and sexual behavior on Tinder. Lastly, no relationship between attachment anxiety and frequency of Tinder use was found.

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CHAPTER I: INTRODUCTION

Background

Developing and maintaining secure and loving relationships is one of our primary tasks in life as social beings. At every stage of our life we need human connection to thrive, to grow, and to be healthy (Ainsworth & Bowlby, 1991). The way that individuals ultimately navigate this task is based on their earliest attachment experiences (Bowlby, 1982). This process has been extensively investigated by prominent researchers such as John Bowlby, Mary Ainsworth, and Mary Main, and their work is the cornerstone of Attachment Theory (Ainsworth & Bowlby, 1991; Karen, 1998; Wallin, 2007). According to attachment theory, our earliest relational experiences with our primary caregiver shape our social and emotional development and create a template by which to navigate our world (Karen, 1998; Wallin, 2007). This system is imbedded in an individual and is present from “the cradle to the grave” (Bowlby, 1977, p. 129).

In adulthood, the majority of individuals seek out their most important relationships in that of a romantic partner and attachment style plays a key role in this process (Schachner & Shaver, 2004). The avenues through which someone can find a partner have widely expanded over the last several decades with advancements in technology (Valkenburg & Peter, 2007). Today, people can connect virtually before meeting and therefore have access to many more potential mates than they likely would have in the past. Utilization of online dating and mobile application software to connect with others of romantic interest has changed the landscape of mate seeking behavior (Finkel, Eastwick, Karney, Reis, & Sprecher, 2012).

Attachment Theory

Attachment theory states that the formative bond with a primary caregiver lays the foundation for how an individual's emotional and social development is shaped (Bowlby, 1982). It is not only essential for survival in infancy but lays the groundwork for how one will relate to self and others throughout the lifespan (Brennan & Shaver, 1995). These early experiences lead one to develop an internal working model, or internalized belief about self and others, which subsequently affects how one thinks and behaves and shapes his/her interactions with others (Bowlby, 1979; Gentzler & Kerns, 2004). Children that have primary attachment figures that are attentive and attuned to their needs develop a secure attachment style, whereas individuals who have primary caregivers who are misattuned, neglectful, rejecting or inconsistent in attending to their attachment needs develop an insecure attachment style (Karen, 1998). Secure attachment fosters healthy self-esteem, ability to relate to others in an adaptive way, and propensity for developing stable intimate relationships (Matas, Arend, & Sroufe, 1978). Insecure attachment is related to lower self-esteem, difficulty with emotional regulation, and problematic relationships (Fraley & Shaver, 2000).

As people develop and mature into adults, their attachment patterns from childhood evolve into adult attachment styles which are manifested through two different dimensions; anxiety and avoidance (Brennan, Clark, & Shaver, 1998). Anxiety in this context refers to the fear that the "other" will not be available to them in time of need, and avoidance in this context refers to general distrust in the "other" and desire to maintain emotional distance from them (Schachner & Shaver, 2004). Attachment anxiety and attachment avoidance fall on a continuum; meaning individuals can be higher or lower on the dimensions each one independent of the other, but depending on the extent they experience each indicates how secure or insecure they are

(Fraley, Hudson, Heffernan & Segal, 2015). Secure individuals are low on avoidance and low on anxiety, preoccupied individuals are high on anxiety and low on avoidance, dismissive individuals are low on anxiety and high on avoidance, and fearful-avoidant individuals are high on anxiety and high on avoidance (Bartholomew & Horowitz, 1991). Preoccupied, Dismissive, and fearful-avoidant are all insecure, maladaptive types of attachment (Bartholomew & Horowitz, 1991). For the purpose of this study, assessment of attachment style will be continuous rather than categorical, looking at individual's levels of anxiety and avoidance.

Attachment and Sexual Relationships

The way an individual approaches and expresses their sexuality is shaped by attachment. Differences in attachment style have influence over the meaning people put on their sexual relationships (Feeney & Raphael, 1992). Attachment style has also been shown to influence the sexual attitudes people hold and the behaviors they engage in (Sprecher, 2013). Secure attachment is associated with the most favorable and satisfying sexual and romantic relationships, with individuals reporting higher levels of sexual satisfaction, greater levels of intimacy, and better sexual communication (Butzer & Campbell, 2008; Davis, et al., 2006; Feeney & Noller, 2004; Jonason, Hatfield & Boler, 2015). Secure individuals tend to prefer to engage in serious romantic relationships, have fewer partners, and engage in safer sex practices (Brennan & Shaver, 1995; Feeney, Kelly, Gallois, Peterson, & Terry, 1999; Schachner & Shaver, 2004). Avoidantly attached individuals, preferring self-reliance and autonomy, engage in sexual relationships that are less intimate, report lower sexual satisfaction, and are less interested in committed relationships (Davis et al., 2006; Schachner & Shaver, 2004; Sprecher, 2013). Anxiously attached individuals seek close relationships but experience difficult emotions that make it challenging to maintain stable relationships (Barbara & Dion, 2000; Stevens, 2014).

They are motivated to have sex to gain feelings of security and as an effort to increase their partner's feelings of love for them (Schachner & Shaver, 2004). Individuals who are high on both anxious and avoidant attachment are simultaneously motivated to seek proximity to others and to avoid them out of fear of abandonment (Paetzold, Rholes, & Kohn, 2015). They tend to have sex to reduce conflict, gain power, or out of insecurity that the other person may abandon them (Paetzold et al., 2015; Schachner & Shaver, 2004).

Permissiveness

Permissiveness refers to one's attitudes and values about sex, restrictive or unrestrictive. (Hendrick, Hendrick & Reich, 2006). Individuals who hold sexually permissive attitudes are more likely to find casual sex acceptable (Hendrick et al., 2006; Schmitt & Jonason, 2015; Sprecher, 2013; Sprecher, Treger, & Sakaluk, 2013; Weinberg, Lottes, & Shaver, 2000).

Research shows that individuals who hold permissive sexual attitudes are more likely to engage in more unrestricted sexual behaviors (Hendrick et al., 2006; Peterson & Hyde, 2011; Reis, 1967; Sprecher et al., 2013). Sexual attitudes have shifted over the last several decades (Petersen & Hyde, 2010; Sprecher et al., 2013; Twenge, Sherman & Wells, 2015). Before the sexual revolution of the 1960s, premarital sex was seen as taboo, whether or not people were engaging in sex outside of marriage (Twenge et al., 2015). Researchers have found that permissiveness has changed from generation to generation with young adults today holding more permissive sexual attitudes than 20 years ago (Sprecher et al., 2013; Twenge et al., 2015). Adults in the United States in the current decade (vs. the late 1980s) report having more sexual partners and a higher likelihood to have had sex with someone they just met or were not in a relationship with in the past year (Garcia, Reiber, Massey & Merriwether, 2012; Twenge et al., 2015). Overall

attitudes towards the acceptance of sex outside of marriage and outside the context of a committed relationship have increased (Twenge et al., 2015).

Permissiveness has been linked to attachment style (Drouin & Landgraff, 2012; Gentzler & Kerns, 2004; Schmitt & Jonason, 2015; Sprecher, 2013; Twenge et al., 2015). Individuals high in avoidance, particularly those with a dismissive attachment style have been found most likely to hold sexually permissive attitudes (Sprecher, 2013). Secure individuals tend to hold less permissive sexual attitudes (Feeney & Noller, 2004; Jonason et al., 2015; Paul, McManus & Hayes, 2000). Individuals who are low in permissiveness report preferring to combine love and sex, and therefore are more likely to engage in sexual behavior in the context of a relationship (Gentzler & Kerns, 2004; Petersen & Hyde, 2011; Sprecher, 2013). Furthermore, studies show that individuals with insecure attachment, particularly those high in avoidance, engage in more casual and/or consensual but unwanted sex (Beaulieu-Pelletier, Philippe, Lecours, & Couture 2011; Gentzler & Kerns, 2004; Sprecher, 2013).

Technology and Tinder for Pursuit of Romantic Relationships

Regardless of attachment style, most all individuals seek out some form of romantic connection with others (Baumeister & Leary, 1995; Birnie-Porter & Hunt, 2015; Feeney & Noller, 2004). Technology has afforded individuals more opportunities to take control over who they meet and be intentional in their pursuit of a prospective partner (Finkel et al., 2012; Gatter & Hodkinson, 2016; Gunter, 2008). Compared to traditional dating, technology provides people with access to others they would otherwise not meet, a way to communicate that is streamlined, and removes the uncertainty of whether the other person is single and/or interested (Finkel et al., 2012). In fact, approximately 40 percent (54 million) of single Americans have tried online dating (Golbeck, 2015) and 59 percent of Americans report they believe it is a good way to meet

someone (Smith, 2014). Additionally, a study found that the internet was the second most common way individuals reported meeting their partner (Rosenfeld & Thomas, 2010).

Another avenue technology affords to seek out potential romantic interests, and growing in popularity, is mobile dating applications (Gatter & Hodkinson, 2016). Tinder, one of the most widely utilized mobile dating applications, uses GPS from your phone to locate other users in your area that meet your basic search criteria (age, gender, sexual orientation, location radius). If two individuals express mutual interest in each other by swiping right on one another's profiles on the application, they will be matched and then have the opportunity to begin a chat and decide if they want to meet in person. This development has changed the landscape for how people pursue potential romantic partners in modern day (Gatter & Hodkinson, 2016).

Purpose of the Study

Research on attachment has been plentiful in the context of infancy, adolescence, and adulthood. Many researchers have investigated how attachment plays out in the context of romantic relationships in real-life settings, but there is a need for more research on how these attachment-seeking behaviors play out in the age of technology. More and more people are seeking love on the internet and through the use of mobile dating applications (Gunter, 2008; Golbeck, 2015). There have been limited studies on the utilization of online dating websites to seek partners (Finkel et al., 2012; Smith, 2014; Valkenburg & Peter, 2007), but virtually no scholarly articles on individuals' use of mobile dating applications. Tinder is one of the most widely used dating applications, with over 10 million daily users and growing (Tinder, n.d., para. 2). Given that Tinder serves as an outlet to find potential mates for a large and growing number of individuals, it is important to gain a better understanding of how it is being utilized. The purpose of this study is to explore the way that attachment anxiety and attachment avoidance

influence Tinder use; specifically, how attachment avoidance and attachment anxiety relate to relationship seeking, sexual behavior, and frequency of use. Since attachment has been found to play a pivotal role in development and maintenance of romantic relationships, assessing how attachment styles relate to Tinder use will be the central focus of investigation. Furthermore, the role of sexual permissiveness on attachment style and Tinder use will be assessed.

Significance to Counseling Psychology

Relationships are an important part of life and many individuals seek counseling as a result of relational difficulties or problematic patterns of relating. Romantic relationships effect one's physical and emotional wellbeing (Diener & Seligman, 2002). It is important for researchers and practitioners to understand the ways in which people seek out others and the role technology plays in shaping these interactions. To this researcher's knowledge, this is the first study that will look at attachment behavior on a mobile dating application, and the role permissiveness plays between attachment style and mate seeking behavior on Tinder.

Operational Definitions

Adult Attachment Style: Adult attachment style is defined as the internal working models of self and others based on a culmination of life experiences, especially early childhood experiences (Brennan & Shaver, 1995; Raby, Lawler, Shlafer, Hesemeyer, Collins & Sroufe, 2015; Schachner & Shaver, 2004). These models provide a template for how individuals navigate relationships with others and how they see themselves. There are two continuous dimensions that attachment styles are based on: attachment anxiety and attachment avoidance (Brennan et al., 1998). Individuals differ on each of these dimensions and this shapes their proximity seeking behaviors and self-concept (Bowlby, 1973; Wallin, 2007). The current study will look at attachment style based on anxiety and avoidance levels. Individuals low on

attachment avoidance and avoidance anxiety are labeled as secure, whereas individuals that are high on attachment anxiety and/or attachment avoidance are labeled as insecure. Attachment style will be measured using the experiences in close relationships revised (ECR-R) based on continuous scores as per the recommendation of the authors of the ECR-R. The ECR-R subscale scores (attachment anxiety and attachment avoidance) will be used to operationalize and define attachment style.

Permissiveness: Permissiveness is defined as an individual's attitudes towards sexual behavior; an individual's level of permissiveness is based on the extent to which they hold restrictive or unrestrictive sexual beliefs (Hendrick et al., 2006; Sprecher, 2013). Individuals high on permissiveness are more approving of sexual behavior in the context of uncommitted or casual relationships. Permissiveness can also be talked about in relation to people's sexual behavior. For purposes of this study, permissiveness refers exclusively to the attitudes people hold about sexual behavior rather than the sexual behavior they engage in. Permissiveness will be operationalized by using the Permissiveness subscale of the Brief Sexual Attitudes Scale (BSAS) by Hendrick and colleagues (2006).

Tinder Behavior: Tinder is a mobile dating app that individuals can download on their smartphone to match with others on the application. Tinder utilizes GPS enabled software on a person's smart phone to track their location. Using Facebook, Tinder allows the person to create a profile consisting of pictures and an optional short biography of up to 240 characters, as well as information about their education, career, and location. Individuals also have the option to link their Instagram account to their profile.

Tinder behavior will be operationally defined by scores on the Tinder Behavior Questionnaire. The Tinder Behavior Questionnaire consists of three subscales: Relationship

Motivation, Sexual Behavior, and Frequency of Use. The Tinder Behavior Questionnaire was developed specifically for this study. Relationship seeking will be operationally defined by scores on the Relationship Motivation subscale. Sexual Behavior will be defined by scores on the Sexual Behavior subscale. Frequency of Tinder use will be defined by scores on the Frequency of Use subscale.

Research Hypotheses

1. Use of Tinder for the purpose of relationship seeking will be negatively associated with attachment avoidance.

Research shows that individuals who are high in avoidance prefer relationships that lack intimacy (Gentzler & Kerns, 2004) and have low interest in seeking committed relationships (Shaver & Brennan, 1992).

2. Higher scores on attachment avoidance will be related to higher reports of utilizing Tinder leading to sexual behavior. Specifically, individuals with higher scores on attachment avoidance will report higher rates of sexual behavior with people from Tinder than individuals with lower scores on attachment avoidance.

Individuals high on attachment avoidance report a higher likelihood of casual sex (Brennan & Shaver, 1995; Gentzler & Kerns, 2001; Sprecher, 2013). They are more likely to seek out relationships that are short-term and devoid of the emotional connection that committed relationships require (Schachner & Shaver, 2004).

3. Frequency of Tinder use will be positively associated with attachment anxiety. Specifically, individuals with higher attachment anxiety will score higher on frequency of Tinder use than individuals with lower scores on attachment anxiety.

Individuals high on attachment anxiety are strongly motivated to seek proximity to others to assuage feelings of distress (Karen, 1998; Wallin, 2007). Attachment anxiety is related to difficulty coping with stress and a propensity to experience heightened states of arousal which makes their attachment needs great. For this reason, it is likely they will utilize Tinder at a higher rate than other attachment styles.

4. The relationship between Sexual Behavior on Tinder and attachment avoidance will be mediated by permissive sexual attitude. Individuals with higher scores on attachment avoidance will be associated with higher permissive attitudes and subsequently report higher amounts of sexual behavior on Tinder.

Secure attachment is related to more restrictive sexual beliefs and preferring sex in the context of a committed relationship (Brennan & Shaver, 1995; Jonason et al., 2015; Simpson & Gangestad 1991). Individuals high in attachment avoidance report higher rates of permissive sexual attitude and higher engagement in casual sex than those with lower attachment avoidance (Sprecher, 2013).

5. Gender will serve as a moderator between attachment avoidance and permissive sexual attitudes. Men who score higher on attachment avoidance will have more permissive sexual attitudes than men with lower scores on attachment avoidance. The relationship between attachment avoidance and permissive sexual attitudes will be weaker for women.

Research indicates that men generally hold less restrictive sexual attitudes, and that men with attachment avoidance have the least restrictive attitudes (Sprecher, 2013).

CHAPTER II: LITERATURE REVIEW

Attachment Theory

Attachment behavior is any proximity seeking behavior to another identified individual who is trusted to be better able to cope with this world (Bowlby, 1982). Infants are completely reliant on their primary care givers for survival and this instinctual need for proximity fosters the formation of an attachment bond that is said be formed by the time the infant reaches 12 months, though later disruptions can also cause complications in attachment (Bowlby, 1952, 1958). “The formation, maintenance, and renewal of that proximity begets feelings of love, security and joy...A lasting or untimely disruption brings one anxiety, grief, and depression” (Karen, 1998, p. 91). The parental care a child receives in his earliest years has been evidenced to affect his future mental health (Bowlby, 1952, 1969; Schmitt & Jonason, 2015) and it is believed to be essential that the infant experience a warm, intimate and continuous relationship with their primary caregiver in order to be mentally healthy (Bowlby, 1969, 1982). The absence of this continuous maternal care, termed maternal deprivation, leads to maladjustment which varies by the level of deprivation experienced (Bowlby 1952). Through his observations and review of other researchers’ work, Bowlby suggested when children experience severe neglect they go through three stages: protest, despair, and finally detachment. “If protest, despair, and detachment are the three primary responses of the young to separation from his mother, then we can see in these reactions (Bowlby says) the basis for the key emotional processes that govern our psychology. Protest is an embodiment of separation anxiety, despair is an indication of

mourning, and detachment is a form of defense” (Karen, 1998, p. 100). Bowlby asserted that while heredity played a role in psychological health, he believed that environmental factors precipitated whether a child would go on to develop pathology (Bowlby, 1981). The environmental factors that Bowlby believed were paramount in early development were: the loss or separation from a primary caregiver and the primary caregiver’s emotional attitude towards the child (Karen, 1998).

History of Attachment Theory

Attachment theory, before it was officially named, was the brain child of John Bowlby (1952). He started working towards exploring what would later be termed attachment through working in different environments with maladjusted children which sparked his interest (Ainsworth & Bowlby, 1991). This led him down the rich road to developing and elaborating upon his theory with the help of other notable researchers, such as Mary Ainsworth and Mary Main. Attachment theory emphasizes an ethological approach to personality development (Ainsworth & Bowlby, 1991). Bowlby was drawn to work done by ethologist Konrad Lorenz and his research on imprinting behavior in birds. Imprinting refers to the process of early bonding and Lorenz showed that this process took place quickly and firmly in the absence of feeding behavior (Karen, 1998; Ainsworth & Bowlby, 1991). Bowlby referenced Harlow’s work with Rhesus monkeys and their preference for a soft cloth monkey with no food over a wire monkey that provided food to show that the main drive in the infant is not that based on food or sex as proposed by other theorists, but by a need for attachment and security (Bowlby, 1982; Harlow, 1958; Harlow & Harlow, 1966). The biological function of attachment is that of protection, and while it is most apparent in early childhood, it continues throughout the life span and is most visible when an individual is under distress or in crisis (Bowlby, 1952, 1982).

Furthermore, ethology supported the assertion that attachment was an instinctual need, and when disrupted, the effects on development could be catastrophic (Harlow, 1958; Karen, 1998).

Bowlby initially became interested in attachment while doing volunteer work with maladjusted children at a residential school (Ainsworth & Bowlby 1991; Karen, 1998). Through his experiences during this time he came to believe that personality development was contingent upon the child's early experiences with their mother (or primary caregiver). He decided to further his education in the field of psychiatry, focusing on pediatrics, where he could conduct research to investigate his beliefs empirically (Ainsworth & Bowlby, 1991; Bowlby, 1969, 1977, 1986). Through working with children who had been separated from their mothers for various reasons such as war, sickness, or death, he was able to investigate how these separations affected development (Bowlby, 1969; Bowlby, Roberston, & Rosenbluth, 1952). The first population he was able to study was 44 juvenile thieves at the London Guidance Clinic (Bowlby, 1950). He compared these juveniles with a control group and found that they were much more likely to have experienced maternal deprivation or separation and was associated with the likelihood the child would have an affectionless character (Ainsworth & Bowlby, 1991; Bowlby, 1944, 1950). Beneath their antisocial demeanor Bowlby saw a profound and unreachable depression, misery and despair; he believed that their loving feelings never had the chance to develop or were swamped by rage at the loss of the maternal figure (Bowlby, 1944, 1950; Karen, 1998). While this group was illustrative of the effects of extreme deprivation, emotional disturbances could also be witnessed in populations where attachment disruptions were less severe (Ainsworth & Bowlby, 1991; Karen, 1998; Wallin 2007).

Bowlby's next large study on separation and loss in early childhood, titled *Maternal Care and Mental health* focused on homeless children (Bowlby, 1982). He looked at research done on

children in adoptive homes, foster care, and institutions and found that early maternal separation led to symptoms including: superficial relationships, lack of feeling towards others, deceitful and criminal behavior, deficiency of emotion, and concentration difficulties (Bowlby, 195; Karen, 1998). Bowlby's (1951) extensive review of this research led to the following conclusions. First, delaying good mothering delayed until after the first 2 and a half years of life leads to irreparable consequences. Second, some corrective mothering in the second half of their first year can lead to reduction in harm. Third, if an attachment bond is not secured by the age of 12 months, there is great difficulty in nurturing the capacity to create such bonds within the individual.

Around this time, Bowlby was joined by researcher Mary Ainsworth, who had also been conducting research on interpersonal bonds through the lens of "security theory" which she later drew from in her work on attachment (Ainsworth & Bowlby, 1991). Ainsworth was committed to studying the process of attachment through direct observation and had the opportunity to do so while in Uganda, where she observed 28 babies and their mothers (Ainsworth, 1967). She visited their home every two weeks over the course of nine months. She was able to see the infants respond to their mothers through attachment behaviors such as crying, smiling and vocalizations. She also was able to observe how the children behaved in relation to their mothers once they were able to crawl. She noted how they would maintain conscious awareness of their mother's location when they ventured away, and how they would periodically return to her either through gaining her attention or through proximity (Karen, 1998). She stated, "The mother seems to provide a secure base from which these excursions can be made without anxiety" (Ainsworth, 1967, p. 345). She documented all these observations in her book *Infancy in Uganda*, where she discussed her concept of the "secure base" and introduced her conception of

what leads to securely and insecurely attached children (Ainsworth & Bowlby, 1991; Karen, 1998).

Ainsworth's work in Uganda was later used as a springboard for her famous "strange situation" experiment. She was curious to see what attachment behaviors would look like when the child was placed in an unusual environment. She formulated a study where she would have mother and child (1 year of age) pairs come to her lab. The mother and child would be left in a room full of toys for stimulating exploration. The pair would be joined by a stranger and then the mother would leave the baby with the stranger momentarily and then return. The stranger would then leave followed by the exit of the mother, leaving the child entirely alone. The stranger would then return, later followed by the final return of the mother. Ainsworth and her team observed the child's responses to all the scenarios of departures, absences, and returns. Secure children sought their mother when distressed, were confident in her availability, became upset when she left, and eagerly greeted her upon return.

The ambivalently attached insecure children were the most overtly anxious and distressed by separations. They exhibited behavior of desperately wanting their mothers to return but when they did, they responded with proximity seeking and resistant angry behavior all at the same time. They were also the group that was most difficult to soothe and pacify. The avoidantly attached insecure children would show various levels of distress with the departure of their mothers, but were quick to shut down their distress and were more responsive to the stranger than the ambivalently attached children. They depended less on their mother for secure base, sometimes attacked her with random acts of aggression, and showed little or no interest in their mother upon her return (Karen, 1998). Though these children might display behavior that could

be construed as independent, their response actually was indicative of detaching emotionally as a defense to cope with a rejecting parent.

Ainsworth developed four scales to help her delineate these different attachment bonds: How often was the mother sensitive to her child's signals; how much acceptance and rejection did she display towards her child; did she cooperate with her child's desires and rhythms or did she interfere; and finally, how often was she available to or ignore her child (Karen, 1998, p. 155). The mothers of the two insecure groups (avoidant, ambivalent) scored low on all four scales. The difference between the two is that the mothers of the avoidant children were significantly more rejecting, harsh, and showed little emotional expression towards their children and the mothers of the ambivalent children were extremely inconsistent, chaotic and showed a clear lack of ability to respond to their children in an attuned way (Karen, 1998). Mary Ainsworth's groundbreaking study gave credence to what Bowlby had been theorizing about the influence of parent's behaviors on the child's psychological development.

Thanks to work by researchers like Mary Main and Alan Sroufe, the field of attachment was able to look at how attachment progressed as the child aged (Main & Cassidy, 1988; Sroufe, 2005). Mary Main was a student of Mary Ainsworth and was able to work with her on her strange situation study. She later moved to Berkeley where she replicated and extended Mary Ainsworth's work. Interested in attachment continuity, she was able to gather child-parent dyads to participate in the strange situation experiment, and assess them again at the age of six and finally at age 19 (Hesse & Main, 2000; Main & Cassidy, 1988). To assess individuals at age six, she conducted an experiment similar to the strange situation, in that the parent and child went through separation and reunion. While the strange situation focused on the infants' bodily movements and other nonverbal behavior to assess attachment, Main's study with the six year

olds focused on their linguistic responses as well. She was looking at how these attachments had been internalized in their internal working models and would manifest themselves through the way they responded to different scenarios; focusing on how they spoke about certain things as well as what they said. The study showed that individuals' attachment at the age of one remained fairly stable with 84% of the sample classified with the same attachment style they had in infancy (Main & Cassidy, 1988).

Main's research also provided evidence for a fourth category of attachment, which she labeled disorganized/disoriented. Main and other researchers at the time were finding that there were a group of children that seemed to be unable to be classified in the three categories of attachment proposed by Ainsworth. This difficulty led Main to further investigate behaviors of infants during the strange situation and led to the fourth category, disorganized/disoriented. These infants were found to display "conflict" behavior towards their primary caregivers. Though they displayed a wide variety of behaviors one common thread was that "they all exhibited disorganization, or an observed contradiction in movement patterns" (Hesse & Main, 2000, p. 1099). Disorganized/disoriented attachment has been found to be present when the child is fearful of the primary attachment figure and is associated with maltreatment by the primary caregiver or experiences of witnessing the primary caregiver themselves being frightened or dissociative (Hesse & Main, 2000; Wallin, 2007). Disorganized/disoriented children also are at the greatest risk for developing psychopathology (Hesse & Main, 2000).

Sroufe and colleagues (1978) looked at attachment continuity in a group of 48 children. He and his colleagues first brought mother and children pairs in at the age of 18 months and performed the "Strange situation" experiment that Mary Ainsworth first created. They then categorized their attachment style. They followed up with these participants at the age of 2 to

look to see if their attachment style remained stable. They gave the children a tool solving task in the presence of their primary caregivers (Matas et al., 1978; Sroufe, 2005; Sroufe, Egeland, Carlson, & Collins, 2005). The children previously classified as secure approached the task with enthusiasm and persistence and actively sought assistance from their primary caregiver when needed, while those who had been categorized as insecure became easily frustrated, displayed little effort, became distressed, were oppositional, failed to seek help, or sought help from the experimenter rather than their primary caregiver (Matas et al., 1978; Sroufe 2005). They again observed attachment behaviors at the age of 4-1/2 years old. They found that secure children at this age are effective leaders and followers, engage well with peers, and exhibit empathy towards others. In contrast, the insecurely attached children exhibited isolating or aggressive behavior, were impulsive or unresponsive in their socializing behavior, and were inappropriately or overly reliant on their teachers (Sroufe, 2005; Sroufe et al., 2005).

Sroufe and colleagues (2005) also set out to look at this progression with children in relation to Bowlby's hypotheses about the role of attachment on the development. Specifically, they looked at self-reliance, emotion regulation, and social competence. Bowlby had hypothesized that a secure attachment foundation would profoundly influence the child's development of these three constructs. Children with anxious attachment, avoidant and ambivalent-resistant were found to be overly reliant on their teachers compared to their secure counterparts during their nursery school project, where they utilized a simulated classroom setting (Sroufe et al., 2005). They observed the same pattern when reassessing these same children at the age of 10 at summer camp (Sroufe et al., 2005). Drawing again from their preschool and summer camp data, Sroufe and colleagues (2005) found that securely attached children were more self-confident, had higher self-esteem, and were more ego-resilient than their

anxiously attached counterparts. They were more able to manage stress and adapt to unpredictable environments. Furthermore, they were more socially adept, displayed less isolating behaviors, and were more empathic towards their peers; the avoidantly attached children showed more isolating behaviors, while the ambivalent-resistant children were more likely to stand near a social group, wanting to be involved, but failing to have the appropriate skill to appropriately involve themselves (Sroufe, 2005; Sroufe et al., 2005).

Child Attachment Style

Researchers have found through empirical work that four distinct attachment styles are present in infants and children (Ainsworth, 1969; Ainsworth & Bell, 1970; Ainsworth & Bowlby, 1991; Bowlby, 1951, 1969, 1982; Main & Cassidy, 1988; Main & Solomon, 1986; Matas et al., 1978; Raby et al., 2015; Sroufe, 2005). Secure attachment is characterized by flexibility and resilience (Raby et al., 2015; Sroufe, 1979). Securely attached children demonstrate adaptive behavior towards stress and the ability to appropriately seek support (Main & Cassidy, 1988; Matas et al., 1978; Sroufe, 2005). Children with secure attachment have good self-esteem, are open with trusted others, are comfortable with physical contact, and engage in meaningful interactions (Raby et al., 2015; Sroufe, 1979). They have close relationships with peers and are able to lead as well as follow in group settings (Raby et al., 2015).

Children who are classified as avoidant can be aggressive and defiant (Main & Cassidy 1988). They may also be isolated or disliked by their peers. At preschool age they are more likely to hang near their teachers than the other children and withdraw when they are in pain (Raby et al., 2015). They tend to have emotionally distant relationships with their parents and others, and they do not like physical contact. They continue to have difficulty with peer

relationships and are likely to experience isolation in middle childhood, and, if they do have friends, they tend to be jealous.

Children classified as ambivalent/resistant are easily overwhelmed and worrisome. They tend to be less mature than their peers and at preschool age exhibit dependent behavior on their teachers (Raby et al., 2015). They are especially at risk for being bullied. Their relationships with their parents in childhood are characterized by both warmth and hostility and they may experience separation anxiety from their mothers. In middle childhood they struggle with peer relationships. They want to be close but seem to lack some of the skills for sustaining meaningful friendships.

Disorganized attachment in childhood is characterized by behavior that is controlling or dominating of their parent, sometimes taking on the role of the parent (Main & Solomon, 1986; Paetzold, et al., 2015). They are said to avoid closeness with their parents while also feeling terrified of abandonment. These children tend to struggle with peer relationships and with adapting to different situations. It is very common that they have been maltreated or experience some sort of trauma (Main & Solomon, 1986; Paetzold et al., 2015).

Adult Attachment Theory

Adult attachment theory was first proposed by Hazan and Shaver (1987) when they looked at adult romantic relationships as an attachment process. While other theorists had proposed that attachment shaped relationships through the lifetime, Hazan and Shaver (1987) were the first to investigate this empirically in the context of adult romantic relationships. Attachments are born out of close physical proximity and proximity seeking (Bowlby, 1969). In childhood and infancy, an instinctual need to be cared for is the motivation for proximity seeking. A child's primary attachment relationship is usually with a parent. In adulthood the

primary attachment is usually with a peer, typically a sexual partner (Hazan & Shaver, 1994). Unlike in early attachment relationships, relationships in adulthood are reciprocal in nature and often require the integration of three behavioral systems: attachment, caregiving, and sexual mating. In childhood, proximity seeking attachment behaviors are for the purpose of comfort and security, while in adulthood people seek proximity for comfort, caregiving, and/or to engage in sexual activity (Hazan & Shaver, 1994). Relationship satisfaction is based on basic needs for security, caregiving, and sexual gratification (Feeney & Noller, 2004). Research findings indicate that sensitive parental caregiving in infancy and childhood forecasts an individual's competence in romantic relationships as an adult (Raby et al., 2015). The expectation and trust one has for another's ability to meet these needs is largely based on past relationship experiences, such as early attachment experiences (Roisman, Madsen, Hennighausen, Sroufe, & Collins, 2001; Sroufe, 2005). Furthermore, what a person seeks in a relationship from another is based on their attachment style. Individuals who are more avoidant, for example, are likely to seek relationships that are low in intimacy (Simpson & Gangestad, 1991). Evidence suggests that individuals seek out relationships that confirm one's attachment expectations (Hazan & Shaver, 1994).

Attachment is comprised of internal working models of self and others. Positive models of the self, include: high self-esteem, feelings of competence, and a general sense of worthiness that is not contingent on others (Domingue & Mollen, 2009; Main, Kaplan & Cassidy 1985). A negative model of the self consists of self-worth that is based on approval from others and a general view of the self as unlovable. A positive working model of others is characterized by a general belief that others are loving, trustworthy, and responsive; while a negative model of others consists of an avoidance of intimate connection with others and viewing others as

untrustworthy, rejecting and unavailable (Domingue & Mollen, 2009). Taken together, view of self and others indicates an individual's attachment style. These beliefs are suggested to create a cycle, where experiences shape beliefs, which subsequently affect behavior and relationship outcomes (Hazan & Shaver, 1987).

Adult Attachment Styles

Distribution of attachment styles across the general population has been found to be about 60% secure, 15% avoidant, 10% anxious, and 15% both anxious and avoidant (Wallin, 2007). Secure attachment is associated with a caregiver that was warmly attuned and responsive. Secure individuals hold a positive view of self and others and seek mutual interdependence in their relationships with others. They report the highest level of relationship satisfaction and appropriately seek support from others.

Anxious individuals have a negative view of self and a positive view of others (Wallin, 2007). Anxious attachment is characterized by worry about whether others will be reliable and consistent in their availability (Hazan & Shaver, 1987). As a result, individuals who are anxiously attached tend to spend a great deal of mental energy and behavior towards making sure significant others are engaged and available. Obsessive preoccupation with partner, jealousy, fear, loneliness, and anxiety are experienced in attachment relationships of those with anxious (preoccupied) attachment (Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987; Schachner & Shaver, 2004). Reports of low self-esteem, dysfunctional anger, inappropriate disclosure, and asserting their own attachment needs with lack of regard for their partner's needs are also characteristic of anxious attachment. They also lack confidence that their partners will be able to meet their needs. Not surprisingly, they have a higher rate of romantic dissolution than individuals with secure attachment (Hazan & Shaver, 1994).

Avoidant (dismissive) attachment, the result of consistently unavailable primary attachment figures, is characterized by extreme independence and avoidance of intimacy (Brennan & Shaver, 1995). Avoidant individuals hold a positive view of the self and negative view of others (Wallin, 2007). Avoidantly attached adults hold negative attitudes towards relationships, maintain efforts to keep significant others at a distance, and have a higher rate of breakups than securely attached individuals. They are more likely to engage in casual sexual relationships, and report lower sexual and relationship satisfaction (Beaulieu-Pelletier, et al., 2011, Davis, et al., 2006). Others tend to perceive them as hostile and they have a tendency to socially isolate.

Individuals high on both attachment anxiety and avoidance (fearful-avoidant), which is associated with maltreatment or trauma, hold a negative view of self and others (Wallin, 2007). These individuals believe that they are unlovable and are motivated to seek attachments with others for self-validation but simultaneously have intense fear of rejection which motivates them to avoid attachment relationships. They seem to be stuck in a never ending approach avoidance conflict which makes it difficult for them to attain and maintain attachment relationships (Reis & Grenyer, 2004).

Adult Attachment and Romantic Relationships

When it comes to romantic and sexual behavior, research suggests that an individual's attachment history shapes their sexuality and caretaking behaviors and differences in attachment style have influence over the meaning people put on their sexual relationships and their sexual attitudes (Feeney & Noller, 2004; Feeney & Raphael, 1992). Feeney and Noller (2004) state that "romantic love involves attachment, caregiving and sexuality" (p. 184), and as stated by Shaver

and colleagues, all three of these systems are at risk of becoming distorted by negative interpersonal experiences (Shaver, Hazan, & Bradshaw, 1988). Shaver et al. (1988) noted,

Attachment is preeminent to the other two behavior systems (caregiving and sex) because attachment comes first and forms the models for ourselves and others and therefore shapes the relationships we develop and subsequently the interactions we have with others we relate with. (p. 71)

Securely attached individuals show patterns of long term stable relationships and are open to sexual exploration and trying new things, have higher frequency of sexual intercourse (within committed relationships) than insecurely attached individuals. They also report enjoying sex significantly more than individuals with insecure attachment styles (Tracy, Shaver, Albino, & Cooper, 2003). Securely attached individuals also tend to have a love style that is more selfless, are low on game playing (Gentzler & Kerns, 2004; Schachner & Shaver, 2004), and are more effective at communicating their sexual needs (Khoury & Findlay, 2014). Attachment security is related to the belief that sex should be restricted to committed relationships and avoidance of casual sexual relationships (Brennan & Shaver, 1995; Jonason, et al., 2015; Simpson & Gangestad 1991). College students who have never had a “hook up” rate themselves high on attachment security (Paul et al., 2000). Securely attached individuals tend to partner with other securely attached individuals, and overall partnering with a securely attached individual leads to higher reports of relationship satisfaction (Brennan & Shaver, 1995).

Insecurely attached individuals are generally low in trust and tend to have a tougher time maintaining stable relationships and enjoying sex and intimacy (Brennan & Shaver, 1995; Hazan & Shaver 1987; Kirkpatrick & Davis, 1994). Both anxious and avoidant attachment is related to lower sexual satisfaction than secure attachment (Butzer & Campbell, 2008). Davis and

colleagues (2006) found that insecurely attached people's sexual strategies, motives, and feelings are associated with dissatisfying sexual outcomes. They fail to communicate sexual needs as a result of learned expectations of what happens when you express your needs to close others (Davis et al., 2006). Khoury and Findlay (2014) conducted an illustrative study and found an association between attachment avoidance and lower sexual satisfaction that was mediated by inhibited communication; however, anxious attachment was not related to sexual satisfaction. Birnie-Porter and Hunt (2015) found that the relationship between anxious attachment and sexual satisfaction was more complicated because it was highly dependent on their partner's perceived sexual satisfaction.

Insecurely attached individuals were more likely than securely attached individuals to send sexually explicit text messages to others (Drouin & Landgraff, 2012; Sprecher, 2013). Avoidant attachment is related to reports of sending sexually explicit images and texts while anxious attachment is related to higher frequency of sexually explicit texting. Furthermore, attachment avoidance and anxiety were also both linked with substance use prior to sexual encounters (Brennan & Shaver, 1995; Feeney, Peterson, Gallois, & Terry, 2000; Tracy et al., 2003).

Anxiously attached individuals have a difficult time dealing with emotion regulation and impulse control (Brennan & Shaver, 1995) and report a higher break up rate (Hazan & Shaver, 1987) and lower relationship satisfaction (Butzer & Campbell, 2008; Fenney & Noller, 2004). They are also most likely to experience passionate love and a love style that is dependent, and they experience obsessive and jealous feelings at a higher rate (Collins & Read, 1990; Feeney & Noller, 1990; Hatfield, Brinton, & Cornelius 1989; Hazan & Shaver, 2004; Shaver & Hazan, 1988). Anxious attachment is also related to worry about physical attractiveness and

acceptability to partner (Hazan et al., 1994) and a concern that someone else might take their partner from them (Schachner & Shaver, 2002). High attachment anxiety also related to poor communication, doubt about self-worth, strong feelings of attraction, yearning for intimacy, and belief in love at first sight (Feeney & Noller, 2004; Feeney, Noller, & Callan, 1994; Hazan & Shaver, 1987). Furthermore, research shows that individuals with anxious attachment prefer the affectionate parts of intimacy over genital aspects such as vaginal intercourse (Hazan et al., 1994), and are more likely to experience intrusive thoughts during sex compared to other attachment styles (Birnbaum, 2007). They are more likely to use sex as a barometer for the quality of their relationship, deferring to their partner, feeling sexually anxious and these all serve as barriers to getting their needs met emotionally and physically during sex (Butzer & Campbell, 2008; Davis et al., 2006). Anxious individuals were unable to experience passionate emotions during sex, possibly due to fear (Tracy et al., 2003).

Schachner and Shaver (2004) conducted a study to look at sexual motives and found that anxiously attached individuals were motivated to have sex based on their insecurities and to fulfill their need for intimacy. The following reasons were found to be the primary motivators for engaging in sexual acts with their partner: to feel valued, to feel overpowered, to induce their partner to love them more, to feel more affirmed and empowered (Schachner & Shaver, 2004). Higher avoidance and anxiety for both sexes was related to having an external locus of control about sex, feeling less responsible or in control of their sexual interactions (Feeney et al., 2000).

Hazan, Zeifman and Middleton (1994) found that anxiously attached women were likely to engage in voyeurism, exhibitionism, and bondage, while anxiously attached men were much more reticent in their sexual expression. In men, greater anxiety is associated with more restrictive sexual behavior and a lower likelihood to use sex as a coping mechanism or to bolster

self-esteem; and these men may be especially susceptible to performance anxiety concerns (Cooper, Pioli, Levitt, Talley, Micheas & Collins, 2006; Feeney & Noller, 1996; Gentzler & Kerns, 2004). In women, higher level of attachment anxiety is related to higher rates of sexual behaviors, higher likelihood of infidelity if partnered, lower age of first sexual intercourse, and higher reports of using sex to increase feelings of self-worth (Bogaert & Sadava, 2002; Cooper et al., 2006; Cooper, Shaver, & Collins, 1998). Anxious (preoccupied) women are also prone to sexual coercion (Davis et al., 2006) and engaging in unwanted but consensual sex (Gentzler & Kerns, 2004). Anxious attachment was also found to be strongly correlated with unsafe sex practices for both genders, particularly failure to discuss sexually transmitted disease with partners or use condoms (Feeney et al., 1999). Feeney and Noller (2004) propose that unsafe sex practices could be a result of using sex to forge intimacy with desired partners. Anxious attachment is also related to the highest reports of sexual fantasy of all the attachment styles, with themes around being helpless and irresistibly desired (Birnbaum, 2007).

Insecurely attached individuals who are high on avoidance report less interest in romantic relationships, especially a long-term committed relationship (Shaver & Brennan, 1992). They, like the anxiously attached, report low relationship satisfaction and higher break up rates (Hazan & Shaver, 1987; Kirkpatrick & Davis, 1994). Simpson and Gangestad (1991) proposed that avoidant individuals, as a result of having a distant or rejecting caregiver as a child, develop an unrestrictive sexual style, seeking out shorter term and more casual sexual relationships. “Attachment avoidance interferes with intimate related sexuality because sex inherently calls for physical closeness and psychological intimacy, a major source of discomfort for avoidant individuals” (Tracy et al., 2003, p. 141). Avoidant adults score high on willingness to have sex outside of a relationship, hold more permissive sexual attitudes, engage in more one night stands

and casual sex encounters, and have a higher number of sexual partners (Brennan & Shaver, 1995; Gentzler & Kerns, 2001; Schachner & Shaver, 2002; Simpson & Gangestad, 1991). They also report that they have a low desire for intimacy, are less likely to fall in love (Hatfield et al., 1989), and are more likely to exhibit a game-playing love style (Shaver & Hazan, 1988).

Additionally, Feeney and colleagues (1993) found that intimate acts such as mutual gazing, hand holding, and verbally expressing love during sexual intercourse are negatively correlated with an avoidant attachment style (Feeney, Noller, & Patty, 1993). Avoidant individuals also report inability to experience positive emotions besides passion during sex, possibly because of their discomfort with intimacy (Tracy et al., 2003). Though they engage in more casual sexual encounters, there is no evidence suggesting they have a higher sex drive, which supports the idea that the behavior reflects a preference for less intimate encounters based on their attachment style (Schachner & Shaver, 2002). In fact, one study found that avoidant adolescents reported lower sex drives and feeling less sexually competent (Tracy et al., 2003). Birnie-Porter and Hunt (2015) also found that avoidant attachment was associated with the lowest report of sexual satisfaction (with secure attachment reporting the highest) except when sex takes place in a casual or hook-up scenario. In other words, sexual satisfaction for avoidantly attached individuals was low with committed partners and even friends-with-benefits type relationships, but high when with a person they did not know very well (Birnie-Porter & Hunt, 2015). They proposed this could be due to the fact that sex and emotion is essentially divorced from each other in hook-up relationships, but not other types of relationships.

Schachner and Shaver's (2004) study on sexual motives and attachment found that individuals with an avoidant attachment style are motivated to have sex for the following reasons: to fit in with the peer group, because of peer pressure, and for ego related reasons such

as bragging rights (Schachner & Shaver, 2004). They found no evidence to support engagement in sexual activity to promote intimacy or express emotion. Furthermore, when looking at gender, they found that women high on avoidance tend to avoid sexual activity more than securely and anxiously attachment women (Shachner & Shaver, 2004). Lastly, for both men and women, higher avoidance was linked with partaking in more unwanted but consensual sexual experiences (Davis et al., 2006; Gentzler & Kerns, 2004; Paetzold et al., 2015; Shachner & Shaver, 2004). Individuals high in avoidance may be motivated to have unwanted but consensual sex to avoid dealing with the alternative (upset partner, talk about feelings) or may prefer to have sex instead of dealing with other types of intimacy (Gentzler & Kerns, 2004; Paetzold et al., 2015).

Beyond sexual behaviors in relationships, attachment shapes many other attachment seeking behaviors related to emotional regulation. Pascuzzo, Cyr, and Moss (2013) conducted a study to look at the emotion regulation strategies of adults in romantic relationships. They found that securely attached individuals engage regularly in support-seeking when distressed. They found that this was not typically the case for insecurely attached individuals in romantic relationships. They found that anxiously attached individuals adopt strategies centered around negative affective states, such as catastrophizing and ruminating, but don't typically seek support from their partners. This provides support for previous studies that also found no association between anxious attachment and support-seeking (Collins & Feeney, 2000; Fraley, Davis & Shaver, 1998). This differs from the finding by Shaver and Mikulincer (2002) that found anxiously attached individuals engage in maladaptive support-seeking behaviors from partners such as clinging, controlling, or becoming overly dependent. In the same vein, Mikulincer and Shaver (2007) suggested that individuals with an anxious attachment style may seek support but in an indirect way to avoid partner abandonment. When it came to individuals with an avoidant

attachment, Pascuzzo and colleagues (2013) found that these individuals “suppress activation of their attachment systems by inhibiting support-seeking behaviors” (Pascuzzo et al., 2013, p. 98). They do this in order to avoid rejection and unwanted closeness to their romantic partner. This study also looked at the longitudinal attachment patterns of participants from adolescence to adulthood to show empirical evidence of the stability of these patterns, and evidence that they tie back to the coping strategies internalized in childhoods through adolescence and into adulthood are directly the result of interactions with their primary caregivers. This is robust evidence for attachment playing a monumental role in how we relate to our romantic partner as a result of our earliest years (Pascuzzo et al., 2013).

Researchers have also investigated how individuals with different attachment styles deal with positive and negative events in relationships. When it comes to experiencing a transgression or a hurtful behavior by their partner, avoidant individuals, though exhibiting physiological arousal, do not report being overly angry and they use strategies to distance themselves from any negative emotion as a defense. They also attribute hostility to their partner even when the partner hasn't displayed any hostile intent (Mikulincer, 1998). Avoidant individuals are also perceived by others to have a more hostile disposition and are less likely to forgive others (Mikulincer, Shaver, & Slav, 2006); instead they are more likely to seek revenge or remove themselves from the situation (Shaver & Mikulincer, 2008). Avoidantly attached individuals are also least likely to accept partner faults (Shaver, 1987).

In contrast, anxious individuals become hyperactivated by negative events and experience intense anger which leads to rumination and then feelings of sadness and despair after the negative event (Mikulincer, 1998). Additionally, they hold a negative expectation about how their partner will react to their episode of anger and have ambivalent or negative perceptions of

the partner's intentions when hurt. When they feel their partner is being insensitive, they are more likely to experience anger and depression (Bowlby, 1973; Shaver & Mikulincer, 2003, 2008).

Attachment style also plays a role on one's propensity to experience positive emotions. Secure individuals report higher levels of joy, happiness, interest, and affection (Mikulincer & Shaver, 2007). Both avoidant and anxious individuals are less likely to experience positive emotions, especially avoidant individuals since they tend to distance themselves from emotional material in general in relationship to others. In regards to feelings of gratitude, avoidant individuals were the least likely to experience this emotion. Anxious individuals were able to experience it initially but then also to experience the downside, recalling times when they felt loved and happy and remembering how it ended negatively (Mikulincer et al., 2006; Shaver & Mikulincer, 2008).

Attachment style characterized by high anxiety and avoidance (fearful-avoidant) in romantic relationships is an area that is in need of further investigation. Paetzold, Rholes, and Kohn (2015) have sought to do this by developing a measure to uniquely assess this style of attachment. From their research they found the following implication for fearful-avoidant individuals' romantic relationships. Individuals with fearful-avoidant attachment are more likely to use sex as a way to resolve conflict when their partners are angry as a way to self-protect. They may also tend to seek sexual partners who are weak or vulnerable in an attempt to gain power and minimize perceived threat to the self. Therefore, they are likely to engage in more unwanted and nonconsensual sex than the other attachment styles and are motivated to have sex with their partner so that the partner won't leave and they won't feel abandoned (Paetzold, et al., 2015; Schachner & Shaver, 2004).

Paetzold and colleagues (2015) assert that fearful-avoidant individuals are also likely to perceive their partners as hostile and unsupportive, which likely leads them to experience low satisfaction and feelings of loneliness in their relationships. Since fearful-avoidant individuals are unable to form trusting and coherent bonds, they are often confused by their relationships. They seek out support but withdraw from partners before it can be received. They generally score high on anger and hostility and display a pattern of attack and retreat in relationships, which makes it difficult for them to maintain a stable and loving attachment. Furthermore, they are low in openness and self-disclosure which creates a barrier to emotional intimacy, thus making it easier for them to exit relationships and leads to higher relationship dissolution. As partners, they are likely to struggle with caretaking and supportive behaviors since they find their partner's distress upsetting and may show patterns of compulsive caretaking that feels aggressive and intrusive rather than empathic.

Dating in the Digital Age

Individuals used to rely on meeting people by chance or through friends, family or acquaintances. Other avenues people utilized were matchmakers or placing personal advertisements in newspapers and magazine. With the advancements in technology, people were provided new avenues for seeking out mates, such as through online dating sites and more recently on mobile applications on their smart phones. A unique feature of mobile dating apps is that they allow people access to others based on their current location and in real time. Among the participants who met their partners between 2007 and 2009, 22% of the heterosexual couples had met on the Internet, which made the Internet the second most-common way to meet a partner, only behind meeting through friends (Rosenfeld & Thomas, 2010).

Finkel and colleagues (2012) set out to investigate how online dating has changed the landscape of seeking romantic interests. Dating sites claim they have altered the way people date through access, communication, and matching. In regards to access, online dating affords individuals with access to, and the opportunity to, evaluate potential mates that they otherwise would likely not come in contact with. Communication is altered in that people begin talking through computer-mediated communication (CMC), messaging each other back and forth before potentially meeting face to face (FtF). In addition, many of the dating sites use mathematical algorithms to try and match people based on compatibility (Finkel et al., 2012). While online dating provides access to potential mates you may not otherwise meet, it also reduces a real person to a profile and is void of the nonverbal information that people have in real life meetings that is important to establishing whether they have chemistry. Other issues of concern is increasing the propensity to objectify others and less willing to commit. The abundance of choice can lead to lazy decision-making and make poor decisions on who to pursue (Finkel et al., 2012).

History and Prehistory of Online Dating

Before online forums for dating, individuals used other outlets to be matched with potential partners. Matchmakers have been helping people seek out prospective mates for centuries. In the 19th century, individuals started using mail-order bride services (Gunter, 2008). Additionally, people have utilized newspapers and magazines to place personal advertisements seeking romantic partners or marriage (Gunter, 2013). There have been services that promote to all, and services that targeted specific populations based on factors like demographics, sociocultural factors, or special interests. During times of war many soldiers would place ads to seek pen-pals or possible love interests while they were overseas. In the 1960s and 70s the use

of personals to advertise for the type of relationship increased, but still only a very small percentage of people found relationships this way, estimated to be around 1%. In the 1980s, a new wave of personal advertisement came in the form of video dating ads (Finkel et al., 2012). If the individuals in the videos had a mutual interest, they would then opt to meet face to face. (Finkel, et al., 2012)

As technology increased, the age of online dating was born in 1995. Match.com was the first online dating site. It functioned as an online personal advertisement search engine where people were able to create a profile including personal information and photographs and were able to search through others personal ads within the database as well. Many other sites followed, some targeting more specific subpopulations, for example Christian Mingle, which targeted individuals looking for a partner who was Christian (Finkel et al., 2012). The second wave of online dating came in the form of algorithm-based matching sites. eHarmony introduced this with what they call algorithm matching, which launched in 2000. They used self-report questionnaires to gather information about the individual that was used to develop matches based on the site's compatibility algorithm. This limited the individuals' profiles they were shown based on compatibility (Finkel et al., 2012).

The third wave of online dating emerged in 2008 with the release of the second iPhone by Apple which allowed for consumers to download software applications and other smart phone companies followed (Finkel et al., 2012). These smart phone-based dating applications allowed individuals to use their phones to use location-based technology to locate potential partners in their immediate vicinity. Among some of the first applications of this kind were Zoosk and Badoo. Tinder, developed in 2012, and the focus of the current study, is such a type of dating application. It is important to note that with the emergence of sites such as Myspace and

Facebook in the early 2000s, these were also used to meet potential romantic partners even though that was not what they were exclusively designed to do. Websites such as Twitter and Instagram, which are also newer social media sites, have been utilized in the same manner by some users (Finkel et al., 2012).

Motivation for Online Dating

As the stigma around online dating has continued to decrease, many individuals feel free to explore love in this context (Gunter, 2008). Individuals' motivations for going online to meet potential partners can vary widely. In recent years, as the number of single people has increased and career pressure and time constraints have also increased, going online to find a potential mate affords a level of convenience that meeting offline does not (Barraket & Henry-Waring, 2008; Harding, 2002). Additionally, it has been proposed that individuals are less apt to seek out romantic relationships in the work place as the fear of sexual harassment lawsuits has increased (Brym & Lenton, 2003). An obvious advantage of online dating is immediate access to a large pool of potential matches (Madden & Lenhart, 2006; Wiederhold, 2015). Another advantage is the nonthreatening atmosphere that online dating offers when initiating contact, which could be appealing to those who may be more nervous in putting themselves out there (Wiederhold, 2015). Furthermore, some sites do the work of weeding out individuals you likely would not be compatible with and find matches that you are more likely to connect with (Wiederhold, 2015).

When assessing personality factors of individuals who utilize online dating and mobile dating applications, Gatter and Hodkinson (2016) found that individuals who used Tinder or online dating showed no difference in self-esteem or sociability compared to those who did not use these services. This finding is contrary to the stereotype that those who seek mates through these venues are socially deficient or desperate (Finkel et al., 2012; Gatter & Hodkinson, 2016;

Smith, 2014). Additionally, Valkenburg and Peter (2007) found that individuals who are low in dating anxiety are actually more likely to use online dating than those reporting higher anxiety. Another study found that individuals who were higher in rejection sensitivity were more likely to use online dating sites than individuals who were lower in rejection sensitivity (Blackhart, Fitzpatrick, & Williamson, 2014).

Gender has also been found to play a role in online dating motivation. Women reported they were more likely to use online dating services to be sociable versus finding a sexual partner, compared to men (Clemens, Atkin & Krishnan 2015; Golbeck, 2015). These findings also appear to extend to users of a mobile dating (Tinder), with men reporting using these services to find casual sex at a higher rate than women (Sumter, Vandenbosch, & Ligtenberg, 2016).

Who uses Online Dating Applications?

As a 2 billion dollar business, with profits showing no sign of decreasing, online dating is being utilized by quite a lot of people (Gunter, 2013; Wiederhold, 2015). According to Wiederhold (2015), 1 in 10 Americans report they have used online dating and approximately 1/4 of these users report they have found their spouse or partner online. In fact, a study sampling 19,131 individuals who married between 2005 and 2012 found that more than 1/3 of those individuals met their partner online. Another study found that roughly forty percent of all single Americans (54 million) have tried online dating (Golbeck, 2015).

Valkenburg and Peter (2007) looked at characteristics of Dutch individuals who visited online dating sites and found that 43% of individuals who use the internet have tried online dating. Other data emerging from the Pew Research Institute states that the largest age group of online daters is between the age of 25–34 and comprise 22% of the online dating population,

followed by ages 35–44 which comprise 17% of online daters, then ages 18–24 comprising 10%, 45–54 comprising 8%, 55–64 with 6%, and 65 and older with 3% (Smith, 2014).

Researchers have also looked into personality characteristics of individuals who use online dating. Online dating used to carry the stigma that people who used these services were nerds, desperate, or socially inept (Goodwin, 1990; Orr, 2004; Smail, 2004; Whitty & Carr, 2006; Wildermuth & Vogl-Bauer, 2007). However, as these services have become more mainstream, these stereotypes about users have decreased (Harmon, 2003; Lawrence, 2004; Tracy, 2006). Further support for the shift in perception of online dating comes from data collected by the Pew Research Center. Individuals who reported they felt online dating was desperate decreased, with 29% holding this belief in 2005 to 21% of individuals in 2013. Furthermore, 59% of people reported that they felt online dating was a good way to meet people in 2013, versus 44% of people in 2005 (Smith, 2014).

Tinder. Tinder is a mobile application individuals can download onto their smartphones to connect with other individuals they may potentially be interested in romantically. It uses GPS and is categorized as location-based real time dating (Handel & Schlovski, 2012) and a social discovery application. Tinder was founded by Jonathan Badeen and Sean Rad and then launched on September 12, 2012. Each year continues to grow its users. Tinder is used in 196 countries around the world and has over 10 million daily users.

In order for users to access Tinder, they must have a Facebook profile. The application then pulls data and information from Facebook to help develop the individual's profile. Tinder settings allow people to select the maximum distance (1 to 100 miles) from their current location they would like to search for potential matches. Additionally, they can select what gender they are interested in being matched with (male and/or female) and the age range (18–55+) of

potential matches. Tinder accesses Facebook from its users to create a profile consisting of several pictures and the option of adding their occupation, where they attended school, and a short biography (up to 500 characters). In addition, Tinder users also have the capability to link their Instagram account to their profile, and photos from their Instagram are displayed along the bottom of their profile for potential matches to peruse through. Furthermore, Tinder displays common connections; if the users share a mutual Facebook friend (called a 1st degree connection) or if they have 2 separate friends who are friends with each other (called a 2nd degree connection). Once a user logs into the system, they are presented with another individual's profile to look through. If they are interested in connecting with this person, they will swipe that individual's profile to the right. If they are not interested in that individual, they swipe that individual's profile to the left. Users are only notified if they match with the other person, meaning they both swiped right for each other. They are not notified if they have been rejected. Once a match is made, the user is sent a notification. From this point on, both users have the option to start a conversation with one another, though matching with someone doesn't guarantee that either user will choose to start messaging with the other.

Data on usage shows that there are approximately 1.4 billion Tinder swipes a day, which results in 26 million matches per day (gotinder.com, .n.d.). Tinder reports having over 10 billion matches since the date the application launched. Since 2012, they have added some new features as well. In 2015 they added a "super like" button. So, instead of just swiping right to show interest, the user can swipe up to "super like" a profile to show the other user that they are very interested in them before they decide to swipe right or left. A user that comes across a profile of someone who has "super liked" them will see that individual's profile with a blue bar along the bottom and a message that they have "super liked" you. Data suggests that the "super like"

function makes chances of matching 3 times more likely and that conversations that start with a “super like” are on average 70% longer than conversations that do not (gotinder.com, n.d.).

In 2015, Tinder plus was introduced. Tinder plus was an upgraded version of Tinder that allowed the premium members, for a monthly fee, access to special features. Tinder plus currently costs \$8.33 a month for 12 months, \$12.50 a month for 6 months, and \$19.99 for one month (gotinder.com, n.d.). Tinder plus allows their premium users a rewind feature which allows them to go back to the last profile they viewed and change the direction of their swipe. It also allows them a passport feature which provides users the ability to view profiles of users in whatever global location they select (gotinder.com, n.d.). So for example, if they are in London but would like to look at profiles of individuals in Chicago, they can go to their passport setting and change their area of interest to Chicago. Furthermore, Tinder plus allows its users unlimited swipes, meaning they can continue to swipe right as many times as there are profiles available for them to view (gotinder.com, 2012). The free version of Tinder has a right swipe limit within a 12-hour period; the exact limit remains unknown.

Sexual Permissiveness

Sexual permissiveness refers to one’s attitudes and/or behaviors in relation to sex: restrictive or unrestrictive (Hendrick et al., 2006). Individuals defined as being less restrictive are more open or liberal in their attitudes about sex than those who are more restrictive (Hendrick et al., 2006; Schmitt & Jonason, 2015; Sprecher, 2013; Sprecher et al., 2013; Weinberg et al., 2000). There is research on sexual permissiveness in relationship to a variety of factors, such as: gender (Lefkowitz, Shearer, Gillen & Espinosa-Hernandez, 2014; Petersen & Hyde, 2010; Sprecher, 2013), contraceptive use (DelCampo, Sporkowski & DelCampo, 1976), premarital sex (Willoughby, 2012), casual sex (Birnie-Porter & Hunt, 2015), hook-up behaviors

(Birnie-Porter & Hunt, 2015; Olmstead, Pasley & Fincham 2013; Owen, Quirk & Fincham 2014), friends-with-benefits relationships (Birnie-Porter & Hunt, 2015; Owen & Fincham, 2012), extradyadic sex (Hansen, 1987), religiosity (Willoughby & Carroll, 2010), and family factors (Taris, Semin & Bok, 1998). Additionally, there is research on how these attitudes and behaviors have changed over time (Petersen & Hyde, 2010; Sprecher et al., 2013; Twenge, et al., 2015).

Sexual permissiveness is important to address for a variety of reasons. It has been shown to have an impact on sexual health, social relationships, personal well-being, sexual satisfaction, and relationship outcomes (Katz & Schneider, 2013). Individuals who hold more permissive attitudes are more likely to engage in more casual sex, and are subsequently at higher risk for sexually transmitted infection. Some research indicates that women who engage in more unrestrictive sex have poorer relationship outcomes, though this finding was not as apparent for men (Katz & Schneider, 2013). Furthermore, sexually permissive behaviors can positively or negatively affect an individual's sense of self and emotional well-being (Garcia et al., 2012; Owen, et al., 2014); but the effect is dependent on personal variables such as attachment (Owen et al., 2014; Sprecher, 2013). Due to the sexual double standard, engaging in unrestrictive sexual behavior can have social implications for men and women that are dependent on gender (Owen et al., 2014; Zurbriggen, 2011). Men are more often treated favorably for having more unrestrictive sex while women may be more vulnerable to ostracism (Petersen & Hyde, 2011; Zurbriggen, 2011).

Over the last several decades, sexual permissiveness has shifted and people have in general become less restrictive in their views (Petersen & Hyde, 2010; Sprecher et al., 2013; Twenge et al., 2015). Sex was widely seen as unacceptable outside of the union of marriage before the sexual revolution of the 1960s (Twenge et al., 2015). Researchers have found that

permissiveness has changed from generation to generation, with young adults today holding more permissive sexual attitudes than did young adults 20 years ago (Sprecher et al., 2013; Twenge et al., 2015). Adults in the United States in the current decade (vs. the late 1980s) report having more sexual partners and a higher likelihood to have had sex with someone they just met or were not in a relationship with in the past year than individuals did in the 1980s (Twenge et al., 2015). Overall, attitudes towards the acceptance of sex outside of marriage and outside the context of a committed relationship have increased since the 1980s (Twenge et al., 2015).

In relation to gender, men have been found to hold more permissive sexual attitudes than women (Hendrick et al., 2006; Lefkowitz et al., 2014; Oliver & Hyde, 1993; Sprecher, 2013), and report higher numbers of casual sex partners or hook-ups than women (Birnie-Porter & Hunt, 2015; Oliver & Hyde, 1993; Olmstead et al., 2013; Owen et al., 2014; Petersen & Hyde, 2011). It has been argued that this gender difference exists because of socialization or evolutionary differences (Laner, Laner, & Palmer, 1978; Petersen & Hyde, 2011). Evolutionary theory asserts that women benefit from being more selective in mate choice for genetic reasons and because their time investment will be more substantial, while men benefit from mating with large quantities of perceivably fertile women for genetic success (Buss & Schmitt, 1993; Petersen & Hyde, 2011). While birth control has afforded for individuals to engage in sexual behavior and prevent pregnancy, theorists assert that thousands of years of sexual selection have been ingrained into this distinctive mating process (Buss & Barnes, 1986; Buss & Schmitt, 1993; Petersen & Hyde, 2011). Social learning theory, which states that behavior is learned and then imitated through observation (Bandura, 1986), asserts that through gendered learning a person learns which sexual behaviors will be rewarded and punished. Because of evolutionary reasons, our society currently holds a sexual double standard; certain sexual behaviors (casual sex and

multiple sexual partners) tends to be socially rewarded for men and punished for women (Petersen & Hyde, 2011; Zurbriggen, 2011). While the root motivation for the difference in sexual permissiveness is a little different, both theories support that men will have more sexual experience and more permissive attitudes towards sex (Petersen & Hyde, 2011), which is subsequently supported by research findings (Hendrick et al., 2006; Lefkowitz et al., 2014; Oliver & Hyde, 1993; Petersen & Hyde, 2010; Sprecher, 2013).

While gender differences do exist, the gap has been narrowing over the last few decades. Petersen and Hyde (2010) conducted a review of how men and women differ in their sexual attitudes and behaviors, and found that gender differences have decreased over the last several decades in relation to engagement in and acceptability of sex before marriage and number of sexual partners in general. Another study found that increase in sexual behavior was especially prominent in females between the 1950s and 1990s (Wells & Twenge, 2005).

When looking at more permissive sexual attitudes and behaviors, the acceptability and engagement in casual sex is at the forefront of research. Casual sex is defined as sex outside of a committed relationship. The emergence of a hook-up culture has also showed a demonstrative shift in the way people behave sexually. Hooking-up refers to sexual encounters between two people who are not committed or dating with no expectation for the encounters to be ongoing (Garcia et al., 2012). As stated, individuals have become progressively more unrestrictive in their attitudes and behaviors and for today's emerging adults, hooking-up has become culturally normative in the United States (Garcia et al., 2012). In a study by Owen and colleagues (2014), half of the individuals surveyed indicated they had hooked-up with someone in the past year (Owen et al., 2014). Hook-up relationships have been found to have positive and negative impacts on individuals; in some cases individuals reported becoming more confident in their

sexual self and sexual behaviors while others reports negative emotions around their sexual self as a result (Owen et al., 2014). Whether hook-up experiences lead to a positive or negative impact on the individual is dependent on how the sexual interaction unfolded and the meaning they took from the interaction (Owen et al., 2014). Furthermore, a longitudinal study showed that individuals who engaged in hook-up sex endorsed more permissive sexual attitudes as a result (Katz & Schneider, 2013).

Additionally, friends with benefits (FWB) have also become mainstream alternatives to committed romantic relationships to pursue sexual relationships. Friends with benefits (FWB) refers to an agreed upon sexual arrangement between two friends. In comparison to hooking up, there may be a more complex relationship here because the individuals are not only choosing to be sexual partners, they also have a friendship (Garcia et al., 2012). The emergence of these relationships is another indication of the shift in permissive attitudes (Braithwaite, Aaron, Dowdle, Spjut & Fincham, 2015; Garcia et al., 2012).

Both hooking-up and FWB relationships are types of casual sex (Braithwaite et al. 2015; Garcia et al., 2012; Owen et al., 2014). Some other labels for types of casual sex, in addition to FWB and hook-ups, are: no strings attached (NSA), *one night stands*, and casual sexual encounters (Garcia et al., 2012). Current research shows that 60–80% of individuals have experienced some type of casual sex (though this does not necessarily mean actual sexual intercourse) during emerging adulthood in North America (Garcia et al., 2012).

When looking at permissive sexual attitudes and behaviors as they relate to attachment, avoidance of commitment is related to both avoidant attachment and higher desire for casual sex (Katz & Schneider, 2013). Sprecher (2013) found that avoidantly attached individuals were more likely than others to hold sexually permissive attitudes, with avoidantly attached men

reporting the highest levels of permissiveness. Bogaert and Sadava (2002), on the other hand, found that anxiously attached women were more permissive than women with avoidant or secure attachment. While there are conflicting findings about permissiveness when looking at individuals high on attachment and high on anxiety, there is agreement in the literature that securely attached individuals report the lowest levels of permissiveness (Butzer & Campbell, 2008; Feeney & Noller, 2004; Hazan & Shaver, 2004; Jonason et al., 2015).

One big distinction in the literature on permissiveness is between attitudes and behaviors (Hendrick et al., 2006). For the purpose of this study I will be focusing more on permissive attitudes rather than permissive behaviors, to keep the two separate as to not overlap with Tinder behavior construct as it measures reports of sexual behavior. Given that research shows that permissive attitude is related to attachment avoidance and likelihood to engage in more casual sex, it is hypothesized that a permissive sexual attitude will mediate the relationship between attachment avoidance and sexual behavior on Tinder.

CHAPTER III. METHOD

Design

The purpose of the current study was to examine the effect of attachment orientation on Tinder use. I used a quantitative descriptive and correlational design to assess the relationship between attachment style and Tinder use. I also looked at whether sexual permissiveness serves as a mechanism through which attachment style and Tinder use relate, and whether a relationship between permissiveness and attachment orientation was moderated by gender.

Participants

A priori power analysis determined that 200 participants were needed to achieve adequate power for this study (.80, $p < .05$). Data were analyzed for 311 participants who were recruited through Amazon Mechanical Turk (AMT) for this study and who met the following inclusion criteria: 18 years of age or older, currently single (not married or in a committed relationship), currently use the Tinder mobile application, are United States citizens, and live in the United States. The IP address in AMT was restricted to only allow access to individuals in the United States to participate. The average time for completion of the survey was 7 minutes and 23 seconds, and varied from 2 minutes and 56 seconds to 37 minutes and 55 seconds. Of the 539 individuals that started the study, 123 did not meet the inclusion criteria because they indicated they were not single on the screening questionnaire and were immediately rerouted to a screen stating they did not meet criteria for participation, 32 did not finish completing the survey, and 56 failed to pass the attention checks and were therefore excluded from the participant pool.

Several additional individuals were excluded from the analyses after data collection was completed. Specifically, 8 individuals responded inconsistently to questions on the Tinder sexual behavior measure which served as a built-in attention check, and an additional 9 were excluded because they reported they were not single in the Demographics Questionnaire.

Tables 1 and 2 present the demographics of the study participants. Some of the following descriptive information may not sum to 100% due to missing demographics data. With regards to ethnicity, 71.4% of participants identified as White/Caucasian, 9.6% identified as Asian/Pacific Islander, 7.7% identified as Black/African American, 7.4% identified as Hispanic/Latino, 2.9% identified as Biracial/Multiracial/Multi-Ethnic, and 1.0% identified as Native American/American Indian. In regards to age, 27.0% of the participants were between the ages of 18–25, 48.8% of the participants were between the ages of 26–33, 14.6% were between the ages of 34–40, 5.5% were between the ages of 41–48, and 3.5% were between the age of 49–55. The total age range was 18 and 55 years old and the mean age for participants was 30.

Table 1

Participant Gender and Age

Demographic	n	%
Gender		
Man	215	69.1
Woman	96	30.9
Age		
18 – 25	84	27.0
26 – 33	152	48.8
34 – 40	45	14.6
41 – 48	17	5.5
49 – 55	11	3.5

Note = Two respondents did not provide an age so the percentage adds up to 99.4

Table 2

Participants' Sexual Orientation, Race/Ethnicity, Religion

Demographic	N	%
Sexual Orientation		
Straight	271	87.1
Bisexual	28	9.0
Gay	7	2.3
Lesbian	3	1.0
Other	2	0.6
Race/Ethnicity		
White/Caucasian	222	71.4
Asian/Pacific Islander	30	9.6
Black/African American	24	7.7
Hispanic/Latino	23	7.4
Biracial/Multiracial/Multiethnic	9	2.9
Native American/American Indian	3	1.0
Religion		
Christian	104	33.4
Agnostic	88	28.3
Atheist	82	26.4
Spiritual but not religious	23	7.4
Other	6	1.9
Buddhist	3	1.0
Hindu	3	1.0
Jewish	2	0.6

Distribution on religion is very different from distribution of the population of the U.S. With regard to religion, 33.4% identified as Christian, 28.3% identified as Agnostic, 26.4% identified as Atheist, 7.4% identified as Spiritual but not religious, 1.9% identified as other, 1.0%

identified as Buddhist, 1.0% identified as Hindu, and 0.6% identified as Jewish. In regards to Gender, 69.1% identified as a man and 30.9% identified as a woman. In regards to sexual orientation, 87.1% identified as heterosexual, 9.0% identified as Bisexual, 2.3% identified as Gay, 1.0% identified as Lesbian, and 0.6% identified as “Other.”

Measures

Demographics Questionnaire

The Demographics Questionnaire was developed for this study. The following information was collected in relation to the participants’ background: age, gender identification, sexual orientation, ethnicity, and religious affiliation. In addition, participants filled out a demographics-screening form (Appendix C) at the outset of the study to ensure they met inclusion criteria. They were asked if they were 18 years or older, if they used the mobile application “Tinder,” if they currently resided in the United States, what their relationship status was, and if they were a United States citizen. The Demographic Questionnaire described previously (Appendix D) collected the remaining information listed above and was presented at the end of the study, after participants had filled out all of the other measures.

Experiences in Close Relationships Revised (ECR-R)

The Experiences in Close Relationships-Revised (ECR-R) was used to measure the participants’ attachment. The ECR-R was developed by Fraley, Waller, and Brennan (2000) and is a revised version of the Experiences in Close Relationships measure, which was initially constructed by Brennan, Clark, and Shaver (1998). Fraley and colleagues conducted an Item Response Theory (IRT) analysis of four attachment measures that utilize self-report: The Experiences in Close Relationships (ECR) (Brennan et al., 1998), Adult Attachment Scales (Collins & Read, 1990), Relationship Styles Questionnaire (1990), and Simpson’s (1990)

Attachment Scales. They found that the ECR had the highest measurement precision and therefore chose to use it in the development of the ECR-R. They ran a second IRT analysis to see which questions from the ECR had the strongest psychometric properties. They chose the items with the highest discrimination values and were able to increase measurement precision from 50% to 100% with the items they selected to comprise the two dimensions of attachment in the ECR-R.

The 36-item ECR-R measures adult attachment styles using two 18-item subscales: attachment anxiety and attachment avoidance. Attachment anxiety measures how insecure or secure the person is about whether another will be available and responsive to them (Fraley et al., 2000). Attachment avoidance measures how comfortable an individual is with being close to and depending on another (Fraley et al., 2000). Individuals were asked to indicate how accurate each item is for them personally from “strongly agree” to “strongly disagree” using a 7-point Likert scale. Items 9, 11, 20, 22, 26–31, and 33–36 are reverse scored. Scores for each subscale are computed by averaging the participants’ response on subscale items. Individuals low on attachment anxiety and attachment avoidance are thought to have a secure attachment style. Individuals high on attachment avoidance and/or attachment anxiety are thought to have an insecure attachment style. The ECR-R is the most widely used measure of attachment in adult attachment research and has an internal consistency reliability of .90 or higher (Fraley et al., 2000). Both the Attachment Anxiety and Attachment Avoidance subscales display acceptable internal reliability scores, with the avoidant scale yielding a Cronbach alpha of .91 and the anxiety scale yielding a Cronbach alpha of .93 in 142 university students. “I don’t feel comfortable opening up to romantic partners” and “I get uncomfortable when a romantic partner wants to be very close” are a few examples of questions on the avoidance subscale. “I worry that

I won't measure up to other people" and "My desire to be very close sometimes scares others away" are examples of questions on the Attachment Anxiety subscale.

Brief Sexual Attitudes Scale (BSAS)

The Brief Sexual Attitudes Scale (BSAS) was developed by Hendrick, Hendrick, and Reich (2006) as an updated and shorter version of the Sexual Attitudes Scale (SAS) to measure sexual attitudes. The SAS had been widely used in the field, but because of problems with item structure stability, factor loading issues, and outdated language, it was re-examined.

Furthermore, the authors understood the need for briefer assessments given time constraint issues. This led to the development of the BSAS. The BSAS is comprised of four subscales to measure sexual attitudes: Permissiveness, Birth Control, Communion, and Instrumentality.

Because the purpose was to investigate permissive sexual attitudes, I only used the Permissiveness subscale of the BSAS in the current study. The Permissiveness subscale showed adequate internal consistency reliability with a Cronbach alpha of .92. The Permissiveness subscale of the BSAS is comprised of 10 questions with response choices comprised of a 5-point Likert scale, ranging from "strongly agree with this statement" to "strongly disagree with this statement." Sample items include "The best sex is with no strings attached" and "It is possible to enjoy sex with a person and not like that person very much." Lower scores on the Permissiveness subscale indicate less restrictive sexual attitudes.

Tinder Use Behavior Questionnaire

The Tinder Use Behavior Questionnaire was developed for use in this study. There is not a measure currently available that looks at Tinder use (or any dating application use) in the literature, so a measure was developed to serve this purpose. The Tinder Use measure is comprised of 3 subscales: Relationship Motivation, Sexual Behavior, and Frequency of Use.

The Relationship Motivation subscale consisted of three questions to assess motivation for a relationship. Individuals were given a 5-point Likert scale for each question and are asked to choose a response from “strongly agree” to “strongly disagree.” The three items were averaged to find the individuals mean score and Item 3 was reversed scored. A high score on the Relationship Motivation subscale indicated low relationship seeking behavior. The Sexual Behavior subscale was comprised of 5 items with 5 possible response choices. Each response item was scored by assigning a value from one to five to correspond with the selected response and these scores will then be average to find the mean scale score. A high score on the Sexual Behavior subscale indicated a high level of sexual activity. The Frequency of Use subscale consisted of 4 items with 5 possible response choices. Each response choice was assigned a value between 1 and 5. The scores were averaged together to find the mean scale score. A high score on the Frequency of Use subscale indicated high frequency of Tinder use. There is no psychometric information about the Tinder Use Behavior Questionnaire. The Tinder Use Behavior Questionnaire is in Appendix E.

Procedure

After obtaining approval from the Institutional Review Board (IRB) at Auburn University, participants were recruited for the study. The study was advertised as a job on Amazon Mechanical Turk (AMT). Information about the study’s inclusion criteria was provided and was listed in the description as being required for the job (Appendix A). The potential participants were informed that this researcher was seeking individuals who were single, 18 years of age or older, use Tinder, and live in the United States. Individuals who decided they met these “job requirements” and decided to participate clicked on the link provided and were routed to the study on Qualtrics, an online software company. They were then presented with an

information letter (Appendix B) which provided them with the information necessary for them to provide informed consent. This information letter also stated that there would be attention checks built in to the study to ensure they were paying attention, and that failure to pass attention checks meant their data would not be included in the study and that they would not be compensated for their time. Individuals who gave consent indicated their intent to do so by continuing on to the study. These individuals were then directed to a screen that contained the demographic screening questions related to the study to make sure they met inclusion criteria. Individuals that did not meet inclusion criteria were redirected to a screen explaining that they did not meet requirements for participation. Individuals that met inclusion criteria requirements were presented with the ECR-R, BSAS Permissiveness scale, and the Tinder Use Behavior Questionnaire in a random order to reduce ordering effects. They were then presented with the Demographics Questionnaire. They were allotted one hour to complete the study and after that time had elapsed the session expired. Attention checks were incorporated into the measures to make sure participants were paying attention to the questions they were answering. Specifically, two attention checks were included in the ECR-R measure, one stating “select strongly agree” and one stating “select strongly disagree”; one attention check was included in the BSAS Permissiveness scale, stating “select strongly agree” and one attention check was included in the Tinder Use Behavior Questionnaire stating “select strongly disagree”. Additionally, there was an inherent attention check built into the Tinder Use Behavior Questionnaire. Specifically, if individuals reported a higher number of sexual partners on the question that asked how many people they had sex with on only one occasion from Tinder than they reported on the question that asked how many people they had sex with in total from Tinder, they were subsequently excluded from the participant sample. Furthermore, the Demographics Questionnaire presented

at the end on the study asked participants again about their relationship status. The individuals that did not select “single” were also excluded from the participant sample. Upon completion of the study, participants were given a code to type into AMT to receive their monetary reward (\$1.00).

Statistical Analyses

To test the first three hypotheses simple bivariate correlations were run. For Hypothesis 1 (Use of Tinder for the purpose of relationship seeking will be negatively associated with attachment avoidance), a bivariate correlation was calculated to measure the relationship. For Hypothesis 2 (Higher scores on attachment avoidance will be related to higher reports of utilizing Tinder leading to sexual behavior), a bivariate correlation was used to measure the relationship. For Hypothesis 3 (Frequency of Tinder use will be positively associated with attachment anxiety), a bivariate correlation was used to measure the relationship.

To test the fourth hypothesis (The relationship between Sexual Behavior on Tinder and attachment avoidance will be mediated by permissive sexual attitude), the Macro developed by Andrew Hayes for mediation was used to test for significant direct effects of how attachment relates to sexual behavior through permissive sexual attitude (Hayes, 2013). To test the fifth hypothesis (Gender will serve as a moderator between attachment avoidance and permissive sexual attitudes), a hierarchical linear regression was used to analyze this relationship using the following steps. Attachment avoidance was entered in step 1, gender was entered in step 2, and interaction term between gender and attachment was entered in step 3.

CHAPTER IV. RESULTS

Overview

This chapter reports the findings of the analyses run to test the hypotheses presented in Chapter 1. To test hypotheses 1, 2, and 3, simple correlations were run. To test hypothesis 4, a process macro developed by Andrew Hayes was run to test for mediation using the indirect effects model. To test hypothesis 5, a hierarchical linear regression was run. Data were also screened to examine whether they met assumptions for analysis; guidelines for univariate normality were met (i.e. skewness < +/- .70; kurtosis < +/- .70); however, the current sample varied significantly from the norming sample for scores on attachment avoidance and attachment anxiety among single individuals (Fraley et al., 2000). The current sample was significantly less anxious $t(310) = -5.87, p < .001$, and significantly more avoidant $t(310) = 2.08, p = .039$. Because these values reflect a change of the mean without evidence of skewness in the scores, it is possible that there is restriction of range in the sample.

Descriptive Statistics and Simple Correlations between Variables

Table 3 presents the means, standard deviations, and Cronbach's alphas of each measure in the present sample. The reliability for the ECR-R, BSAS-Permissiveness subscale, and Tinder use Sexual Behavior subscale showed good internal consistency for this study and the Tinder use frequency showed adequate internal consistency; however, the Tinder use Relationship Motivation subscales did not. It is important to note that the Tinder use measure was developed by this author for the purpose of this study because there are currently no measures available to

assess Tinder use. As stated, the Tinder use Sexual Behavior subscale showed good internal consistency ($\alpha = .93$); the Tinder use frequency subscale ($\alpha = .73$) showed adequate consistency; however, the Tinder Relationship Motivation subscale ($\alpha = .56$) did not indicate good internal consistency. Furthermore, removing one of the items from the Tinder Relationship Motivation subscale did not help achieve adequate internal consistency.

Table 3

Descriptive Statistics and Cronbach's Alphas for Participants

	<i>M</i>	<i>SD</i>	α
ECR-R Anxiety	3.18	1.37	.96
ECR-R Avoidance	3.09	1.23	.96
BSAS – Permissive Sexual Attitude	2.54	1.07	.94
Tinder Relationship Motivation Scale	3.30	0.97	.56
Tinder Sexual Behavior Scale	2.22	0.95	.93
Tinder Frequency of Use Scale	2.16	0.73	.73

Note: ECR-R= Experiences in Close Relationships Revised. BSAS= Brief Sexual Attitude Scale.

Table 4 presents the correlation matrices containing correlations between all the variables. A positive correlation was found between attachment anxiety and attachment avoidance ($r = .37, p < .001$) indicating that higher scores on attachment anxiety were related to higher scores on attachment avoidance.

Table 4

Correlations among Variables

Variables	1	2	3	4	5
1. ECR-R Anx					
2. ECR-R Avoid	.37**				
3. Tinder Rel Mot	-.15**	.06			
4. Tinder Sex Bx	-.21**	.041	.43**		
5. Tinder Freq Use	-.09	-.02	-.00	.56**	
6. BSAS PSA	.11*	-.04	-.65**	-.56**	-.18**

Note: ECR-R Anx = Experiences in Close Relationships Revised Anxiety Subscale. ECR-R Avoid = Experiences in Close Relationships Revised Anxiety Subscale. Tinder Rel Mot = Tinder Use Relationship Motivation Subscale. Tinder Sex Bx= Tinder Use Sexual Behavior subscale. Tinder Freq Use = Tinder Frequency of Use Subscale. BSAS PSA = Brief Sexual Attitudes Scale-Permissive Sexual Attitude subscale.

** $p < .01$, * $p < .05$, $n = 319$

All of the Tinder behaviors were positively correlated with one another, with the exception of Tinder use for relationship seeking and Tinder frequency of use ($r = .00$, $p = .964$). A high score on the Tinder Relationship Motivation subscale indicates low relationship seeking. Therefore, individuals who used Tinder to find relationships were less likely to have sexual encounters from Tinder ($r = .43$, $p < .001$). Additionally, greater frequency of use of Tinder was associated with having more sexual encounters from Tinder ($r = .56$, $p < .001$).

When examining attachment orientation and Tinder behaviors, no relationship was found between attachment avoidance and any of the Tinder behaviors. Specifically, attachment avoidance was not related to an individual's Tinder use frequency, their likelihood to use Tinder

to find a relationship, or their reports of sexual behavior on Tinder. In contrast, attachment anxiety was correlated with two of the Tinder behaviors. Specifically, higher attachment anxiety related to higher reports of relationship seeking on Tinder and lower reports of sexual behavior on Tinder.

With regard to attachment orientation and permissive sexual attitude, no relationship was found between attachment avoidance and permissive sexual attitude ($r = -.04, p = .449$). A positive correlation was found between permissive sexual attitude and attachment anxiety ($r = .11, p = .047$). Higher scores on the Permissiveness subscale indicate that the respondent has a more restrictive sexual attitude. Therefore, higher attachment anxiety related to less permissive sexual attitude.

All of the Tinder behaviors were negatively correlated with permissive sexual attitude. Individuals who reported using Tinder more frequently were more likely to hold less restrictive permissive sexual attitudes. Individuals who were low in relationship seeking were more likely to hold permissive sexual attitudes. Furthermore, higher reports of sexual behavior on Tinder was also associated with less restrictive permissive sexual attitudes

Adult Attachment Orientation and Tinder Use

A Pearson product-moment correlation coefficient was calculated to test the hypothesis that the use of Tinder for the purpose of relationship seeking would be negatively associated with higher scores on attachment avoidance (Hypothesis 1). For the 311 participants, the correlation between Tinder Relationship Motivation and attachment avoidance was not significant ($r = .06, p = .297$). The hypothesis was not supported.

A Pearson product-moment correlation coefficient was calculated to test the hypothesis that higher scores on attachment avoidance will be related to higher reports of utilizing Tinder

leading to sexual behavior. Specifically, I hypothesized that individuals with higher scores on attachment avoidance would report higher rates of sexual behavior with people from Tinder than individuals with lower scores on attachment avoidance (Hypothesis 2). For the 311 participants, the correlation between attachment avoidance and Tinder sexual behavior was not significant ($r = .04, p = .468$). The hypothesis was not supported.

A Pearson product-moment correlation coefficient was calculated to test the hypothesis that the frequency of Tinder use would be positively associated with attachment anxiety. Specifically, I hypothesized that individuals with higher attachment anxiety would score higher on frequency of Tinder use than individuals with lower scores on attachment anxiety (Hypothesis 3). For the 311 participants, the correlation between Tinder use frequency and attachment anxiety was not significant ($r = -.09, p = .104$). The hypothesis was not supported.

Mediation Analysis

The data did not support the hypothesis that attachment avoidance would be related to higher reports of sexual behavior on Tinder. However, Hayes (2013) states that there can be an indirect effect in the absence of a significant direct effect, therefore a mediation analysis was run to test for an indirect effect. The process macro by Hayes (2014) was used to investigate the hypothesis that the relationship between sexual behavior on Tinder and attachment avoidance would be mediated by permissive sexual attitude. Specifically, it was hypothesized that higher scores on attachment avoidance would be associated with higher permissive attitudes and subsequently higher amounts of sexual behavior on Tinder (Hypothesis 4). Table 5 presents the results of the mediation analysis. The sample size for the mediation analysis was 311. Five thousand samples were used for bias corrected bootstrap confidence intervals (CI). The subsequent path coefficients, significance tests, and bootstrapped 95% CI for the indirect effects

were calculated. The overall model was significant, $F(2, 308) = 68.84, p < .001$, and explained 30.9% of the variance in Tinder sexual behavior. The results for the relationship between attachment avoidance and permissive sexual attitude (*a* path) were not significant, $B = -.04, SE = .05, t = -.76, p = .449$. The relationship between permissive sexual attitude and Tinder sexual behavior (*b* path) was significant $B = -.49, SE = .04, t = -11.70, p < .001$, indicating that more permissive sexual attitude relates to higher levels of Tinder sexual behavior. The total effect of attachment avoidance on Tinder sexual behavior (*c* path) was not significant, $B = .03, SE = .04, t = .73, p = .468$. Finally, the indirect effect (*c'* path) was not significant, $B = .01, SE = .04, t = .37, p = .714$. Under the normal theory test, the *ab* path was not significant, $p = .451$. Furthermore, the results of the bootstrap test showed the inclusion of a zero in a bias correct and accelerated CI [-.03, .07]. These test results, along with the sobel test ($z = .75, p = .451$), indicate that permissive sexual attitude does not mediate the relationship between attachment avoidance and Tinder sexual behavior.

Table 5

Regression Table for Mediation Effects of Permissive Sexual Attitude (PSA) on the Relationship between (a) Attachment Avoidance (ECR-R Avoid) and Tinder Sexual Behavior (Tinder Sex Bx)

(N = 311)

Regression Paths	<i>B</i>	<i>t</i>	<i>p</i>
Mediation <i>a</i> path (ECR-R Avoid on PSA)	-0.04	-0.76	.449
Mediation <i>b</i> path (PSA on Tinder Sex Bx)	-0.49	-11.70	< .001
Total effect, <i>c</i> path (ECR-R Avoid on Tinder Sex Bx; No mediator)	0.03	0.73	.468
Indirect effect <i>c'</i> (ECR-R Avoid on Tinder Sex Bx including PSA as mediator)	0.01	0.37	.714

Note. *B* = unstandardized coefficient; $F(2, 308) = 68.84, p < .001$.

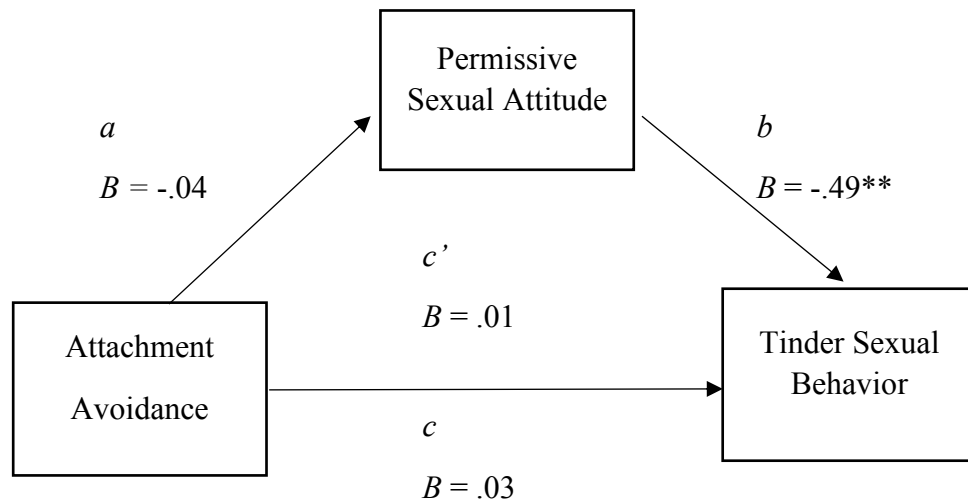


Figure 1. Testing of Mediation of Permissive Sexual Attitude

Moderation Analysis

A hierarchical linear regression was run to test the hypothesis that gender would serve as a moderator between attachment and permissive sexual attitudes (Table 6). It was also hypothesized that men who score higher on attachment avoidance would have more permissive sexual attitudes than men with lower scores on attachment avoidance (Hypothesis 5).

Attachment avoidance and attachment anxiety were entered in to a regression equation to test for main effects. New variables were created to center each attachment measure (avoidance and anxiety) to control for multicollinearity. Interaction variables for gender and attachment anxiety and gender and attachment avoidance were created. The centered predictor variables for attachment anxiety and attachment avoidance were entered in block one, gender was entered in to block two with man coded as 1 and woman coded as 2, and the interaction variables for gender and attachment anxiety and gender and attachment avoidance were entered in block three. Permissive sexual attitude score was entered as the dependent variable for the regression.

Table 6

Hierarchical Regression Table for Test of Moderating Effect of Gender on Attachment and Permissive Sexual Attitude

Predictor	ΔR^2	β	<i>sr</i>	<i>p</i>
Step 1	.02			
ECR-R Anx		.15	.14	.015
ECR-R Avoid		-.10	-.09	.107
Step 2	.11			
ECR-R Anx		.13	.12	.029
ECR- R Avoid		-.07	-.07	.225
GENDER		.33	.33	<.001
Step 3	.01			
ECR-R Anx		.37	.11	.032
ECR-R Avoid		.08	.03	.640
GENDER		.33	.33	<.001
GEN X ANX		-.26	-.08	.152
GEN X AVOID		-.16	-.05	.384

Note: ECR-R Anx = Attachment anxiety, ECR-R Avoid = Attachment Avoidance. ECR-R Anx and ECR-R Avoid were centered.

Attachment anxiety and attachment avoidance accounted for a significant amount of variability in permissive sexual attitude ($R^2 = .02, p = .038$). When looked at separately, attachment anxiety ($\beta = .15, p = .015, sr = .14$), but not attachment avoidance ($\beta = -.10, p = .107$,

$sr = -.09$), uniquely accounted for a significant amount of variability in permissive sexual attitude. Thus, the results indicate a significant main effect found for attachment anxiety in predicting permissiveness after controlling for the variance explained by attachment avoidance. Specifically, greater attachment anxiety was related to less permissive sexual attitudes when controlling for attachment avoidance.

Gender, when added to the model, made a significant contribution to the prediction of variance in permissive sexual attitude beyond the contribution made by attachment anxiety and attachment avoidance ($R^2\Delta = .11, p < .001$). In particular, gender contributed a significant amount of unique predictive value to the permissiveness criterion variable, $\beta = .33, p < .001, sr = .33$. Men in the current sample were found to hold more permissive sexual attitudes than women. However, the interaction of gender and attachment anxiety ($\beta = -.26, p = .152, sr = -.08$) and the interaction of gender and attachment avoidance ($\beta = -.16, p = .384, sr = -.05$) did not explain a significant amount of variance in sexually permissive attitudes ($R^2\Delta = .01, p = .092$) beyond what was already accounted for by the main effects. This lack of significant interaction indicates that gender did not moderate the relationship between attachment (avoidance and anxiety) and permissive sexual attitude. Because no main effect for attachment avoidance and no interaction was found between gender and attachment, the hypothesis cannot be supported and there was no justification for running a post hoc analysis to test the hypothesis that men with higher scores on attachment avoidance would report higher sexual permissive attitude.

CHAPTER V. DISCUSSION

This chapter discusses the implications of the findings presented in chapter 4, and addresses limitations of this study. This chapter also provides suggestions for future research and clinical applications of the results. As previously discussed, the purpose of this study was to explore the relationship between adult attachment dimensions (avoidance and anxiety) and how individuals utilize the mobile dating application, Tinder, as well as to investigate what role a permissive sexual attitude plays in the relationship between adult attachment and Tinder use. The study design was correlational and used regression and bootstrapping to determine relationships between variables of interest.

Summary

Attachment Anxiety, But Not Attachment Avoidance, Relates to Relationship Seeking

The results of this study did not support the hypothesis that use of Tinder for the purpose of relationship seeking will be negatively associated with attachment avoidance. The results showed no evidence to support that individuals higher on attachment avoidance are less likely to utilize Tinder to seek out a relationship. However, a significant relationship between attachment anxiety and relationship seeking was found. As stated earlier, high scores on the Relationship Motivation subscale indicates low relationship seeking. Therefore, as attachment anxiety increased, seeking a relationship on Tinder also increased. The failure to find a negative relationship between attachment avoidance and relationship seeking on Tinder is contrary to most of the research, which indicates that individuals with avoidant attachment report less

interest in romantic relationships (Shaver & Brennan, 1992; Wallin, 2007). In regards to the finding that attachment anxiety was significantly related to utilizing Tinder for relationship seeking, research has shown that individuals high on attachment anxiety have an intense yearning for intimacy, tend to be dependent, and carry a strong desire for commitment in relationships (Collins & Read, 1990; Feeney & Noller, 1990). Given the intense need of individuals with attachment anxiety to develop close bonds with others (Campbell & Marshall, 2011), the current study's finding that individuals with higher attachment anxiety are motivated to find a relationship on Tinder is in line with previous research (Campbell & Marshall, 2011; Davila & Bradbury, 2001; Feeney & Noller, 1990; Kirkpatrick & Davis, 1994).

This is the first study to look at Tinder use in relationship to attachment, so it is not possible to compare the findings of the current study to other studies in regards to Tinder use. However, research on attachment has shown that individuals high on attachment avoidance prefer relationships that are less intimate (Schachner & Shaver, 2004), report less interest in romantic relationships, especially a long-term committed relationship (Shaver & Brennan, 1992), and seek out shorter term and more casual sexual relationships (Simpson & Gangestad, 1991).

Attachment Avoidance Does Not Relate to Sexual Behavior on Tinder, but Attachment Anxiety Does

The results of this study did not support the hypothesis that higher scores on attachment avoidance will be related to higher reports of utilizing Tinder leading to sexual behavior. This finding is contrary to previous research findings that individuals high on attachment avoidance are more likely to engage in casual sex, score high on willingness to have sex outside of a relationship, hold more permissive sexual attitudes, engage in more one night stands and casual

sex encounters, and have a higher number of sexual partners (Brennan & Shaver, 1995; Gentzler & Kerns, 2001; Schachner & Shaver 2002; Simpson & Gangestad, 1991; Sprecher, 2013).

A significant negative relationship was found between attachment anxiety and Tinder sexual behavior. Specifically, the results indicate that individuals with higher attachment anxiety were significantly less likely to utilize Tinder to engage in sexual activity. Previous research has yielded mixed results about sexual behavior and attachment anxiety. Specifically, some studies have found gender differences for sexual expression and attachment anxiety. Previous research shows that women high on attachment anxiety tend to be more likely to engage in sexual behavior with others in order to try and create intimacy with partners, report more sexual partners and have higher rates of infidelity (Bogaert & Sadava, 2002; Cooper et al., 1998, 2006). In contrast, men with high attachment anxiety tend to be more restrictive in their sexual behaviors (Cooper et al., 2006; Feeney & Noller, 1996; Gentzler & Kerns, 2004). Although the sample had more men than women, the lack of a significant interaction between gender and attachment anxiety in predicting permissive attitudes makes these results somewhat different than previous findings.

Attachment Anxiety Does Not Relate to Frequency of Tinder Use

The results of this study did not support the hypothesis that frequency of Tinder use is positively associated with attachment anxiety. The reason it was hypothesized that attachment anxiety would relate to frequency of use is because attachment anxiety leads to hyperactivation strategies to get attachment needs met and to seek proximity to others to assuage feelings of distress. Attachment anxiety is related to difficulty coping with stress and a propensity to experience heightened states of arousal which makes their attachment needs great (Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987; Schachner & Shaver, 2004). As stated, the study

sample was significantly less anxious than the general population of single individuals in their attachment orientation.

Gender Does Not Moderate the Relationship between Attachment and Permissive Attitude

The results of this study did not support the hypothesis that gender would serve as a moderator between attachment avoidance and permissive sexual attitude. Because I did not find a relationship between attachment avoidance and gender, a post hoc analysis to test the hypothesis that men high in attachment avoidance would have more permissive (unrestricted) sexual attitudes was not run. Gender did significantly relate to permissive sexual attitude, but independently of attachment. Attachment anxiety also significantly related to permissive sexual attitude, when controlling for attachment avoidance. To summarize, both attachment anxiety and gender significantly related to permissive sexual attitude.

Research shows that men are more permissive in their sexual attitudes than women, which was supported by the results of this study as well (Hendrick et al., 2006; Oliver & Hyde, 1993; Petersen & Hyde, 2010, 2011; Sprecher, 2013; Zurbriggen, 2011). Men report more permissive attitudes towards premarital sex than women (Oliver & Hyde, 1993; Petersen & Hyde, 2010). They also report more permissive attitudes toward extramarital sex than women (Oliver & Hyde, 1993).

The finding that attachment anxiety relates to restricted sexual attitude (low permissiveness) is partially supported by past research. In contrast, attachment anxiety has been found to be related to more sexual partners, higher rates of infidelity, and earlier first intercourse (Bogaert & Sadava, 2002). Other research shows that anxiety relates to greater engagement in unwanted sexual activity (Gentzler & Kerns, 2004; Impett & Peplau, 2002). Thus, the pattern of

findings in this study fits within a larger pattern of mixed results when examining the relationship between attachment anxiety and permissive sexual attitudes and behaviors.

Permissive Sexual Attitude Does Not Mediate the Relationship between Attachment and Tinder Sexual Behavior

The hypothesis that relationship between Sexual Behavior on Tinder and attachment avoidance will be mediated by permissive sexual attitude was not supported. There was no relationship found between attachment avoidance and sexual behavior, or attachment avoidance and permissive attitude, which was surprising given the findings of previous researchers (Owen et al., 2014; Sprecher, 2013). Attachment avoidance has been linked to an unrestrictive sexual style, willingness to have sex outside of a relationship, more permissive sexual attitudes, one night stands and casual sex encounters, and having a higher number of sexual partners (Brennan & Shaver, 1995; Gentzler & Kerns, 2001; Schachner & Shaver, 2002; Simpson & Gangestad, 1991).

Implication of Findings

The failure to find support for the hypothesis that use of Tinder for the purpose of relationship seeking would be negatively associated with attachment avoidance has several possible explanations. First, the Tinder Relationship Motivation subscale was developed for this study and did not undergo psychometric testing. The scale also showed inadequate internal consistency ($\alpha = .56$). Another possible reason why the hypothesis was not supported is that individuals who are higher on attachment avoidance may be just as likely to seek out some type of relationships as individuals with different attachment orientation, but the type of relationships they seek out may be less intimate, shorter in duration, or more casual. Research indicates that people with avoidant attachment prefer shorter term more casual relationships (Simpson &

Gangestad, 1991), so it is possible they do seek relationships but they are less committed and don't necessarily plan to stay in them long-term.

Failure to find support for the hypothesis that higher scores on attachment avoidance would be related to higher reports of utilizing Tinder leading to sexual behavior is surprising given the existing literature. That is, others have found support for the idea that attachment avoidance relates to greater frequency of casual sex, number of sexual partners, and one night stands (Brennan & Shaver, 1995; Gentzler & Kerns, 2001; Schachner & Shaver, 2002; Simpson & Gangestad, 1991). Since this study asked specifically about casual sex in relation to Tinder, it is possible that those high on attachment avoidance do not utilize this application for seeking out casual sex, but seek it elsewhere. Additionally, they may have different motivations for utilizing Tinder altogether; it is plausible they utilize Tinder for an ego boost. Again, the Tinder Sexual Behavior subscale has not undergone any psychometric testing, so it is possible that it failed to measure the construct of interest, was not sensitive enough, or failed to meet psychometric properties; leading to the null finding.

The failure to find support for the hypothesis frequency of Tinder use would be positively associated with attachment anxiety could also be due to psychometric issues. The scale developed to measure frequency of Tinder use showed adequate reliability ($\alpha = .73$); however, it was developed for the purpose of this study and has not undergone any psychometric testing so it is plausible failure to find a relationship between attachment anxiety and Tinder use frequency may be the result of failure to accurately measure the construct. Additionally, much of the research addressing attachment anxiety behavior relates to how individuals react when distressed; with excessive support seeking, clinging behaviors, and obsessive thoughts (Hazan & Shaver, 1987; Schachner & Shaver, 2004). Therefore, these behaviors may be absent or much

subtler when individuals with attachment anxiety are not feeling distressed, as utilizing Tinder is not generally a distressing event, and this could also contribute to failure to find support for this hypothesis.

The relationship between attachment anxiety and more restrictive sexual attitude is partially supported by some research which indicates that attachment anxiety is not related to more permissive attitude (Hendrick et al., 2006; Katz & Schnieder, 2013) while other research indicates it is related to more sexual partners, infidelity, and earlier first intercourse (Bogaert & Sadava, 2002). This suggests that anxiously attached individuals may be low on permissive attitude, but when put into sexual situations, they do not act in accordance with this attitude for some reason or another. For example, one study found anxiously attached individuals were motivated to have sex based on their insecurities and to fulfill their need for intimacy (Schachner & Shaver, 2004) and another found that they are more likely to use substances before sexual encounters, which could affect decision making (Tracy et al., 2003). Furthermore, research on anxiously attached women has shown they are more prone to be victims of sexual coercion (Davis et al., 2006) and attachment anxiety is related to unwanted but consensual sex (Gentzler & Kerns, 2004).

One possible explanation for the failure to find support for the hypothesis that the relationship between sexual behavior on Tinder and attachment avoidance would be mediated by permissive sexual attitude, which was consistent with prior research, could be due to the unique characteristics of AMT workers. Research indicates AMT workers are less extroverted than college and community samples (Goodman, Cryder, & Cheema, 2013; Kosara & Ziemkiewicz, 2010) and more socially anxious than the general U.S. population (Shapiro, Chandler, & Mueller, 2013); both of which could plausibly reduce their likelihood of having such encounters.

Social anxiety has been found to be related to both attachment anxiety and attachment avoidance (Darcy, Davila & Beck, 2005; Ozturk & Mutlu, 2010). This could account for the higher level of attachment avoidance in the current sample, but does not explain the low levels of attachment anxiety of the sample. Researchers have found that attachment avoidance is related to low scores on extraversion (Nofle & Shaver, 2006; Picardi, Caroppo, Toni, Bitetti, & Giuseppe Di Maria, 2005) and sexual promiscuity is related to extroversion (Schmitt, 2004). Taken together, this could account for the lack of relationship found between attachment avoidance and sexual behavior due to the AMT worker characteristics.

Finally, it is critical to consider that failure to find support for some of the hypotheses within the current study that were congruent with previous research findings could be due to file drawer phenomenon (Rosenthal, 1979). Studies that fail to find significance are published at a lesser rate than those that do, and therefore access to literature on studies that do not have significant findings are limited and may obscure the overall picture (Scargle, 2000; Simonsohn, Nelson & Simmons, 2014). A recent study found that nearly two-thirds of research studies that produced null results did not get published, compared to 96% of those finding significant results (Mervis, 2014).

Limitations

There are several limitations in this study to acknowledge. First, the sample was comprised of 311 individuals recruited from AMT over the age of 18; the majority were men (69.1%), identified as white (71.4%), and straight (87.1%). Thus, the generalizability of these results is limited those who share these characteristics. Second, the use of single measures and self-report is also a limitation to this study.

Third, the Tinder Use measure was developed specifically to address the research questions of this study and had not undergone any testing to establish good reliability or validity. The Tinder Sexual Behavior subscale attained good reliability with the current sample, the Tinder Frequency of Use subscale showed adequate reliability, and the Tinder Relationship Motivation subscale did not indicate good reliability with the current sample and so the results should be interpreted with extreme caution. It is also possible that although the Tinder Sexual Behavior subscale and Tinder Frequency of Use subscale attained adequate reliability, that they may not have actually been measuring the construct that they set out to measure.

Additionally, there is evidence that restriction of range on attachment scales may be present in the sample for the current study. The sample for the current study had significantly different scores on attachment avoidance and attachment anxiety than scores found for the norming population. Specifically, the current sample was significantly more avoidant and significantly less anxious than individuals in the norming population of single adults (Fraley et al., 2000). Therefore, this could limit the generalizability of the findings as well.

A possible explanation for this pattern of different means could be due in part to the requirement that participants in this study be single. There is some evidence to suggest that individuals high on attachment anxiety often find themselves in long lasting, stable, but unsatisfying relationships (Davila & Bradbury, 2001; Kirkpatrick & Davis, 1994). This may restrict the amount of single individuals high in attachment anxiety available for participation in this study, and therefore contribute to the current sample being significantly more avoidant. Additionally, research has shown that individuals with avoidant attachment engage in sex to maintain relationships and avoid relational consequences (Impett, Gordon, & Strachman, 2008). Taken together, this may suggest the individuals who were single and eligible to participate in

this study may not utilize this sex for relationship maintenance strategy and therefore are less likely to maintain relationships through sex, and are more restrictive in sexual behaviors and attitude.

As stated, the population for the current study was recruited through Amazon Mechanical Turk. Another possible explanation for pattern of mean differences which may have produced a problem of restriction of range is that individuals who use Amazon Mechanical Turk may be more avoidant in their attachment orientations than the normal population. Amazon Mechanical Turk is a crowdsourcing site that allows individuals to participate in human intelligence tasks (HITs) in exchange for compensation. It is plausible that individuals interested in allocating their time to complete these tasks, where they are interacting with a computer interface versus other individuals, are more likely to be avoidant in their attachment orientation as this type of work is absent of intimate engagement with others. While no studies have examined the attachment orientations of AMT workers, some studies have explored other characteristics. In regards to personality, AMT workers are less extroverted than college populations and community samples (Goodman et al., 2013; Kosara & Ziemkiewicz, 2010) and more socially anxious than the general U.S. population (Shapiro et al., 2013). As stated previously, attachment avoidance is related to low scores on extraversion (Nofle & Shaver, 2006; Picardi et al., 2005).

Furthermore, there has been some debate on the quality of data produced by AMT workers. Many researchers have expressed concerns about AMT workers' attending to the material and their motivation to answer questions honestly (Gosling & Mason, 2014; Necka, Cacioppo, Norman, & Cacioppo, 2016; Peer, Vosgerau, & Acquisti, 2014). The nature of collecting data online through AMT workers means researchers have less control over the conditions under which workers are completing their studies (Gosling & Mason, 2014); however,

AMT workers have been found to engage in problematic respondent behaviors at rates comparable to community and campus samples (Necka et al., 2016), and one study found that they attended better to the material than other samples (Berinsky, Huber, & Lenz, 2012). Additionally, the inclusion of attention checks has been found to improve data quality of AMT workers (Peer et al., 2014).

Finally, the religious distribution of the participants in this study is significantly different than the religious distribution of individuals in the United States. The current study sample was significantly lower in Christianity (33.4%) compared to the United States in general (70.6%). Additionally, individuals in this study reported significantly more non-religious affiliation (62.1%) than the United States in general (22.8%). This significant difference in religious distribution may limit the generalizability of the findings. Research on AMT worker demographics indicates that AMT workers are less religious than the general U.S. population (Berinsky et al., 2012; Levay, Freese, & Druckman, 2016). Berinsky and colleagues (2014) conducted a study to look at the demographics of AMT workers and found the following religious distribution for their sample: 36.5% Christian, 41.8% non-religious, 4.4% Jewish, and 16.5% reported they were something other than those listed above (Berinsky et al., 2012). The religious distribution found by Berinsky and colleagues (2012) is similar to the religious distribution in this study and could explain the significant difference in religious distribution of participants in this study compared to the general U.S. population, as a function of AMT workers varying significantly from the general U.S. population in religiosity.

Future Directions

Future research in this area would benefit from developing a measure that accurately measures the constructs of relationship seeking on Tinder, sexual behavior on Tinder, and

frequency of use on Tinder. In order to draw meaningful conclusions, it is important that a measure be developed, tested, and shown to have good construct, criterion, and content validity as well as good internal consistency and reliability. Specifically, it would be helpful to have more items on the subscales to see which items yield the best reliability and measure the construct intended to be measured most accurately. The Tinder Relationship Motivation subscale only consisted of three items; having more items in the future would be helpful because the ones that did not hang together well could be removed and a more reliable scale may be achieved. Also, future research on Tinder might look at motivations for using Tinder outside of seeking relationships, as people may be utilizing this application for various other reasons, such as for an ego boost, peer pressure, entertainment, or out of loneliness. While this study focused on relationship seeking motivation, it would be helpful to know what other motivations drive people to use the Tinder application.

The failure to find evidence for attachment avoidance relating to any of the hypotheses is interesting given that the bulk of the literature on adult attachment suggests that attachment avoidance relates to higher permissiveness, more casual sex, and lower interest in romantic relationships, none of which were found in this study. Since this was the first study to look at these constructs in the context of Tinder, it would be helpful for more research to be conducted in this area to see how or why these findings differ from studies outside of Tinder.

In a similar vein, most of the research that looks at adult attachment and romantic processes with single individuals has been conducted with undergraduate student populations. The current sample was comprised of individuals between the ages of 18 and 55 with a mean age of 30, much higher than would be expected to be found in a normal undergraduate population.

Future research outside of the college population on attachment and relationship behaviors could bear more clarity.

The sample being significantly more avoidant could also be a function of AMT workers. Future research on the characteristics of people who perform tasks on AMT would provide some insight on if and how these individuals vary in their attachment orientation compared to the general population

The failure to find a relationship between relationship seeking and avoidant attachment raises the possibility that “committed relationship” may mean different things to different people. Future research might further explore this by asking participants what type of committed relationship they are seeking, or what they define as a committed relationship, to explore the possible nuance of this construct and explore how this relates to attachment orientation.

Furthermore, there is a need for research exploring the relationship between attachment avoidance and attachment anxiety and social anxiety. AMT workers have been found to be higher on social anxiety than community and college samples. This study consisted of participants recruited exclusively from AMT, and as stated above, they were significantly higher on attachment avoidance and significantly lower on attachment anxiety than the general population. Future research on this relationship would be fruitful.

Finally, more information is needed on characteristics of AMT workers and Tinder users in general. Demographic information on Tinder users is largely missing in the academic literature and there is a need for more information about AMT workers as well. Establishing if and how individuals that utilize these sites vary from the general population will allow researchers to draw more meaningful conclusions and would provide insight on what future questions might be meaningful to ask.

General Implications

The results of this study have implications for psychologists working in various mental health settings. The utilization of dating applications such as Tinder is becoming increasingly common, with an estimated 50 million Tinder users worldwide. As Tinder is a common way people are now connecting with potential romantic partners, it is important for psychologists to be aware of the unique advantages and challenges that this application presents for people in connecting with others interpersonally. The finding that attachment anxiety relates to seeking relationships on Tinder will be a point of interest for clinicians to focus on when working with individuals high on attachment anxiety. Clinicians can provide a supportive environment to help these individuals process their attachment needs and desires for seeking out relationships. Allowing a space for these individuals to explore how their anxiety may cause distress and roadblocks in finding a relationship that is healthy and rewarding for them, through Tinder or some other context, is important work and an opportunity to provide education and awareness of how their attachment system operates. Though no relationships emerged in relation to attachment avoidance, there is a plethora of research indicating that avoidance relates to relational issues and dissatisfaction (Beaulieu-Pelletier et al., 2011; Brennan & Shaver, 1995; Butzer & Campbell, 2008; Davis et al., 2006; Kirkpatrick & Davis, 1994). I believe it is beneficial for clients with insecure attachment orientations to work towards earned security in therapy for their overall well-being and to help them to improve all of their interpersonal relationships, including those sought through applications such as Tinder. It has been shown that intensive therapy can help individuals who are insecure in their attachment orientation move towards a more secure orientation, as secure attachment is found to yield the healthiest and most satisfying relationships (Wallin, 2007).

Conclusions

Findings from this study offer insight into how attachment influences Tinder use. Attachment anxiety was associated with utilizing Tinder to seek relationships and to engage in less sexual behavior on Tinder. There was no relationship found between attachment anxiety and utilizing Tinder frequently. The results from this study indicate that attachment avoidance might not play a role in whether or not individuals will seek a relationship on Tinder or their likelihood to engage in sexual behavior on Tinder. The use of an unestablished measure may play a large role in the findings being incongruent with previous research.

Additionally, no relationship was found between attachment avoidance and permissive sexual attitude, and permissive sexual attitude was not a mechanism through which attachment avoidance and sexual behavior related because no relationship was found between attachment avoidance and sexual behavior. A relationship was found between permissive sexual attitude and sexual behavior on Tinder; individuals with high permissiveness reported higher levels of sexual behavior on Tinder. Also, utilizing Tinder more frequently was related to more permissive sexual attitudes and sexual behavior on Tinder.

Moreover, the findings are consistent with previous research that gender plays a role in permissive sexual attitude, with men holding more unrestricted sexual attitudes than women (Lefkowitz et al., 2014; Petersen & Hyde, 2010; Sprecher, 2013). Gender was not found to moderate the relationship between attachment orientation and permissive sexual attitude. Attachment anxiety was found to relate to permissive sexual attitude, with higher attachment anxiety leading to more restrictive sexual attitude. These results were unexpected, particularly in regards to the failure to find relationships between attachment avoidance and permissive attitude and sexual behavior, which is counter to some previous research findings (Owen et al., 2014;

Sprecher, 2013). Although it is unclear why these findings have emerged the way they did, it is important to continue research in this area, as attachment greatly affects quality of relationships and overall well-being (Diener & Seligman, 2002), and dating applications like Tinder are becoming commonplace ways for millions to seek out connection.

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APPENDIX A

Amazon Mechanical Turk Advertisement

We are conducting an academic survey about individuals, their beliefs, and experiences using the mobile dating application, Tinder. You will be asked some questions about your sexual experiences and beliefs. If you are 18 years of age or older, single, a United States citizen, and use Tinder you are eligible to participate. This will take less than one hour to complete. Select the link below to complete the survey. At the end of the survey, you will receive a code to paste into the box below to receive credit for taking our survey.

Make sure to leave this window open as you complete the survey. When you are finished, you will return to this page to paste the code into the box.

***Template note for Requesters** - To verify that Workers actually complete your survey, require each Worker to enter a unique survey completion code to your HIT. Consult with your survey service provider on how to generate this code at the end of your survey.*

APPENDIX B

Consent Form

You are invited to participate in this study because you are 18 years of age or older, currently single, use the mobile application “Tinder”, and reside in the United States. The purpose of this study is to gain a better understanding about how individuals use the Tinder mobile dating application. This study is being conducted by Therese Borges, a Doctoral Candidate at Auburn University in the Department of Special Education, Rehabilitation, and Counseling, under the supervision of Annette Kluck, PhD, Associate Professor and Training Director in the Auburn University Department of Special Education, Rehabilitation, and Counseling.

What will be involved if you participate? Participation in this study is completely voluntary and you can withdraw at any given time. If you decide to participate in this study you will be asked to complete an online survey that will ask a variety of questions including information about your dating behavior. The total time to complete the survey will be approximately 15 minutes. The survey will need to be completed at one time. If you choose to participate please make sure that you can a lot 20-30 minutes of time to give yourself adequate time to complete it in its entirety.

Are there any risks or discomforts? The study contains questions that will ask you about your dating behaviors in relation to the Tinder application, some of which are sexual in nature. This could plausibly elicit feelings of discomfort. You are able to withdraw at any time should you choose to. There will be no identifiable information collected so your participation will remain anonymous.

Are there any benefits? There are no direct benefits in participating in this study.

Will you receive compensation for your participation in this study? Participation in this study will be \$1 within 3 days following your completion of participation through Amazon Mechanical Turk. The following exceptions listed will result in no compensation: failure to pass the attention checks, failure to meet inclusion criteria, and failure in the software beyond my control. To elaborate, there will be attention checks set up throughout the survey, which will make sure that you are paying attention. Failure to respond appropriately means your data will not be included in the study and you will not be compensated for your time. To participate in the study you need to meet the following inclusion criteria: 18 years of age or older, user of Tinder mobile application, live in the United States, and be single (currently not in a relationship). If you fail to meet these criteria you will not be able to participate in the study and therefore will not receive compensation. Lastly, if there is a malfunction with the software, this may interrupt your ability to successfully complete the study and receive compensation.

Is there a cost for participation? There is no cost for participation in this study.

Any data obtained in connection with this study will remain anonymous. We will protect your privacy and the data you provided by not collecting IP addresses and you will not be asked to provide your name or identifying information. Information collected through your participation will be used to fulfill an educational requirement and may be published in a professional journal, and/or presented at a professional meeting.

If you have any questions about this study please feel free to contact Therese Borges at tzb0011@tigermail.auburn.edu or Dr. Annette Kluck at ask0002@auburn.edu

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334) 844-5966 or e-mail at IRBadmin@auburn.edu or IRBChair@auburn.edu

The Auburn University Institutional Review Board has approved this document for use from September 11, 2016 to September 10, 2019. Protocol #16-302 EX 1609

You must decide whether or not you would like to participate in this research project. By clicking the button below, you acknowledge that you have read this information and give your consent to participate in this study.

APPENDIX C

Demographics Screening Form

The following demographics were used to determine eligibility for participation:

Are you 18 years of age or older?

Yes

No

Are you currently residing in the United States?

Yes

No

What is your relationship status?

Single

In a relationship

Partnered/married

Are you a United States citizen?

Yes

No

Do you use the mobile application “Tinder”?

Yes

No

APPENDIX D

Demographics Questionnaire

What is your relationship status?

Single

In a Relationship

Partnered

Married

Widowed

What is your gender?

Man

Woman

What is your sexual orientation?

Bisexual

Gay

Lesbian

Straight

Other

What is your age?

What is your race/ethnicity?

Asian/Pacific Islander

Biracial/Multiracial/Multiethnic

Black/African American

Hispanic/Latino

Native American/American Indian

White/Caucasian

Other

What is your religion?

Agnostic

Atheist

Buddhist

Christian

Hindu

Jewish
Muslim
Spiritual but not religious
Other

Have you ever been in a committed relationship?

Yes
No

How long was your longest relationship?

In total, how many people have you had sex with?

What portion of people you had casual sex with in the last year were from Tinder?

25%
50%
75%
100%
N/A

Do you have Tinder plus?

Yes
No

Have you ever been married?

Yes
No

Have you ever been engaged?

Yes
No

APPENDIX E

Tinder Use Behavior Questionnaire

The following statements concern your Tinder use behavior. Select the response that most accurately reflects your Tinder use. In these questions, sex refers to oral, anal, and vaginal sex.

I use Tinder as a way to meet someone to have a committed relationship with.

Strongly Agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

I have only had sex with people that I have an interest in having a committed relationship with from Tinder.

Strongly Agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

I use Tinder as a way to find someone to have casual sex with or an uncommitted relationship with.

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly Disagree

I have had sex with ____ people that I have met on Tinder

0

1

2-3

4-6

7 or more

I have had sex with ____ people from Tinder without having an interest in a long-term committed relationship.

- 0
- 1-2
- 3-5
- 6-9
- 10 or more

On average, how many people are you sexually involved with on an ongoing basis at the same time from Tinder?

- 0
- 1
- 2
- 3
- 4 or more

I have met ___ people from Tinder with the intent to have sex

- 0
- 1-2
- 3-5
- 6-9
- 10 or more

How many people do you have ongoing communication with, from Tinder, over the past week?

- 0
- 1-2
- 3-5
- 6-8
- 9 or more

On average, how often do you log into Tinder?

- Less than once a week
- Once a week
- Several times a week
- Once a day
- Several times a day

On average, how much time do you spend on Tinder a day?

- 0-30 minutes
- 30-60 minutes
- 1-2 hours
- 2-3 hours
- 3 or more hours

On average, how often do you meet up with people from Tinder?

Less than once a month
Once a month
Several times a month
Once a week
Several times a week