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Speed-Dating with Autism:

Initial Romantic Attraction among Adults with Autism Spectrum Disorder

A dissertation submitted in partial satisfaction of the
requirement for the degree Doctor of Philosophy
in Education

by

Siena Elizabeth Whitham

2014

ABSTRACT OF THE DISSERTATION

Speed-Dating with Autism:

Initial Romantic Attraction among Adults with Autism Spectrum Disorder

by

Siena Elizabeth Whitham

Doctor of Philosophy in Education

University of California, Los Angeles, 2014

Professor Connie Kasari, Chair

The social dynamics of adulthood present unique obstacles for individuals with autism spectrum disorders (ASD). Adults with ASD desire romantic relationships but have difficulty initiating and achieving these relationships (Ousley & Mesibov, 1991; Stokes, Newton, & Kaur, 2007). The processes of romantic attraction and relationship initiation for adults with ASD are currently unknown. To understand the processes associated with initial romantic attraction in adults with ASD, a speed-dating study was conducted with adults with ASD. Three speed-dating events were held, incorporating a total of 24 participants (18 male, 6 female), ranging from 18-30 years old. Female participants were repeated across events. Participants went on 5-6 'dates' each lasting 5-minutes, with members of the opposite gender. After each date, participants rated their initial romantic attraction towards each partner. Follow-up data was collected 1-month after each event. Results from Social Relations Model (SRM) analyses suggest that initial attraction was a

function of the actor, partner, and the unique relationship between the couple, with greatest factor, for men, being the actor and the greatest factor, for women, being the unique relationship between the couple. Findings suggest that initial romantic attraction for adults with ASD was positively associated with perceived similarity, ideal partner preferences, and dyadic reciprocity, negatively associated with generalized reciprocity, and not associated with actual similarity. Further, similar to speed-dating studies with typical adults, participants matched from speed-dating events led to electronic communication between couples, and dates for approximately one third of matches.

The dissertation of Siena Elizabeth Whitham is approved.

Sandra Graham

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2014

For my family.

TABLE OF CONTENTS

Chapter	Page
1. Introduction	1
2. Method	24
3. Analysis	31
4. Results	35
5. Discussion	43
6. Tables	60
7. References	76

LIST OF TABLES

Table	Page
<u>Table 1.</u> Participant Demographics	60
<u>Table 2.</u> Male and Female Participant Means and SDs on Key Variables	61
<u>Table 3.</u> Relative Variance Partitioning for Attraction	63
<u>Table 4.</u> Correlations between Self-Characteristics and Attraction	64
<u>Table 5.</u> Correlations between Partner-Characteristics and Attraction	66
<u>Table 6.</u> Correlation between Ideal Partner Preferences and Attraction	68
<u>Table 7.</u> Correlations between Partner Similarity and Attraction	69
<u>Table 8.</u> Correlation between Perceived Partner Similarity and Attraction	70
<u>Table 9.</u> Correlation between Male and Female Relationship Effects	71
<u>Table 10.</u> Correlations between Actor and Partner Effects	72
<u>Table 11.</u> Mean Comparison between Relationship Effects and “Matches”	73
<u>Table 12.</u> Follow-up Frequencies	74

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CHAPTER ONE: INTRODUCTION

Autism Spectrum Disorder (ASD), a developmental disorder characterized by abnormal or impaired development in social interaction, communication, and restricted/repetitive behaviors, is estimated to affect 1 in 68 youth in the United States, up from previous estimates of 1 in 88 youth (Center for Disease Control and Prevention [CDC], 2013). The surge of youth with ASD suggests that the number of adults with ASD will spike in the coming years. As these individuals enter adulthood, they will confront the task of developing new, mature social relationships in novel, unfamiliar environments. The changing social contexts and dynamics of adulthood bring increased attention and importance to romantic relationships (Arnett, 2000). Increased centrality of romantic relationships is a source of focus, interest, and challenge for individuals with ASD. Studies show that individuals with ASD desire romantic relationships (Ousley & Mesibov, 1991), yet struggle initiating and achieving these relationships in adulthood (Stokes, Newton, & Kaur, 2007; Farley, McMahon, Fombonne, Jenson, Miller, & Gardner, 2009; Howlin & Moss, 2012). By contrast, in the National Longitudinal Survey of Youth (wave II), sixty percent of typical young adults reported a current romantic relationship (Wood, Avellar, & Goesling, 2008). The stark contrast between these findings illustrates that individuals with ASD engage in romantic experiences far less frequently than typical populations, despite being desirous of such relationships. The ways in which adults with ASD successfully navigate romantic attraction and relationship initiation are currently unknown. This study seeks to illuminate the processes that lead to romantic attraction in adults with ASD.

Romantic Relationships in Adulthood

As individuals move toward maturity, social environments are in constant flux. In childhood, school is both the pillar and context of social development. In adulthood, however, the school environment declines in importance. Instead, familial life and romantic relationships become increasingly significant in shaping adults' social lives. Time spent with romantic partners increases throughout adulthood, while time spent with close friends decreases (Carstensen, 1992). Thus, romantic relationships become more serious and intimate as individuals transition to adulthood (Arnett, 2000).

Romantic relationships are prioritized as the bedrock of familial life in American society. The nuclear family is a cherished American value; thus, emphasis and attention to romantic relationships is considered a requisite to the formation of familial bonds. As stated by President Lyndon B. Johnson in his Commencement Address at Howard University:

The family is the cornerstone of our society. More than any other force, it shapes the attitude, the hopes, the ambitions, and the values of the child. And when the family collapses it is the children that are usually damaged. When it happens on a massive scale, the community itself is crippled (June 4, 1965).

As President Johnson articulated, the family and its preceding romantic union are foundational American ideals to which we grant cultural priority, promotion, and support.

Given this pervading societal value, the structure and scripts of American society are shaped to encourage and facilitate romantic relationships. Cultural scripts or schematics refer to the collective, societal guidelines for the manner in which individuals behave within specific relationships (Simon & Gagnon, 1986). Numerous economic and social arrangements are designed to promote coupledness – from marital tax-breaks and partner employment benefits, to

more benign social occasions that presuppose the attendance of couples, such as dinner parties and weddings. Furthermore, normativity dictates romantic couples should engage in a myriad of social and practical activities with one another. Long held social norms compel couples to live together, eat together, attend social engagements together, pay bills together, go on vacations together, spend holidays together, do errands together, and rear children together. The level of interdependence and sheer volume of shared daily activities inherent in American romantic partnerships differentiates romantic relationships from all other interpersonal relationships.

As individuals enter adulthood, cultural norms promote the expectation that individuals will initiate and develop romantic relationships until identifying a life partner. Clear cultural scripts shape dating and romantic relationship development in adulthood (Bartoli & Clark, 2006). Research regarding adult dating behavior highlights the fact that men and women are in strong agreement on what composes a typical date (Bartoli & Clark, 2006; Laner & Ventrone, 1998). For heterosexual couples, the normative dating process includes structured, couple-oriented activities (Mongeau, Jacobsen, & Donnerstein, 2007). While on a date, individuals expect to engage in polite, relaxed conversation that includes elements of self-disclosure and focus on the other party (Mongeau et al., 2007). The structure and activities associated with dates are often indistinguishable from platonic socialization; rather, it is the cognitive processes that differentiate dates from friendship (Mongeau et al., 2007). Specifically, attraction and sexual expectations discriminate a date from spending time with a friend (Mongeau et al., 2007).

In particular, first dates have a strong normative cultural script that men and women recognize in their report of first date activities. Based on Laner and Ventrone's (1998) study, the structure of a first date conforms to a normative, gendered dating script. Participants reported that on first dates, men are in charge of organization and structure, in that they select the venue,

buy flowers, provide transportation, and pay for dinner. Conversely, women take a more passive role on first dates. Despite the passive role women play on the first date, women reported engaging in more pre and post-date activities – for instance, buying a new outfit and discussing the date with friends (Laner & Ventrone, 1998).

The well-defined and versed dating scripts are unsurprising, given the prevalence of romantic relationship narratives in American culture. Television, film, literature, advertising, and magazines each promote such a narrative, essentially ensuring its prevalence and far-reaching acceptance. Numerous popular-press books and articles purport to offer dating secrets, outlining the rules for romantic courtship (e.g. *Not Your Mother's Rules: The New Secrets for Dating* by Ellen Fein and Sherrie Schneider; *Dating for Dummies* by Joy Browne). Although the “rules” for dating are rarely as transparent as such books suggest, their popularity indicates the belief in, and prevalence of, a rule-based approach to courtship practices.

Friendships in Adulthood

Unlike romantic relationships, friendships are considered one of the least institutionalized of all close relationships (Allan, 1993). Friendships are voluntary relationships that are not facilitated by social roles or rules (Palisi & Ransford, 1987). In adulthood, friendships follow far more nebulous cultural scripts than romantic relationships do (Allan, 1993). For single young adults, friends are the most preferred companion and confidant (Carbery & Buhrmester, 1998). During this phase, friends are the primary social support; however, as family roles increase, adults become less dependent on friends to meet social needs (Carbery & Buhrmester, 1998). As adults transition from single-life, to dating, to marriage and children, friendship networks become smaller, and contact with friends occurs less often (Kalmijn, 2003). As adults reach

middle age, they report having fewer friends and spending less time with friends than young adults (Adams & Blieszner, 1996). As individuals marry and procreate, friends act less frequently as social companions (Carbery & Buhrmester, 1998). Spousal ratings of companionship increase as familial involvement increases (Carbery & Buhrmester, 1998).

Given the fact that normative practices encourage great interdependence between married couples, increased spousal dependence is an unsurprising tenet of married life; however, not all adults have such experience. For single adults, friends remain the center of their social world even though making friends in adulthood can prove challenging (Carbery & Buhrmester, 1998). Work and civic obligations peak in adulthood, creating external conditions less conducive to friendship development (Blieszner & Roberto, 2004). Although little research has focused on adult friendships, many popular press authors have conducted interviews and written about the topic. According to an interview with Rebecca G. Adams, a professor of sociology and gerontology at the University of North Carolina, Greensboro, there are three essential conditions for making close friends: “proximity; repeated, unplanned interactions; and a setting that encourages people to let their guard down and confide in each other” (Williams, 2012, para. 13). Thus, the social environments of childhood, adolescence and young adulthood are better designed for friendship development. During these developmental periods, children, adolescents, and young adults develop friendships in structured social periods such as recess, lunch, social clubs, sports, and after-school activities. Understandably, many adults find their closest friendships were formed early in life.

External challenges are not the only obstacle to developing close friendships in adulthood. As people age, they sustain an internal shift in their view, approach, and perception of relationships (Carstensen, 1992). According to the Bureau of Labor Statistics (2012), adults

spend only 45 minutes a day socializing and communicating with family and friends. Given the limited socialization time available each day, adults grow more selective of the persons with whom they wish to spend their free time (Carstensen, 1992). Author Marla Paul, who wrote a book about making friends in adulthood titled, “The Friendship Crisis: Finding, Making, and Keeping Friends When You’re Not a Kid Anymore,” explained about friendship in adulthood, “The bar is higher than when we were younger and more willing to meet almost anyone for a margarita” (Williams, 2012, para. 25). In being more selective, it becomes more challenging to make new friends, especially given that adults may be unwilling to develop relationships with people who do not meet their social and emotional needs and expectations.

In view of the aforementioned obstacles to friendship formation in adulthood, the popular press has seized upon our communal perception thereof. Over the past few years, myriad articles, blog posts, and books have been written on the topic (e.g. *The Friendship Fix: The Complete Guide to Choosing, Losing, and Keeping Up with Your Friends* by Andrea Bonior Ph.D.; *Friends of a Certain Age: Why Is It Hard to Make Friends Over 30?* by Alex Williams). Alex Williams, in his *New York Times* article, discussed the challenges of forming friendships in adulthood. He argues that making new, deep friendships in adulthood poses challenges due to changing priorities and circumstances stemming from the process of maturation. Soon after its publication, Williams’ article became one of the *Times*’ most emailed articles, illustrating a strong resonance with readership. The ubiquity of this topic in the popular press suggests that the challenge of making new friends in adulthood echoes strongly with adults.

Social Outcomes of Adults with ASD

The changing social dynamics of adulthood present unique obstacles for adults with ASD. Due to social deficits, social immaturity, and/or social disinterest interfering with peer socialization, individuals with ASD often miss the socialization processes of childhood and adolescence (Humphrey & Symes, 2011). Many adults with ASD faced tremendous challenges developing close reciprocal friendships throughout childhood, adolescence, and young adulthood, placing them at a social disadvantage entering adulthood (Bauminger & Kasari, 2003; Locke, Ishijima, Kasari, & London, 2010; Orsmond, Krauss, & Seltzer, 2004). A review article by Howlin and Moss (2012) found that on average, 75% of adults with ASD did not have a friend. A study by Orsmond and colleagues (2004) examined the social relationships of adolescents and adults with ASD using mother report. The authors found that social deficits impacting friendships persist into adulthood inasmuch that nearly 50% of the sample had no peer friendships outside of prearranged activities such as school or work (Orsmond et al., 2004). Further, mothers reported that less than 10% of adolescents and adults with ASD had reciprocal friendships that included a variety of activities occurring outside prearranged settings (Orsmond et al., 2004). Fewer social impairments and being an adolescent were positively associated with improved peer relationships, suggesting that relationships become more challenging as individuals with ASD enter adulthood (Orsmond et al., 2004). Such statistics suggest adults with ASD are overwhelmingly socially isolated in adulthood.

Moreover, studies have shown that individuals with ASD desire romantic relationships, but have tremendous difficulty finding romantic partners (Ousley and Mesibov, 1991). A 20-year longitudinal outcomes study by Farley and colleagues (2009) found that only six participants (14%) were currently in long-term romantic relationships and twenty-eight participants (66%)

had only dated in a group setting or had never dated at all. A study by Howlin and Moss (2012) found that 85% of adults with ASD had never been in a long-term sexual relationship and/or married. Another study of adults with ASD found that none of the sixteen participants had ever been married or had children (Engstrom, Ekstrom, & Emilsson, 2003). Nevertheless, five of the sixteen participants had some form of romantic relationship experience (Engstrom et al., 2003). These studies suggest that few adults with ASD successfully enter romantic relationships in adulthood, but that they do desire these relationships.

Self-reported social outcomes of adults with ASD. Adults with ASD have reported lower quality of life than age and language-matched typical peers (Jennes-Coussens, Magill-Evans, & Koning, 2006). Given the lack of positive social and romantic relationships, it is unsurprising that adults with ASD report lower quality of life. Gaus (2010) summarized the main challenges reported by adults with ASD when they seek therapeutic support. These included depression, social/interpersonal issues, and difficulty with dating and sexuality. Challenges with social/interpersonal issues referred to patients' reported feelings of isolation or dissatisfaction with the number and/or quality of social relationships in their lives (Gaus, 2010). In addition, adults with ASD expressed motivation for friendships and romantic partnerships, yet voiced difficulty developing these relationships. Finally, adults with ASD reported limited experiences with dating and sexuality (Gaus, 2010). Adults with ASD identified each of these areas as a reason to seek psychotherapy; suggesting adults with ASD recognize these as areas of deficiency in their day-to-day lives.

Currently, most adults with ASD fail to successfully navigate the complicated social landscape of friendship or romantic relationships (Howlin & Moss, 2012). In an interview study, adults with ASD overwhelmingly reported feeling profoundly socially isolated and experiencing

great difficulty initiating social interactions (Muller, Schuler, & Yates, 2008). Given social challenges faced by adults with ASD, it is clear that these individuals could benefit substantially from novel strategies to help decrease loneliness and improve social/emotional happiness.

Social interventions for adults with ASD. Recently, the autism research community has begun to direct attention and resources towards assisting adults with ASD (e.g. one of Autism Speaks' research funding priorities is to improve adult outcomes; autismspeaks.org); however, the field has just begun to tackle their substantial and pervasive social challenges.

In 2012, Bishop-Fitzpatrick, Minshew and Eack published a review article synthesizing research on psychosocial interventions for adults with ASD. Despite the growing needs and recognition of adults with ASD, only thirteen articles met the study's lenient inclusion criteria; (1) the population include participants with ASD over 18 years old, (2) the study report quantitative findings, and (3) use a single case study, non- controlled trial, non-randomized controlled trial, or RCT design that reported pre-test and post-test data (Bishop-Fitzpatrick et al., 2012). The interventions targeted three types of outcomes—six studies tested the efficacy of social cognition training, five studies tested the efficacy of applied behavior analysis, and two studies tested the efficacy of community-based interventions. The sample size of each intervention was relatively small. The largest study included 71 participants, and a full three-quarters of included studies examined less than 20 participants.

Further, the targeted outcome measures did not examine social outcomes that impact the quality of life of adults with ASD. In other words, the outcome measures included many self-report questionnaires and tests of skill improvement, but did not examine real world contexts demonstrative of improved social lives. Based on the inadequate methodological rigor of intervention studies to improve social relationship outcomes for adults with ASD, efficacious

approaches have yet to be determined.

Finally, of the thirteen included studies, none specifically examined romantic relationship outcomes for adults with ASD. The scarcity of research in this area is particularly problematic given that both research studies and adults with ASD have identified romantic relationships as an area of interest and challenge (Gaus, 2010; Stokes et al., 2007).

Social differences in adults with ASD. Given social desires of adults with ASD may be unique and different than those of typical adults, developing efficacious interventions to improve social experiences for adults with ASD may prove challenging. A study by Hintzen, Delespaul, van Os, and Myin-Germeys (2010) found that adults with ASD have different social needs than typical adults. Hintzen and colleagues (2010) investigated the social lives of adults with ASD compared to typically developing adult controls in order to better understand the nature of the social relationships of adults with ASD. The study revealed adults with ASD spend similar amounts of time alone and engaged in social activities as other adults (Hintzen et al., 2010). Indeed, adults with ASD rated social company as equally pleasant as compared to other adults (Hintzen et al., 2010). However, despite these similarities, the social experiences of adults with ASD differed from control adults – particularly in the amount of time spent with familiar people (e.g. family) (Hintzen et al., 2010). Compared to controls, adults with ASD spent more time with familiar people and less time with acquaintances (Hintzen et al., 2010). Moreover, adults with ASD reported more negative affect – particularly anxiety – and less positive affect when in social environments with unfamiliar individuals (Hintzen et al., 2010). This finding indicates adults with ASD likely experience more social anxiety when socializing with less familiar individuals compared to controls.

Further, these findings suggest adults with ASD enjoy socializing as much as typical

adults; however, their enjoyment is dependent on socializing with familiar people versus acquaintances. The difference in socialization preferences is crucial when considering how to improve the social lives and outcomes for adults with ASD. Results indicate that adults with ASD will likely be unsatisfied by social acquaintances but instead desire close, familiar social relationships to satisfy social needs.

Two adults with ASD highlighted this preference in a focus group on social relationships in adulthood (Whitham, 2013). The participants expressed their desire for close relationships through a disinterest in acquaintance or superficial relationships (personal communication, March 16th, 2013). One participant, a 27-year-old male with Asperger's syndrome, described a friend as "someone that I can actually feel close to. I don't really have any use for acquaintances. I don't like artificial relationships." Another participant, a 29-year-old male with Autism, expressed a similar sentiment. He observed, "Going back to what I said about the friendships, like I mentioned that it's very like time consuming. So I'd rather have one really close friend than a bunch of people who are trying to be my friend." Both of these participants expressed a clear preference for relationships in which they felt close and comfortable. Social relationships perceived as less familiar were judged as less enjoyable and less meaningful.

Romantic Relationships for Adults with ASD

In the area of social development, individuals with ASD enter adulthood with significant disadvantages. Internal and external social difficulties place adults with ASD in a uniquely challenging position. Limited preexisting friendships, limited romantic relationship experiences, and desire for close relationships, combined with environmental challenges to making new friends and prioritization of romantic relationships in adulthood, create a setting that offers

limited social options for adults with ASD. Given these circumstances, the best, simplest approach to developing a fulfilling social life for adults with ASD is likely through development of a close, meaningful romantic relationship.

Involvement in positive romantic relationships may prove critical for improving the quality of life and social outcomes for adults with ASD. Positive romantic relationships provide a preponderance of shared activities and emotional support, while only having to juggle and maintain one close relationship. Obtaining similar levels of social and emotional support through friendships requires development, maintenance, and management of several close friendships.

Social challenges are the hallmark of ASD (Kanner, 1943). As such, creating a fulfilling social environment that limits social complications will likely improve social outcomes for adults with ASD. Furthermore, clear cultural scripts regarding dating etiquette may prove simpler to navigate for adults with ASD, especially as compared to the undefined nature of friendship development in adulthood. Studies have shown that adults with ASD have an unusually strong drive to systemize, which can be characterized as the drive to “derive the underlying rules that govern a behavior of a system...[and] the drive to construct systems” (Baron-Cohen, Richler, Bisarya, Gurunathan, & Wheelwright, 2003, p. 361). Normative dating scripts and the potentially linear progression of romantic relationship development from meeting, to dating, to entering a romantic relationship, to engagement, and finally marriage, are likely amenable to a systematizing cognitive approach. Finally, adults with ASD desire romantic relationships, increasing their motivation to seek out and initiate such relationships (Ousley & Mesibov, 1991). Internal motivation for romantic relationships will likely increase adults’ perceived level of happiness when they attain such relationships.

Only one study has examined the practices used by individuals with ASD in initiation of a romantic relationship. Stokes and colleagues (2007) compared the romantic practices of individuals with ASD to typically developing individuals. The romantic functioning findings were based on a 6-question parent-report subscale comprised of primarily dichotomous “yes/no” questions and focused on the difficulties experienced by individuals with ASD when initiating romantic relationships. The study found several key differences between individuals with ASD and typically developing individuals in their approach to romantic relationship initiation.

A typically developing individual generally engaged in a handful of appropriate behaviors toward a specific person in whom s/he was romantically interested. Conversely, individuals with ASD engaged in a greater number of inappropriate courtship behaviors (e.g. inappropriate touch, showing obsessional interest, following them) than typically developing individuals (Stokes et al., 2007). In addition, results showed a significant difference between the two groups concerning the type of person they chose to romantically pursue (Stokes et al., 2007). Individuals with ASD disproportionately pursued more inappropriate partners, such as celebrities (Stokes et al., 2007). Additionally, in the absence of a response, or when presented a negative response, individuals with ASD often maintained pursuit for longer periods of time than typically developing individuals deemed decorous (Stokes et al., 2007). Finally, the study revealed that individuals with ASD relied less often upon behaviors enjoining interpersonal contact to pursue romantic interests (e.g. phoning or directly asking for a date).

Despite the aforementioned behavioral differences identified by Stokes and colleagues (2007), due to methodological concerns, significant questions remain as to the processes of romantic relationship initiation and development for individuals with ASD. As with the study by Stokes and colleagues (2007), to date, the available research on romantic and sexual experiences

of individuals with ASD has primarily relied on caregiver report and has focused on challenges for this population (e.g. Stokes & Kaur, 2005; Stokes et al., 2007). Given that adults with ASD may not relay information concerning dating or relationship practices to their caregiver, caregiver report is likely a less reliable lens through which to view these experiences. Furthermore, the limited number of questions concerning romantic functioning, combined with dichotomous “yes/no” answers, may not provide a comprehensive picture on the dating and romantic relationship initiation practices of people with ASD.

Currently, very little literature speaks directly to the processes of romantic relationship initiation and development for adults with ASD. In order to create efficacious interventions to help adults with ASD develop positive, meaningful romantic relationships, it is necessary to first understand how romantic relationships are formed within this population. This study seeks to understand the processes of romantic attraction and romantic relationship initiation in adults with ASD. To examine the processes of romantic attraction and relationship initiation, a normative intervention utilizing a speed-dating approach will be developed for adults with ASD.

Speed-Dating – As a Form of Romantic Relationship Initiation

Over the past several years, social psychologists have begun to use speed-dating designs to better understand the processes of romantic attraction and relationship initiation in typical populations. Previous research on romantic attraction relied on individuals’ stated preferences. Unfortunately, stated preferences rarely align with acted-upon preferences in real-life contexts. Utilizing speed-dating designs has allowed researchers to better understand how the processes of attraction unfold in real world settings (Finkel, Eastwick, & Matthews, 2007). Studying the

processes of attraction through a speed-dating paradigm allows researchers to identify the factors that lead to attraction and relationship initiation within a controlled setting.

At speed-dating events, individuals take part in several “mini-dates” with other attendees. Each mini-date lasts for a short, set amount of time, generally ranging from 3-8 minutes. At the end of a speed-dating event, participants elect whether or not they wish to pursue further familiarization with particular attendees by selecting “yes” or “no” on a form about each person with whom they shared a mini-date. If two participants indicate, “yes” about one another, their contact information is shared, at which point, attendees can elect to go on a more traditional date.

Speed-dating paradigms provide an incredibly useful research design. Such events are highly controllable yet still provide ecological validity. The structure of speed-dating research allows researchers to gather background information on individual participants before meeting potential partners, observe and analyze dyadic interactions between partners, and follow-up on participants after the speed-dating event (Finkel et al., 2007). The ability to proactively observe and follow individuals before they meet potential partners through the processes of romantic attraction and relationship initiation is essential to understanding romantic relationship development.

Moreover, at speed-dating events, all participants simultaneously evaluate one another, providing researchers a unique opportunity to understand the perspectives of both partners before, during, and after the event (Finkel et al., 2007). Finally, speed-dating events provide strong ecological validity in that the behavior and actions of participants have real world consequences on participants’ future romantic relationships. The ability to form real-world romantic relationships with appealing speed-dating partners creates motivation to take the processes seriously.

Speed-Dating Findings in Typical Populations

Romantic attraction or “chemistry” is often hard to explain or understand. It is difficult to determine and differentiate why two people feel excited by each other’s presence while others feel nothing. Speed-dating studies have allowed researchers a unique perspective to better understand the processes of romantic attraction. Dyadic interactions contain three factors – the actor, the partner, and the dyadic relationship (e.g. the unique relationship between the actor and partner). Speed-dating studies have shown that each factor plays a substantive role in mutual attraction; however, the dyadic relationship is the most important for developing attraction (Asendorpf, Penke, & Back; 2011; Lou & Zhang, 2009). One study of speed dating found that attraction, on average, was explained mostly by the relationship (43%) and by the actor 34% of the time and the partner 23% of the time (Lou & Zhang 2009). Thus, the unique relationship shared by two people is the greatest contributor to initial attraction.

Speed-dating studies have also allowed researchers to identify individual characteristics that correlate with indicating greater romantic attraction towards partners. For men, one study showed that enjoying fun and social activities and being politically liberal was associated with indicating more attraction towards speed-date partners (Lou & Zhang, 2009). While another study showed that men who were rated as less physically attractive and had less years of education indicated more attraction towards their partners (Asendorpf et al., 2011). For women, one study showed that an interest in art and social activities, being young, weighing more, being extroverted, open, and cheerful was associated with indicating more attraction towards speed-date partners (Lou & Zhang, 2009). While another study showed that weighing more and being shy was associated with indicating more attraction towards male partners (Asendorpf et al., 2011). These results indicate that specific individual characteristics may influence participants

overall level of partner attraction; however, these individual characteristics are not consistent across studies.

Speed-dating studies have demonstrated that physical appearance is the greatest predictor of attraction for both men and women in a speed-dating context (Asendorpf et al., 2011; Luo & Zhang, 2009). Previous research on mate preferences found gender differences in partner preferences, with men placing greater value on physical attractiveness than women (Buss, 1989; Feingold, 1990). As such, the consistent, cross-gender preference for physical attractiveness is surprising. The gender differences found between stated, hypothetical mate preferences and mate preferences in real-life contexts are likely attributed to differences between cognitive, rational preferences in the abstract and actual preferences in real-life (Lou & Zhang, 2009). The study demonstrated that men place greater importance on physical attractiveness when thinking about an abstract, theoretical partner compared to women, who often endorse earning potential as a primary value. Contrarily, when men and women actually interact with potential partner in speed-dating contexts, physical attractiveness is the strongest predictor of attraction for men and women equally. Degree of physical attractiveness was the greatest predictor of attraction, with both men and women being attracted to partners with the highest degree of physical attractiveness. There was no evidence of similarity of physical attractiveness predicting attraction (Lou & Zhang, 2009).

Studies also revealed discrepancies between stated preferences and preferences based on real-life interactions in the area of ideal partner preferences. Before meeting a potential romantic partner, college students were asked whom they were most interested in—potential partners whose profiles were manipulated to be similar or different from their ideal partner preferences (Eastwick, Finkel, & Eagly, 2011). Participants indicated greater interest in partners whose

profiles had been manipulated to match their ideals. However, when these same participants had a live interaction with the partners, the preference for partners whose profiles matched their ideals disappeared. After interacting with potential partners in a real-life situation, romantic interest was no longer impacted by whether or not the partners aligned with their ideal partner preferences (Eastwick et al., 2011). Further, a study by Eastwick and Finkel (2008) demonstrated that individuals' stated preferences were not related to their in-vivo ratings in a speed-dating context. In other words, individuals' stated partner preferences before a speed-dating event, such as a preference for an intelligent or humorous partner, were not related to individuals' in-vivo ratings of attraction or chemistry (Eastwick & Finkel, 2008).

Additionally, speed-dating studies have found a striking lack of evidence for the impact of similarity on romantic interest (Lou & Zhang, 2009). Lou and Zhang (2009) found no relationship between similarity, based on the 22 personality characteristics, and attraction. This finding was replicated and further supported by Tidwell, Eastwick, and Finkel (2012), which found that actual similarity did not predict romantic liking in a speed-dating context. However, Tidwell and colleagues (2012) revealed that unlike actual similarity, perceived similarity predicted romantic liking. In other words, participants who perceived their interaction partner to be similar to themselves were far more likely to indicate romantic liking towards their partner. These studies suggest that individuals may prefer to date similar partners; however, perceived partner similarity is more important for predicting attraction than actual partner similarity.

Speed-dating studies have shown mixed results regarding that the impact of dyadic reciprocity—liking that is shared uniquely between two participants—at speed-dating events (Kenny, 1994). Studies by Eastwick, Finkel, Mochon, and Arian (2007) and Asendorpf and colleagues (2011) found that, in general, speed-date partners uniquely liked participants who

uniquely liked them, supporting the effect of dyadic reciprocity. However, another speed-dating study by Lou and Zhang (2009), found that the impact of dyadic reciprocity was weak at the time of a speed-dating event, but strong after the participants were informed of the potential partners' liking ratings. In other words, at the speed-dating event, participants had to interpret or guess partners' romantic desire; in contrast, after the speed-dating event, participants were told the potential partners liking-ratings. After being informed of the liking-ratings participants' level of attraction increased for partners who endorsed liking them. Evidence suggests that the dyadic reciprocity effect is stronger when liking is explicitly known; however, the preponderance of evidence suggests that individuals uniquely like others who like them, even when their liking is not explicitly known (Asendorpf et al., 2011; Eastwick et al., 2007).

Unlike dyadic reciprocity, generalized reciprocity—a general tendency to romantically desire most partners—decreased participants desire for a partner (Kenny, 1994; Eastwick et al., 2007). In a speed-dating context with college students, potential partners who showed a generalized desire for others were found less desirable and participants reported sharing less chemistry with those potential partners (Eastwick et al., 2007). Partners who expressed generalized desire were believed to be more likely to agree to date numerous people, which decreased their desirability. This finding differs from attraction research with nonromantic populations where generalized desire is perceived positively. The findings from this study suggest that in a romantic context, unlike a nonromantic context, adults have a desire to feel special and unique in an early romantic exchange.

The Current Study

Given that romantic initiation is one of the greatest hurdles to romantic intimacy, concurrent with the fact that a large portion of adults with ASD have never entered into a romantic relationship, it is imperative to understand the formative processes of romantic relationships within this population (Farley et al., 2009). To determine the processes that lead to romantic attraction and relationship initiation in adults with ASD, a speed-dating study was conducted, prospectively examining the processes of romantic attraction. Specifically, by parsing out the unique effect of participant characteristics, partner characteristics, and the dyadic interaction, this study examined the factors that lead to romantic attraction within this population.

Research Questions and Hypotheses

RQ1. What factor has the greatest impact on romantic attraction: the actor, the partner, or the dyadic relationship?

Hypothesis: The dyadic relationship would have the greatest impact on romantic attraction, as found in typical populations (Asendorpf et al., 2011; Lou & Zhang, 2009).

RQ2. What actor self-characteristics (such as gender, level of autism symptomatology, age, physical attractiveness, or personality characteristics) are associated with initial romantic attraction (i.e. how much attraction each individual indicated towards their dates)?

Hypothesis: Men and women who were rated as less physically attractive would indicate a greater level of attraction towards their dates than people who are more physically attractive.

RQ3. What partner self-characteristics (such as age, physical attractiveness, level of autism symptomatology, or personality characteristic) are associated with received romantic attraction (i.e., how much attraction each partner received from their dates)?

Hypothesis: Greater physical attractiveness, lower levels of autism symptomatology, and lower neuroticism would be associated with partners' receiving more ratings of attractiveness from their dates, with physical attractiveness being the greatest predictor as in typical populations (Lou & Zhang, 2009).

RQ4. Are ideal partner preferences associated with initial romantic attraction?

Hypothesis: Similarity between participants' ideal partner preferences and perceived partner characteristics would not be associated with initial romantic attraction, as demonstrated in typical populations (Eastwick et al., 2011). However, it is possible that individuals with autism are less influenced by social pressure when selecting their partner preferences, thus allowing for similarity between ideal partner preferences and partner characteristics to be associated with romantic attraction.

RQ5. Is partner similarity associated with initial romantic attraction?

Hypothesis: As with typically developing young adults, similarity between the actor's self-characteristics and the partner's self-characteristics would not be associated with initial romantic attraction (Lou & Zhang, 2009; Tidwell, Eastwick, & Finkel, 2012).

RQ6. Is perceived partner similarity associated with initial romantic attraction?

Hypothesis: Similar to typically developing populations, participants' perceived similarity with the interaction partner would not be associated romantic attraction (Tidwell et al., 2012).

RQ7. Is dyadic reciprocity (i.e., liking that is shared uniquely between two participants) associated with initial romantic attraction (i.e. whether participants' initial attraction is contingent upon how much their partner likes them)?

Hypothesis: Dyadic reciprocity would not be associated with mutual romantic attraction. In other words, if an actor uniquely likes a partner, it would not impact whether the partner uniquely like the actor in return, as found in one of the speed-dating studies (Lou & Zhang, 2009).

RQ8. Does generalized reciprocity (i.e. how much a participant likes others, in general) impact partners' romantic attraction (i.e. how much partners like the participant)?

Hypothesis: Contrary to findings in typical populations, participants would have a difficult time discriminating between dyadic and generalized reciprocity due to social deficits and a strong desire for romantic connection, thus it is hypothesized that participants who demonstrate generalized reciprocity in romantic partners would be desired more by partners (Eastwick et al., 2007).

RQ9: Does romantic attraction in a speed-dating context translate into real-life interactions between participants?

Hypothesis A: Higher ratings of romantic attraction on the interaction record would increase the likelihood that participants select their partner as a “match”.

Hypothesis B: Participants would make contact with their matches after the speed-dating event in order to get to know them better.

CHAPTER 2: METHODS

Participants

Twenty-four young adult participants (18 males, 6 females) ranging from 18-30 years of age ($M = 24.63$; $SD = 2.39$) participated in speed-dating events (see Table 1.). All of the participants had a previous diagnosis of an autism spectrum disorder. Eleven participants identified as having a previous diagnosis of autism, eight had Asperger's syndrome, three had an autism spectrum disorder, and two had pervasive developmental disorder-not otherwise specified. Nine participants identified themselves as Caucasian, five as Asian, four as Latino/Hispanic, three as African American, two as Middle Eastern, and one as Other. All participants identified as heterosexual. Thirteen participants were employed and eleven participants were not employed. The University IRB approved this study. Participants provided informed consent to participate in the study.

Recruitment

Participants were recruited through disbursement of flyers. Flyers were disbursed to organizations and individuals who have contact with adults with ASD, as well as posted online on blogs, Facebook groups, and other social media websites. Paper-based flyers were posted throughout Los Angeles advertising the study, as well as distributed at autism-related events in Los Angeles (e.g., Autism Speaks Walk, Advance LA conference). Online advertisements were posted on autism-related websites, forums, blogs, social networking pages (e.g., Facebook.com, wrongplanet.net), and flyers were emailed to autism support groups and centers throughout the Los Angeles area (e.g., The UCLA PEERS Program, The Family, Adult, Child Therapies

(F.A.C.T.) GAP program, Meet Up groups, Advance LA, etc.). One organization, The F.A.C.T. GAP program requested to have someone speak directly to their students about the speed-dating study, so a researcher distributed flyers and presented about the speed-dating study to two groups of adults with ASD.

Forty-one individuals expressed interest in participating in the study through emails and/or phone calls. Thirty-two individuals completed the phone screener, with thirty-one meeting eligibility criteria. One participant was too old to participate in the study. Four eligible participants never completed the pre-event online questionnaire required to participate in the study. Twenty-eight participants were eligible to participate and completed the pre-event online questionnaire; however, four of these participants were not available to attend a speed-dating event. Twenty-four participants attended the speed-dating events.

Procedure

Three speed-dating events were conducted. Twelve participants attended the first event (6 men, 6 women), 11 participants attended the second event (6 men, 5 women), and 11 participants attended the third events (6 men, 5 women). The same women were repeated across the three speed-dating events. The speed-dating procedures were broken up into four sections: pre-event, at-event, post-event, and follow-up procedures.

Pre-event Procedures. After indicating interest in the speed-dating study, participants were called to determine study eligibility. Once eligibility was determined, participants were sent an email containing a consent form, questionnaires about themselves, a questionnaire about their ideal partner, along with sample speed-date questions designed to spur conversation via an electronic survey system. The questionnaires included information on participants' background

including a section on participants' relationship history, actual self-characteristics, personality, autism symptomatology, social skills, and dating anxiety. The ideal partner questionnaire included an inventory about ideal partner characteristics. The sample speed-date questions were provided to assist participants with suggested conversational topics. The email also included general information about the date, time, and location of the speed-dating event. Further details regarding the speed-dating event were sent to participants after the online questionnaires were completed. Each participant received a reminder email the day before the event.

Speed-Dating Event Procedures. Three speed-dating events were conducted, taking approximately 2 hours each to complete. At each event, a maximum of 6 women and 6 men participated. The speed-dating events were held in an attractive room on university property (e.g. conference room with big windows). Before the events, the room was arranged to have 6 dyadic seating areas. Each seating area had suggested conversational questions to assist participants if they had difficulty maintaining conversation during the 5-minute interactions. Snacks and refreshments were served to help create an appealing and casual environment.

At the events, a researcher checked in participants as they arrived. Participants were given a nametag with their first name and an assigned research identification number to wear. Another researcher took a picture of the participants and gave them a clipboard with 6 interaction records that were filled out after each speed-date. The participants were then directed towards their assigned seat. The seats were marked with participant identification numbers.

Once all participants were checked in and seated, a researcher welcomed all of the participants and went over the instructions for the event. The researcher reminded participants that they would receive their speed-dating "matches" (i.e. couples who both indicate interest in getting to know the person further) with the contact information within a week of the event. Each

speed-date lasted 5-minutes. To provide structure and guidelines to the event, the researcher reminded participants before each speed-date that it is important to allow each date-partner to have an opportunity to share about themselves and learn about the his/her partner. After each 5-minute date, a researcher rung a bell, indicating that it was time for the men to rotate clockwise to their next position (the women remained seated throughout the event). After rotating seats, the participants were instructed to complete the interaction record on their clipboard regarding the speed-date they just finished. This procedure was repeated until each of the couples had met.

At the end of each event, participants were given a post-event questionnaire that asked participants their opinion regarding the event, their interactions, and their speed-date partners. The questionnaire asked participants to indicate whether or not they were interested in getting to know any of their date partners further, by sharing their email address.

Researchers collected the interaction records and pre-match questionnaires, gave participants reimbursement for the cost of parking, and thanked participants for coming to the event.

Post-Event Procedures. Within one week of each speed-dating event, participants were sent their speed-date “matches” via email with the contact information of the matched partners. Matches occur when both speed-date partners circled “yes” indicating a desire to get to know the date partner better, through exchanging contact information. The email included the matches’ names and email addresses.

Follow-Up Procedures. One month after the matches were sent out, a follow-up questionnaire inquiring about participants’ current relationship status, degree of correspondence, physical contact, and emotions towards their “matches” was emailed to participants through an electronic survey system. The follow-up questionnaire was filled out one time for each match.

Participants were also sent a short questionnaire that assessed their perceived overall quality of life and social life.

Measures

Participant Descriptive Measures.

Background Information Questionnaire (BIQ). The BIQ is a 7-item questionnaire to gather descriptive information about participants. The BIQ asks participants to provide information about their gender, race, sexual orientation, education level, work status, ASD diagnosis, and romantic relationship experience.

Quality of Life Questionnaire. The Quality of Life Questionnaire is a 4-item questionnaire developed for this study to assess participants' perceived overall quality of life and social life using a 1-9 agreement scale.

Social Responsiveness Scale for Adults, Second Edition (SRS-A; Constantino & Gruber, 2005). The SRS is a 65-item rating scale of severity of ASD symptoms as they occur in natural social settings. The SRS measures impairments in social behaviors such as assessing social awareness, social information processing, capacity for reciprocal social communication, social anxiety/avoidance, and autistic preoccupations and traits using T-scores (M = 50; SD = 10). Higher scores represent more autism related traits.

Big Five Inventory (BFI; John, Donahue, & Kentle, 1991). The BFI is a 44-item questionnaire that assesses the Big Five personality domains and is freely available for use in research. The BFI has been shown to produce reliable domain scales, clear factor structure, strong convergence with longer Big Five measures, and substantial self-peer agreement (Benet-Martinez & John, 1998; John, Naumann, & Soto, 1998; Soto, John, Gosling, & Potter, 2008).

Dating Anxiety Scale for Adolescent (DAS-A; Glickman & La Greca, 2004). The DAS-A is a 26-item measure that assesses individuals' anxiety in heterosexual and dating situations. Items are rated on a 5-point scale ranging with 1 (*not at all characteristic of me*) to 5 (*extremely characteristic of me*). The DAS-A is comprised of three subscales: Fear of Negative Evaluation-Dating (FNE-Dating, 10 items), Social Distress-Dating (SAD-Date, 7 items), and Social Distress-Group (SAD-Group, 4 items) (Glickman & La Greca, 2004). The DAS-A and its subscales have good internal consistency—.94 for Total DAS-A, .92 for FNE-Dating, .88 for SAD-Date, and .81 for SAD-Group (Glickman & La Greca, 2004).

Actual Self-Characteristics Questionnaire. The Actual Self-Characteristic Questionnaire is a 12-item questionnaire that assesses participants' perceptions of their self-characteristics using a 1-9 agreement scale. The questionnaire items are adapted from Eastwick and Finkel's (2007) Interaction Record. The questionnaire asks participants to describe their personal characteristics.

Physical Attractiveness. Four members of the research team independently rated the physical attractiveness of each participant on a scale ranging from 1 (*very unattractive*) to 9 (*very attractive*). The average physical attractiveness rating was used to indicate participants' physical attractiveness. Interrater agreement was good ($\alpha = .80$).

Partner Preferences Measure.

Ideal Partner Characteristics Questionnaire. The Ideal Partner Characteristic Questionnaire is a 37-item questionnaire that assesses participants' ideal partner characteristics using a 1-9 agreement scale. The questionnaire items are adapted from Eastwick and Finkel's (2007) Interaction Record and Fletcher, Simpson, Thomas, and Giles (1999) "Short Version of

the Partner and Relationship Ideal Scales.” The questionnaire asks participants to assess how important specific characteristics are in a romantic partner. Twelve key items were used to calculate the difference scores between participants’ stated, ideal preferences and rated attraction.

Speed-Date Interaction Questionnaire. The Speed-Date Interaction Questionnaire is a 2-part questionnaire that is given to participants directly after each speed-date. The questionnaire items were adapted from Eastwick and Finkel’s (2007) Interaction Record. The first section asks participants to assess their speed-dating partner on 12 characteristics using a 1-9 agreement scale. The second section consists of 10-items assessing participants’ attraction towards their interaction partner, perceived attraction from their interaction partner, and perceived partner similarity using a 1-9 agreement scale.

Post-Event Questionnaire. The Post-Event Questionnaire is a 2-part questionnaire. The questionnaire asks participants to indicate whether or not they are interested in getting to know any of their interaction partners further, by sharing their email address. It also asks participants to estimate how many matches they think they will receive. The second section consists of a 9-item questionnaire that assesses participants’ overall experience of the speed-dating event.

Follow-Up Questionnaire. The Follow-Up Questionnaire is a 6-item questionnaire to assess the nature of the relationship between “matches” one-month after the speed-dating event. The questionnaire assesses participants’ current relationship status, degree of correspondence, physical contact, and emotions towards their “matches.”

CHAPTER THREE: ANALYSIS

To account for the inherent nonindependence of the data in this study, Kenny and LaVoie's (1985) Social Relations Model (SRM) was used to analyze the data. As per their original article, SRM is designed to analyze dyadic data with continuous variables (Kenny & LaVoie, 1985). The critical assumption of SRM is that for any dyadic variable, the rating from one participant is based on three effects: the actor effect, the partner effect, and the relationship effect (Kenny et al., 2006). As such, the systematic variance from dyadic variables can be portioned into three component parts: the variance from the actor effect, the variance from the partner effect, and the variance from the relationship effect (Kenny et al., 2006). The actor effect represents a person's average level of a specific behavior. For example, given the variable likeability, the actor effect represents the amount a participant, on average, likes others. Correspondingly, the partner effect represents the average level of response elicited from participants. Continuing with likeability, the partner effect represents the amount others, on average, like a participant. Finally, the relationship effect represents an individual's behavior towards another person in particular – above and beyond the actor and partner effects. Concluding the likeability example, a female participant's relationship effect towards a male partner represents the extent to which she likes the partner while controlling for her average tendency to like others (i.e., actor effect) as well as the partner's general tendency to be liked (i.e., partner effect).

Within SRM, two main structural models for participant interaction exist. The first consists of a round robin design whereby each person in a group interacts with and rates every other member of the group (Kenny et al., 2006). The second, utilized for this study, comprises a

block design in which participants are broken up into two subgroups and each person interacts with and rates everyone in the other subgroup (Kenny et al., 2006). More specifically, this speed-dating study employed an asymmetrical full block design in which participants were divided into two subgroups with distinguishable dyads (e.g. male and female). All members of one group (e.g. male) subsequently interacted with and rated all members of the other group (e.g. female) and vice versa. Members of both the male and female groups serve as actor and partner.

In order to analyze the resultant data, unique identifiers were created for each subgroup (i.e., male, female) (Kenny et al., 2006). Further, this study utilized a classification variable to distinguish between male participant data and female participant data (Kenny et al., 2006).

RQ1. To determine what factor had the greatest impact on initial romantic attraction, SRM analyses were conducted using Statistical Analysis System (SAS software). Participants' summed initial romantic attraction scores were input into SAS in order to calculate the systematic variance accounted for by the actor, partner, and relationship effects. Using SRM algorithms provided by David Kenny, the variance of the actor, partner, and relationship effect for initial romantic attraction was calculated. The analyses output both absolute and relative variance partitions of attraction (i.e. the actor effect, partner effect, and relationship effect). The relative variances, free of errors, were compared to determine the factor with the greatest impact on romantic attraction.

RQ2. To test which actor self characteristics may predispose certain participants to exhibit or report relatively more attraction to potential partners than those actors who exhibit or report relatively less attraction to potential partners, this study computed correlation between each self-characteristic and the actor effect for attraction. The aforementioned correlations were computed separately for men and for women.

RQ3. To test which partner self-characteristics tend to be associated the receiving greater romantic attraction, partner characteristics were correlated with partner effects of attraction. This was done for men and women separately. The correlations demonstrated what people find attractive about others as partners.

RQ4. To test whether similarity between participants' ideal, stated partner preferences and their in-vivo ratings of partner characteristics were related to romantic attraction, an overall absolute difference score between participants' ideal partner preferences and their ratings of partner characteristics was computed for every couple. Subsequently, the overall difference score was correlated with the relationship effect (i.e. the unique liking between each couple) of men's attraction and women's attraction to determine if ideal preferences were associated with initial romantic attraction.

RQ5. To test whether the similarity between two partners plays a role in attraction, this study computed the absolute difference score between the two partners on every characteristic for each couple. The difference scores were correlated with relationship effects (i.e. the unique liking between each couple) of men's attraction and of women's attraction.

RQ6. This study tested the impact of perceived similarity on attraction through two different analytical approaches. To test whether participants' general perception of perceived similarity was associated romantic attraction, the summed score on items that assess perceived similarity on the interaction record (e.g. "My interaction partner and I seemed to have a lot in common.") were correlated with the relationship effects (i.e. the unique liking between each couple) of men's attraction and of women's attraction.

To test whether participants' perceived similarity with their interaction partner on specific traits played a role in attraction, the absolute difference score between participants' self-reported

actual self-characteristics and participants' ratings of their interaction partner's characteristics was calculated. The resulting difference scores were then correlated with the relationship effects (i.e. the unique liking between each couple) of men's attraction and of women's attraction.

RQ7. To test dyadic reciprocity, this study calculated correlations between the two (the male partner's and the female partner's) relationship effects of attraction per dyad, across all dyads. In other words, the dyadic reciprocity correlation captures the particular mutual liking between the two members of the couple.

RQ8. To test generalized reciprocity, a correlation between the actor effect (i.e. the average amount a participant desires partners) and the partner effect (i.e. the average amount a participant is desired by partners) was conducted. SRM calculates generalized reciprocity by correlating each person's actor effect with his or her own partner effect of attraction across all individuals in the group. In other words, this study correlated the amount a person likes others in general with how much s/he is liked by others in general. This was performed for men and women separately, as well as combined.

RQ9. This study measured real-life efficacy of the romantic attraction ratings using two different analytical approaches. First, to test how ratings of romantic attraction translated to participants' matching behavior, an independent samples t-test was conducted between participants' relationship effects and whether, on a post-event questionnaire, they indicated "yes" or "no" when asked if they would like to get to know their partner better. Second, one-month follow-up data was descriptively analyzed to determine if participants who "matched" on the post-event questionnaire interacted after the event.

CHAPTER FOUR: RESULTS

Descriptive Statistics

Mean demographic and key individual characteristic variables are presented in Table 2. Findings revealed no sex differences between men and women on any of the key variables. On the extroversion scale, men rated themselves as more extroverted than women; however, this mean difference did not reach significance.

Social Relationship Model Analyses

RQ1. What factor has the greatest impact on romantic attraction: the actor, the partner, or the dyadic relationship?

Using SRM analyses, the relative variance, free of errors, of the attraction scores was partitioned into three sources – actor, partner, and relationship variances. The relative variance for the actor, partner, and relationship effects is presented in Table 3 for men and women separately. Given that female participants were repeated across all three speed-dating groups, results were analyzed as one large group. The results demonstrate considerable gender differences between male and female participants. For men, the amount of variance due to the actor was 49%, the partner was 14%, and the relationship effect was 37%, indicating that the actor effect followed by the relationship effect accounted for the two greatest portions of the stable variance for men's attraction. For women, the amount of variance due to the actor was 9%, the partner was 38%, and the relationship effect was 53%, indicating that the relationship effect, and then the partner effect, respectively accounted for the two greatest proportions of the stable

variance for women's attraction. Overall, men indicated more attraction than women, with an average summed attraction score of 20.24 for men and 12.65 for women.

Correlations between Individual Characteristics and SRM Analyses

RQ2. What actor self-characteristics are associated with initial romantic attraction?

Correlations were computed between each of the 19 self-characteristics and the actor effects of attraction as seen in Table 4. Correlations were computed for men and women separately. Men exhibited two correlations reaching significance and two approaching significance. These correlations suggest that men indicated more attraction towards female participants if they themselves reported higher extroversion ($r = .48, p < .05$), had less fear of negative evaluation ($r = -.50, p < .05$), had lower dating anxiety ($r = -.44, p < .10$), and rated themselves as having a higher quality of life ($r = .42, p < .10$). Women exhibited only one correlation reaching significance and two approaching significance; however, due to the limited sample size of female participants, all correlations should be interpreted with extreme caution. These correlations suggest women who were more attractive ($r = .85, p < .05$), who reported more social group anxiety ($r = .76, p < .10$), and who rated themselves as having a higher quality of life ($r = .77, p < .10$), indicated more attraction towards male participants.

RQ3. What partner characteristics are associated with received romantic attraction?

Correlations were computed between each of the 19 partner characteristics and partner effects of attraction as seen in Table 5. As noted above, this study calculated correlations for men and women separately. Men exhibited no correlations reaching significance, indicating that there were no specific male partner characteristics that made female participants more likely to indicate attraction towards the male participants. Women exhibited two correlations reaching

significance and two approaching significance. These correlations suggest men are more attracted to women who were older ($r = .75, p < .10$), more physically attractive ($r = .90, p < .05$), less extroverted ($r = -.80, p < .10$), and more conscientious ($r = .98, p < .01$). Again, it is important to interpret such results with extreme caution due to the limited number of female participants.

Correlations between Stated Partner Preferences and SRM Analyses

RQ4. Are ideal partner preferences associated with initial romantic attraction?

A correlation was computed between the relationship effect of men and women's attraction (i.e., the unique liking between two participants) and the difference score between individuals' stated partner preferences and their ratings of partner characteristics as seen in Table 6. For both men ($r = -.33, p < .01$) and women ($r = -.38, p < .01$), there was a significant negative correlation between the difference score and the relationship effect, suggesting that when the difference between ideal partner preferences and participants' ratings of partner characteristics was greater, participants indicated less attraction towards their partner. In other words, the correlation suggests the lesser the degree to which partners matched participants' ideal preferences, the less participants liked the partners.

Correlations between Similarity and SRM Analyses

RQ5. Is partner similarity associated with initial romantic attraction?

Difference scores were computed between each couple across all 8 participant characteristic categories. Each separate difference score was correlated with the relationship

effects of both men's attraction and women's attraction. None of the 8 correlations reached significance, with the greatest magnitude of the correlation reaching only .15 as seen in Table 7.

RQ6. Is perceived partner similarity associated with initial romantic attraction?

Participants' perception of perceived similarity was calculated through two different analysis approaches. First, a general sense of perceived similarity was calculated by summing three items on the interaction record that measures perceived similarity. Correlations were computed between the general perceived similarity total and the relationship effects of both men's attraction and women's attraction. Both men ($r = .39, p < .01$) and women ($r = .41, p < .01$) exhibited significant correlations between participants' overall perceived similarity and the relationship effects of men's attraction and women's attraction as seen in Table 8. These correlations suggest that both men and women were more attracted to partners they perceived to be similar to themselves.

Second, trait-level perceived similarity was calculated by computing difference scores between each participant's self-characteristics and his/her rating of partner characteristics for each couple. Correlations were computed between the perceived similarity trait differences score and the relationship effects of both men's attraction and women's attraction as seen in Table 8. Men did not exhibit a significant correlation ($r = -.08, p > .05$) between the perceived similarity difference score and the relationship effect of attraction. Women, however, exhibited a significant correlation ($r = -.22, p < .05$) between the perceived similarity difference score and the relationship effect of attraction, suggesting that, for women, the greater the difference in self-characteristics between the couple, the less attraction women indicated towards their partner.

Correlations between Reciprocity and SRM Analyses

RQ7. Is dyadic reciprocity associated with initial romantic attraction?

Correlations were conducted between male participant's relationship effect and female participant's relationship effect across all couples in order to determine if initial attraction between men and women was correlated. There was a significant correlation ($r = .29, p < .01$) between the relationship effects of men's attraction and women's attraction, indicating that one partner was more likely to like another partner if that partner liked them back as seen in Table 9. This finding provides support for reciprocal liking principle within this population.

RQ8. Does generalized reciprocity impact partners' romantic attraction?

This study calculated correlations between each participant's actor effect and his/her own partner effect for both men and women separately and combined. By correlating each person's own actor effect and partner effect, it is possible to establish whether there exists a relationship between how much a person likes others in general and how much that person is liked by others in general. First, correlations were run for men and women separately. Neither men ($r = -.28, p > .05$) nor women ($r = .70, p > .05$), exhibited significant correlations between the actor effects and partner effects. A correlation was also run to determine whether generalized reciprocity was significant when the data was analyzed with men and women together. There was a significant negative correlation between participants' actor effects and partner effects ($r = -.42, p < .05$) when all data was included in the analysis as seen in Table 10. This finding suggests that when an individual indicates more attraction towards partners generally, partners report liking that participant less. It is likely that there was not enough power to detect a relationship when men and women were analyzed separately.

Follow-up Analyses

RQ9: Does romantic attraction in a speed-dating context translate into real-life interactions between participants?

Independent samples t-tests were conducted between relationship effects of men's attraction and women's attraction and whether, on a post event questionnaire, they indicated "yes" or "no" to wanting to get to know their partner better as seen in Table 11. The t-tests were run for men and women separately. Men exhibited a significant difference between the relationship effect of men's attraction for partners who the male participants' said, "yes" to versus "no" to, regarding whether they would like to get to know that partner better, $t(92) = 3.79$, $p < .01$. Women also exhibited a significant difference between the relationship effect of women's attraction for partners who the female participants' said, "yes" to versus "no" to, regarding whether they would like to get to know that partner better, $t(92) = 4.07$, $p < .01$. The significant differences for both men and women provide support for the efficacy of the attraction ratings, suggesting that men and women who rated their partners as more attractive were more likely to indicate they would like to get to know their partners better in a real-life context. It should be noted that these analyses assume each couple's relationship was unique, even though the female participants were repeated across the three speed-dating events. Results from these analyses should be interpreted with caution.

Given there were only fourteen matches from the three different speed-dating events, the one-month follow-up data was analyzed descriptively in order to illustrate the interactions between matches after the speed-dating events. Twenty-four matched participants completed the follow-up items (86% of eligible "matches"). Twelve men (67%) and five (83%) women were matched from the speed-dating events. For the men with at least one match, ten received exactly

one match (83%) and two received two matches (17%). For the women who were matched, one received one match (20%), one received two matches (20%), one received three matches (20%), and two received four matches (40%).

When the participants were asked to describe the current status of the relationship with their matches, one male participant (10%) and two female participants (14%) said their matches were a friend with romantic potential, one male participant (10%) said his match was an acquaintance with romantic potential, two male participants (20%) and five female participants (36%) said their matches were a friend without romantic potential, two male participants (20%) and three female participants (21%) said their matches were an acquaintance without romantic potential, and four male participants (40%) and four female participants (29%) said they had no relationship with their matches. Nine male “matches” (90%) and twelve female “matches” (86%) said they had corresponded with their matches through electronic means. Participants reported engaging in an array of electronic communications, from emailing, to texting, to Facebook messaging, to talking on the phone. The minimum amount of electronic communication reported was one email and the maximum reported was approximately ten electronic communications through a variety of means. Three men reported in-person interactions (30%) and four women reported in-person interactions (36%), with one woman reporting in-person interactions with two different matches. The in-person interactions ranged from a couple hanging out on one occasion in which they went to lunch and a movie, to a couple who hung out three times and reported a range of activities. No male or female participants reported engaging in romantic physical contact. For this study, physical contact was defined as any physical behavior from holding hands to kissing to more intimate forms of romantic physical contact.

Clinical Observations

Researchers observed participants' behavior during each of the speed-dating events. Clinical observations suggested that participants engaged in certain notable patterns of behavior across events. Notable observations included participants benefiting from structured dating "on" and "off" times, to surprising snacking and bathroom behavior, to appropriate but formal back-and-forth conversations during the dates. Firstly, participants' behavior suggested that clear "rules" regarding dating "on" and "off" times inherent within a speed-dating paradigm allowed for participants to appropriately engaged during the structured date times, while also having opportunities to decompress and not socialize between dates. Secondly, participants were observed to engage in snacking and bathroom behavior that seemed to go against social dating norms, such as eating during dates and using the restroom throughout the event even though it delayed all participants from proceeding to their next date. Lastly, participants appeared to engage in appropriate back-and-forth conversations without needing to rely on prompts (e.g., example questions provided at each date station); however, the content of participants' conversations felt formal to an outside observer. Participants discussed topics such as employment, education, family life, and career goals, instead of engaging in casual conversation topics, as one might have expected.

CHAPTER FIVE: DISCUSSION

This study aimed to understand the factors that lead to initial romantic attraction between men and women with ASD, aged 18-30 years. Utilizing a speed-dating paradigm, the study sought to examine the factors associated with initial individual, partner, and dyadic attraction within the specific population. Findings suggest that romantic attraction within a speed-dating context was a function of the actor, the partner, and the relationship; however, the importance of each factor differed for men and women. For men, the actor effect proved the greatest factor followed by the unique relationship between the couple. For women, the greatest factor influencing initial attraction was the unique relationship between the couple, followed by the partner. Put more simply, the greatest influence on male initial attraction was the man himself, with some men indicating more attraction towards all of the female participants while others indicated less attraction across the board. This pattern of male initial attraction differs from findings of previous studies with typically developing adults (Asendorpf et al., 2011; Lou & Zhang, 2009), in which the unique relationship played the most significant role in initial romantic attraction for both men and women. Further, the male participants indicated substantially more attraction than the female participants, suggesting that the male participants were less selective than female participants when indicating attraction. However, it should be noted that the male participants had fewer date partner options than the women in this study. In contrast to this study's male participants, the greatest factor in initial romantic attraction for women proved to be the unique dynamic between participants, consistent with previous findings from speed-dating studies of typically developing adults (Asendorpf et al., 2011; Lou & Zhang,

2009). Differences between male and female findings indicate that within this population the processes of initial romantic attraction may differ by gender.

In the broader context of the specific effects noted above, this study sought to better understand the dynamics of initial romantic attraction by performing analysis of certain aspects of the actor, partner, and relationship effects. In short, individuals' self-characteristics (i.e., actor effect), partner characteristics, and the unique relationship between each couple were examined to determine which factors impacted initial romantic attraction. Initially, individual characteristics were analyzed to understand what factors made a participant more likely to indicate attraction towards any partner. Findings suggest that men self-identifying as extroverted, as having a relatively higher quality of life, as less fearful of negative evaluation and as having relatively lower dating anxiety were more likely to indicate initial romantic attraction towards any partner. It makes theoretical sense that a man identifying as extroverted and happy with less fear of rejection might feel more confident and comfortable expressing romantic interest towards partners. These findings do not support the a priori hypothesis that men rated as less attractive would indicate more attraction towards female partners. For women, findings suggest women who were more attractive, had a better quality of life, and experienced more group anxiety were more likely to indicate attraction. These findings do not lend themselves as readily to anecdotal interpretation, given that one might assume a more physically attractive individual more selective when indicating attraction. Further, this finding runs counter to the initial hypothesis that women rated as less attractive would indicate more attraction. Additionally, it is difficult to understand why someone who experiences more group anxiety would indicate more initial attraction. Given the small sample size of the female participants, it is likely that these results might not be representative.

Partner characteristics were analyzed to understand what factors made a partner attractive. For men, no specific characteristics made a partner more attractive. Conversely, women received higher attraction ratings if they were more physically attractive, conscientious, older, and less extroverted. It should be noted that as with the self-characteristics, partner characteristics were contingent upon ratings of the six female participants, thus it is possible that specific individuals had a large impact on partner ratings. With that said, the partner characteristics that were associated with initial attraction make theoretical sense, with conscientiousness and physical attractiveness having the strongest association with attraction. The strong association between physical attractiveness and attraction has been replicated across several speed-dating studies with typically developing adults (e.g., Eastwick & Finkel, 2008; Lou & Zhang, 2009); however, in all such studies, partner physical attractiveness was strongly related to initial attraction for both men and women. It seems notable that physical attractiveness was not associated with ratings of romantic attraction for male partners in this study. Further, neither autism symptomatology nor neuroticism was associated with ratings of partner attraction for men or women, as was initially hypothesized. It is noteworthy that no partner characteristics were associated with initial romantic attraction for men.

To understand what factors contribute to the unique relationship between couples (i.e. the relationship effect) this study explored the ways ideal partner preferences, similarity, perceived similarity, and reciprocity impact the unique romantic attraction between couples (Eastwick et al., 2007; Eastwick et al., 2011; Lou & Zhang, 2009; Tidwell et al., 2012). Studies with typically developing adults found stated partner preferences failed to be predictive of romantic attraction in a speed-dating context (Eastwick & Finkel, 2008). Given that participants' stated mate preferences were not significantly related to their in vivo ratings of chemistry or liking, the

findings from the Eastwick and Finkel (2008) study suggest typically developing adults are not adept at predicting their in vivo attraction. Interestingly, findings from the current study found participants' a priori, stated ideal partner preferences were significantly related to the unique liking between participants for both men and women. For example, participants who stated that they highly valued intelligence were more likely to be attracted to partners who they rated as more intelligent. These findings suggest individuals with ASD may be more adept at predicting their initial romantic attraction than typically developing adults.

In order to better understand the current study's findings, it is crucial to examine theories explaining the discrepancy between stated and in vivo preferences with typically developing adults. Eastwick and Finkel (2008) suggested that one possible theoretical explanation for the differences might be accounted for by an empathy gap between these preferences (Loewenstein, 2005). In this context, the empathy gap theory is as follows: "if one's preferences are reported coolly and rationally without fully accounting for the affect that often characterizes romantic process" (Eastwick & Finkel, 2008, p. 260). According to this theory, stated, ideal preferences are made based on logical and balanced views on ones' romantic attraction, whereas ratings of romantic attraction at the subsequent speed-dating event are likely influenced by the affect involved in romantic attraction, altering individuals' preferences. Based on this theory, Eastwick and Finkel (2008) hypothesize that stated preferences played a greater role in attraction ratings when individuals were not influenced by the affect of romantic attraction. Consequently, empathy gap theory is one possible explanation for the differences found in stated and in vivo preferences between individuals with ASD and typically developing adults. The affect sharing process present in romantic attraction may influence adults with ASD less than typically

developing adults. As such, adults with ASD would be better equipped to select partners matching their stated preferences.

However, the empathy gap theory remains only one of many possible explanations for the differences exhibited between adults with ASD and typically developing adults regarding stated versus in vivo preferences in a speed-dating context. A second possible explanation is that adults with ASD are more adept at accessing their true priorities for a romantic partner. It seems plausible that adults with ASD might be less influenced by social and/or societal norms, freeing them to be more candid when indicating partner preferences and thus more accurate when meeting partners face-to-face. Future research should further explore the root of this phenomenon.

Similar to previous speed-dating studies, results from the current study found that perceived partner similarity was associated with initial romantic attraction while actual similarity was not. For many years, it was believed actual similarity (e.g., similarity-attraction effect) predicted initial romantic attraction; however, recent studies have found little to no relationship between actual similarity and attraction within a speed-dating context (Byrne, 1961; Lou & Zhang, 2009; Tidwell et al., 2012). Instead, studies have demonstrated that perceived similarity is significantly related to initial romantic attraction (Tidwell et al., 2012). Findings from this study indicate that, like typically developing adults, perceived, not actual, similarity is associated with initial romantic attraction for adults with ASD. Results from actual similarity analyses demonstrated there existed virtually no relationship between actual similarity and attraction. Instead, it was perceived similarity that was related to initial romantic attraction. Specifically, general perceived similarity associated most strongly with romantic attraction for both men and women. The robust relationship between general perceived similarity and romantic attraction for

both typically developing adults and adults with ASD suggest individuals may not draw a clear distinction between these constructs (Tidwell et al., 2012). Based on previous speed-dating findings, it appears logical that general perceived similarity was strongly associated with romantic attraction for adults with ASD; nevertheless, findings from this study suggest the association between perceived similarity and attraction is consistent within this population (Tidwell et al., 2012). Given this study's correlational nature, it is equally possible that increased romantic liking influences individuals sense of general perceived similarity.

Perceived similarity, based on specific personality characteristics (e.g., intelligence, physical attractiveness), modeled significant association to romantic attraction for women only. Findings from previous studies have found trait-based ratings of perceived similarity to be associated to initial attraction for both men and women, albeit not as robustly as general perceived similarity (Tidwell et al., 2012). Consistent with previous findings, the association between trait-level perceived similarity and women's ratings of romantic attraction were not as strong as the relationship between attraction and general perceived similarity. Unlike the female participants, there existed no relationship between trait-level perceived similarity and initial romantic attraction for male participants. In contrast to general perceived similarity, trait-level perceived similarity was measured indirectly by calculating difference scores between individual's ratings of self-characteristics and partner-characteristics. Thus, it seems likely that male participants did not consciously consider their partners level of perceived similarity when making ratings, as with the general perceived similarity questions. Further, given that general perceived similarity was possibly a proxy for initial romantic attraction, it appears unsurprising that for male participants, general perceived similarity was significantly related to romantic

attraction while trait-level perceived similarity was not – perhaps as a function of tapping different cognitive and emotional processes.

Reciprocity is another frequently examined aspect of initial romantic attraction. Previous speed-dating studies with typically developing adults have shown mixed results on the impact of both generalized and dyadic reciprocity in a speed-dating context (Eastwick et al., 2007; Lou & Zhang, 2009). Eastwick and colleagues (2007) results indicate a clear pattern of effect for both generalized and dyadic reciprocity in initial romantic attraction. Such results indicate that in a speed-dating context generalized reciprocity – the tendency for people who like others generally to be liked themselves exhibits negative correlation, while dyadic reciprocity – the unique liking shared between a couple exhibits positive correlation (Eastwick et al., 2007). These findings suggest that even within brief, romantic interactions individuals seem capable of distinguishing between either type of reciprocity. Eastwick and colleagues (2007) found that perceived unselectivity partially mediated the generalized reciprocity correlation, suggesting that, “participants who desired everyone somehow broadcasted their unselectivity on their speed-dates” (p. 318). Perceived unselectivity is one explanation for the negative relationship between generalized reciprocity and romantic attraction, indicating participants were impressively skilled at distinguishing subtleties in romantic attraction. Like Eastwick and colleagues, Asendorpf and colleagues (2011) found a significant relationship between dyadic reciprocity and attraction. Lou and Zhang (2009) findings trended in the same direction as Eastwick and colleagues (2007); however, neither dyadic nor generalized reciprocity correlations reached significance. Interestingly, results from this study support findings from Eastwick and colleagues (2007) and Asendorpf and colleagues (2011).

This study's findings revealed a negative correlation between generalized reciprocity and initial romantic attraction and a positive correlation between dyadic reciprocity and attraction. These results merit particular interest because they suggest that adults with ASD, like their typically developing peers, are capable of detecting subtle cues distinguishing generalized attraction towards all partners from unique connection between a couple within a brief romantic interaction. Given ASD's hallmark social reciprocity and communication impairments, it is encouraging to find participants were able to detect such subtle nuances in behavior. However, possible alternative explanations are also feasible. Clinical observations from the speed-dating events suggest another possible explanation for the generalized reciprocity finding. The researchers facilitating the speed-dating events noticed a trend within participants. Participants presenting with more social and adaptive challenges appeared to indicate romantic desire less selectively. If this was the case, one could speculate these same individuals may be less desirable partners, above and beyond their degree of selectivity. Based on the current study's findings, it is not possible to determine the mechanism underlying generalized reciprocity correlation. Further research should be undertaken to clarify the impact of romantic reciprocity within this population.

Findings from post-match questionnaire analyses, which examined whether or not attraction ratings related to participants partner choices (i.e. those about whom they wished to know more/matches), provide support for the initial romantic attraction construct. Results indicated a significant relationship between partners that participants rated as attractive and those they indicated a desire to see again after interacting with all potential participants. This finding anchors the abstract initial attraction ratings to authentic participant behavior. Participants

matched from post-match questionnaire responses had the opportunity to contact each other beyond the speed-dating context.

Follow-up results provided descriptive information surrounding the behavior and interactions of participants matched after the speed-dating events. Across the three speed-dating events, there were fourteen matches – with several female participants receiving two or more matches. Post-match behavior varied tremendously across matches. Almost all matches corresponded with one another after the speed-dating events through electronic modes of communication. The rate of contact between matches in this study is higher than that reported in a previous study with typically developing adults. The aforementioned study found approximately two-thirds of matches engaged in any contact at a 6-week follow-up (Asendorpf et al., 2011). The high degree of electronic communication between participants in this study is encouraging. The high rate of communication implies participants responded earnestly when expressing interest in getting to know their matches on a more intimate basis. Further, such communication indicates participants broadly understood how to initiate communication with matches. Clinical experiences with adults with ASD suggest this population has a strong desire and motivation for romantic connection, potentially accounting for the high rates of electronic communication.

Unsurprisingly, fewer participants interacted with their matches in-person; nevertheless, approximately one-third of matches went on in-person dates. The rate of in-person contact is comparable to that found with typical populations at a 6-week follow up (Asendorpf et al., 2011). Participants' in-person interactions ranged from one meeting to several dates. Given that five in-person interactions were reported at follow-up, it is noteworthy that only two male and two female participants indicated having romantic potential with their matches. This discrepancy

between participants' behavior and feelings regarding their relationships with matches may suggest that after interacting with matches in-person, relationship interest faltered. Finally, no participants reported engaging in physical contact. The lack of physical contact may not be surprising given the relatively short timeline upon which this study collected follow-up data (one month); however, in view of the fact that three couples went on 2 or more dates, it appears significant that no physical contact – including hand holding and/or kissing – had taken place between any of the couples. This contrasts sharply to findings by Asendorpf and colleagues (2011), which indicate that at a 6-week follow up approximately 3% of matches had engaged in sexual intercourse. The study by Asendorpf and colleagues (2011) had 382 participants, with 232 matches, thus the findings include far more participant variability; however, the slow progress of physical contact between matches in the current study merits further examination in future studies of adults with ASD.

Clinical Observations

The study's findings provide insight into the processes of initial romantic attraction among adults with ASD; however, further understanding of these processes can be informed by researchers clinical insights from the events. Across the three events, researchers observed several notable phenomena. These phenomena interested the researchers and appeared to play important roles at the events.

Speed-Dating Event Observations. The structure of the speed-dating events appeared to promote appropriate social interaction between participants during the designated “date” times. By design, speed-dating events specify times when it is appropriate to speak and get to know potential date partners (i.e., 5-minute ‘mini’ dates) and times when it is not necessary to

communicate with partners (i.e., time between dates). Having socializing “on” times and socializing “off” times seemed to benefit participants. The structured nature of speed-dating events provided participants the opportunity to take breaks from engaging socially with other participants. Participants’ behavior during these “off” times varied dramatically, with some participants choosing to converse with other participants or researchers during these periods, while other participants read books, checked their phones, or ate snacks without socializing. However, it was notable that many participants did not make conversation with others during these “off” times. Instead, participants followed the “rules” of the speed-dating event in which getting to know date partners occurred primarily during the designated date times. A clear example of this occurred when one female participant told a male participant who was speaking to her during an “off” time that she wasn’t interested in talking at that moment, but that he would have an opportunity to get to know her during their official date time. The opportunity to decompress or take a break between dates seemed to allow participants to be fully present during each of the dates. Participants appeared to easily engage in back-and-forth conversation during the designated date time.

Observations regarding participants’ snacking and bathroom behavior was also notable. Snacks and refreshments were provided at each of the speed-dating events, including bags of individual sized chips, granola bars, and individual sized juices and waters. In general, participants ate numerous individual sized snacks and refreshments, with many participants eating five or more snacks during the two-hour event. The amount of food consumed seemed noteworthy for two reasons. First, participants were at a dating event and yet seemed unfazed eating in front of potential dates. Further, participants chose to eat snacks not only during the “off” times but also during the dates. Participants did not seem concerned about appearing

unattractive or rude by eating during the dates, as one might expect. One participant even chose to eat her entire lunch (pizza) during her dates, with no apparent concern about how this might impact her perceived attractiveness. Second, participants did not seem concerned about taking more than their share of food, which might have prevented other participants the opportunity to eat a snack. With regards to participants' bathroom behavior, after each date, at least one participant left to use the restroom, which substantially delayed the progression of the event. Between each date, participants would have to wait five to fifteen minutes for other participants to return from the bathroom. The continual bathroom breaks were so intrusive at the 1st event that the structure of the 2nd and 3rd events were changed to include designated bathroom breaks. Taken together, participants' snacking and bathroom behavior seemed to reflect a lack of insight into appropriate social norms regarding eating and restroom behavior at social events that might negatively impact participants' dating behavior in other contexts.

Couple Interaction Observations. Conversations between each of the date partners varied widely; however, certain aspects of the conversations appeared widespread and thus notable. First, on the whole, conversations between date partners seemed to go remarkably well. Given that social communication deficits are a core component of an ASD diagnosis, before the events researchers were unsure as to whether participants would be able to maintain appropriate conversation with strangers during the five-minute dates. Due to these concerns, example first date questions were placed at every date station to assist participants if conversations halted. However, across the board, participants very rarely utilized these question prompts (only two participants were seen using the example questions). Instead, participants were able to maintain back-and-forth conversations with each of their date partners, with both participants taking turns sharing about themselves and learning about their date partners.

Second, although the conversations appeared to flow naturally, the content of the dates appeared formal. Clinical observations of the date content suggest that participants' discussed topics that they prioritized in a long-term partner (i.e., topics related to their ideal partner preferences and long-term partner goals) such as education level, career, family lives, living situations, and life goals, in order to determine their attraction and compatibility with the partners. Speculatively, this might be one possible explanation for why participants' ideal partner preferences were correlated with their in-vivo rating. However, to an outside observer these conversations felt somewhat stiff and scripted, with a few participants asking each of their date partners the same questions in the same order. However, participants did not appear to perceive these conversations to be inappropriately formal, given that they indicated attraction towards partners with whom they had these formal exchanges.

Limitations

In light of these findings and their potential implications, it is important to discuss limitations of this study. One limitation was the study's small sample size. Speed-dating studies with typically developing adults have generally made use of samples of over 100 participants (Asendorpf et al., 2011; Eastwick & Finkel, 2008; Lou & Zhang, 2009; Tidwell et al., 2012). Due to challenges with recruitment, small sample sizes remain common in autism research. A larger sample size would have increased the study's power and participant variability. The small sample size limits the validity of certain results and the generalizability of the study results overall.

A second limitation was the small number of female participants. The gender disparity in individuals diagnosed with ASD likely made it more difficult to identify and recruit female

participants (Blumberg et al., 2013). Given such difficulties, female participants were repeated across three speed-dating events. The repetition of female participants may have influenced their ratings and behavior throughout. Furthermore, the limited number of female participants may have skewed correlation results given that ratings supplied by or with regard to a single participant had a large impact on overall results.

Additionally, all participants self-identified as having a formal diagnosis of Autism, Asperger's syndrome, or PDD-NOS, but such diagnoses were not confirmed by this study. In the future, efforts should be made to confirm participants' diagnostic status. Further, the study did not collect information regarding participants' cognitive and adaptive functioning. Given the heterogeneity present in this population in terms of functioning levels, it would have been informative to know participants' cognitive and adaptive profiles.

Moreover, the use of the speed-dating design limited participation to adults with ASD who were interested in dating people of the opposite gender. The exclusion of gay, lesbian, or otherwise sexually identified individuals limits the generalizability of the results. Finally, this study only included participants diagnosed on the autism spectrum. There is no evidence suggesting adults with ASD should or should not date other individuals with ASD. The main aims of this study focused on the attraction among adults with ASD specifically, allowing for both individual and partner characteristic of individuals with ASD to be analyzed. For future research, it may be advantageous to conduct speed-dating events with mixed populations including adults with ASD and typically developing adults. Such a structure would provide further evidence regarding attraction within this population. It is possible that romantic attraction manifests differently between adults with ASD and typically developing adults. Furthermore, it

remains conceivable that certain individuals with ASD may have been less inclined to participate in the study due to the fact that participation was limited to only adults with ASD.

Future Directions and Implications

This study contributes to the limited body of literature on romantic attraction and relationships in adults with ASD. To the author's knowledge, this was the first study to utilize a speed-dating design to examine factors associated with initial romantic attraction and date initiation within this population. This study established that participation in speed-dating events was both feasible and accessible for adults with ASD. Study participants successfully interacted and communicated with their partners to determine initial romantic attraction within the speed-dating framework. Further, participants reported they enjoyed the events, requested to attend other speed-dating events, and female participants selected to attend all three events.

Additionally, for many participants, the opportunity to attend a speed-dating event was their first exposure to a dating experience. The speed-dating events allowed them to practice dating skills while having the opportunity to meet potential partners. The events' success demonstrates that adults with ASD are capable of navigating certain dating contexts – such as structured speed-dating events – but often lack access to appropriate dating opportunities. Future research and clinical practice might consider utilizing speed-dating events as a component of dating interventions for adults with ASD.

Currently, there is a paucity of research examining how romance and attraction unfold within this population (Koegel, Detar, Fox, & Koegel, 2014). The little research focusing on romantic relationships of adults with ASD has often relied on caregiver-report (e.g., Stokes et al., 2007). This study lays the groundwork for future studies to investigate how romance, attraction,

and date initiation develop and progress for adults with ASD. Prudence dictates the need for far more research into the processes of romantic attraction and relationship initiation within this population.

The current study sheds light on the manner in which processes of initial romantic attraction are similar and different from typically developing adults. This study suggests that similar to typical populations, initial romantic attraction for adults with ASD is positively associated with female attractiveness, perceived similarity, and dyadic reciprocity, negatively associated with generalized reciprocity, and not associated with actual similarity. Further, similar to speed-dating studies with typical adults, participants matched from speed-dating events led to electronic communication between couples, with dates for approximately a third of matches. Despite this similarity, the current study also suggests differences in initial romantic attraction for adults with ASD, including differences in relationship variance accounted for by the actor effect compared to the relationship effect for male participants, differences in actor and partner characteristics that lead to actor and partner attraction, and most strikingly, differences in the association between stated, ideal partner preferences and initial romantic attraction. Future research, with larger sample sizes and more female participants, is needed to further understand the unique processes that lead to initial romantic attraction within this population.

Understanding the initial processes of romantic attraction is essential in order to aid and support adults with ASD in the processes of dating and romantic relationship initiation. The limited research in the area of romantic relationships for adults with ASD has shown that many individuals with ASD desire romantic relationships, but few are in relationships (Koegel et al., 2014). The current study included a one-month follow-up in order to examine the ways in which participants matched at the speed-dating events interacted with one another on their own time.

Future research should extend the follow-up time period in order to longitudinally follow speed-dating matches. Such a timeline extension would allow researchers to clarify factors leading to electronic communication, in-person dates, and hopefully, romantic relationship formation. Longitudinal data on the processes of romantic relationship formation is essential to truly gain insight into successful strategies and approaches that lead to romantic relationships within this population.

Crucially, significant thought and resources have recently focused on the longest developmental period of individuals with ASD life – adulthood. Hopefully, the increased focus and interest on adults with ASD will bring added attention to the area of dating and romantic relationship formation for this population. For many adults the greatest provider of social, emotional, and instrumental support comes from romantic partners. Given the social challenges faced by many adults with ASD, combined with higher rates of mental health disorders, it seems likely that a positive, healthy, and happy romantic relationship could have a tremendous influence quality of life (Stewart, Barnard, Pearson, Hasan, & O'Brien, 2006). However, research has also shown that many adults with ASD struggle navigating the processes of romantic attraction and relationship initiation and maintenance without support and guidance (Stokes et al., 2007). Researchers have spent significant time, energy, and resources to understand friendships of children with ASD in order to develop interventions aimed at helping such children navigate complex relationships – the same research emphasis is needed to help individuals with ASD to develop romantic relationships in adulthood (e.g., Kasari, Rotheram-Fuller, Locke, & Gulsrud, 2012). This study comprises a drop in the bucket of research needed to understand attraction, dating, and romantic relationships within this population.

Table 1.

Participant Demographics

Measure	Number of Participants (%)
Total N	24 (100%)
Gender	
Male	18 (75%)
Female	6 (25%)
Race	
White	9 (37%)
Latino/Hispanic	4 (17%)
African American	3 (13%)
Asian	5 (21%)
Middle Eastern	2 (8%)
Others	1 (4%)
Diagnosis	
Autism	11 (46%)
Asperger's disorder	8 (33%)
PDD-NOS	2 (18%)
Autism Spectrum Disorder	3 (13%)
Employment	
Yes	13 (54%)
No	11 (46%)

Table 2.

Male and Female Participant Means and SDs on Key Variables

Measure	Male	Female
Demographic variables		
Age	24.56 (2.60)	24.83 (1.84)
Physical attractiveness	5.09 (1.01)	5.2 (1.28)
Big Five Personality		
Extroversion	3.14 (.73)	2.50 (.59)+
Agreeableness	3.64 (.61)	3.33 (.69)
Conscientiousness	3.50 (.50)	3.20 (1.03)
Neuroticism	3.08 (.97)	3.58 (.81)
Openness	3.45 (.43)	3.15 (.48)
Dating Anxiety		
Fear of negative evaluation	27.56 (10.32)	30.50 (10.95)
Social distress – dating	17.61 (6.60)	20.67 (7.69)
Social distress – group	9.39 (3.61)	10.17 (3.19)
Dating anxiety total	54.55 (18.69)	61.33 (19.43)
Autism Symptomatology		
Social awareness	9.27 (3.08)	8.50 (1.52)
Social cognition	13.28 (6.16)	17.67 (4.08)
Social communication	23.11 (12.16)	25.83 (8.18)
Social motivation	12.11 (5.74)	15.67 (6.86)
Restricted and repetitive behaviors	13.00 (7.29)	14.33 (4.23)

Social communication total	57.78 (24.09)	67.67 (16.19)
Social responsiveness total	70.78 (30.76)	82.00 (19.79)
Quality of Life		
Quality of Life total	22.56 (6.84)	23.17 (5.64)

*Note. N = 24. +p<.10, *p<.05, **p<.01, two tailed.*

Table 3.

Relative Variance Partitioning for Attraction

Male Attraction			Female Attraction		
Actor	Partner	Relationship	Actor	Partner	Relationship
.49	.14	.37	.09	.38	.53

Table 4.

Correlations between Self-Characteristics and Attraction

Self Characteristics	Attraction	
	Male	Female
Demographic variables		
Age	.02	.50
Physical attractiveness	.28	.85*
Big Five Personality		
Extroversion	.48*	-.27
Agreeableness	-.06	.53
Conscientiousness	.08	.67
Neuroticism	.20	-.73
Openness	.29	-.39
Dating Anxiety		
Fear of negative evaluation	-.50*	-.14
Social distress – dating	-.37	-.14
Social distress – group	-.18	.76+
Dating anxiety total	-.44+	-.01
Autism Symptomatology		
Social awareness	-.20	.12
Social cognition	.35	.30
Social communication	.05	.42

Social motivation	-.27	-.42
Restricted and repetitive behaviors	.09	.37
Social communication total	.03	.12
Social responsiveness total	.04	.19
<hr/>		
Quality of Life		
Quality of Life total	.42+	.77+

+ $p < .10$, * $p < .05$, ** $p < .01$, two tailed.

Table 5.

Correlations between Partner-Characteristics and Attraction

Partner Characteristics	Attraction	
	Male	Female
Demographic variables		
Age	.05	.75+
Physical attractiveness	.35	.90*
Big Five Personality		
Extroversion	.07	-.80+
Agreeableness	.14	-.01
Conscientiousness	.12	.98**
Neuroticism	-.26	-.46
Openness	.06	-.17
Dating Anxiety		
Fear of negative evaluation	.16	-.27
Social distress – dating	.24	-.48
Social distress – group	.21	.41
Dating anxiety total	.22	-.28
Autism Symptomatology		
Social awareness	-.35	-.00
Social cognition	-.27	.46
Social communication	-.29	.73

Social motivation	-.17	.17
Restricted and repetitive behaviors	-.32	.58
Social communication total	-.30	.55
Social responsiveness total	-.31	.58
<hr/>		
Quality of Life		
Quality of Life total	.07	.26

+ $p < .10$, * $p < .05$, ** $p < .01$, two tailed.

Table 6.

Correlation between Ideal Partner Preferences and Attraction

Difference Score	Attraction	
	Male	Female
Ideal Partner Preferences	-.33**	-.38**

+ $p < .10$, * $p < .05$, ** $p < .01$, two tailed.

Table 7.

Correlations between Partner Similarity and Attraction

Difference Scores	Attraction	
	Male	Female
Demographic variables		
Age	-.04	.06
Physical Attractiveness	.02	-.10
Big Five Personality		
Dating Anxiety	.07	.01
Autism Symptomatology	-.03	.13
Ideal Partner Preferences	-.15	-.04
Self-Characteristics		
Quality of Life	.06	.11

+ $p < .10$, * $p < .05$, ** $p < .01$, two tailed.

Table 8.

Correlation between Perceived Partner Similarity and Attraction

Perceived Partner Similarity	Attraction	
	Male	Female
General perceived similarity	.39**	.41**
Trait-level perceived similarity	-.08	-.22*

+ $p < .10$, * $p < .05$, ** $p < .01$, two tailed.

Table 9.

Correlation between Male and Female Relationship Effects

Dyadic Reciprocity	Correlation
Male and Female Relationship Effects	.29**

+ $p < .10$, * $p < .05$, ** $p < .01$, two tailed.

Table 10.

Correlation between Actor and Partner Effects

Generalized Reciprocity	Correlation		
	Male	Female	Total (N = 24)
Actor and Partner Effects	-.28	.70	-.42*

+ $p < .10$, * $p < .05$, ** $p < .01$, two tailed.

Table 11.

Mean Comparison between Relationship Effects and “Matches”

Independent Samples T-test

	Male	Female
Relationship Effect - Matches	3.79**	4.07**

+ $p < .10$, * $p < .05$, ** $p < .01$, two tailed.

Table 12.

Follow-up Frequencies

Relationship status	Frequencies	
	Male (%)	Female (%)
Matched		
Yes	12 (67%)	5 (83%)
No	6 (33%)	1 (17%)
Number of Matches		
1 Match	10 (83%)	1 (20%)
2 Matches	2 (17%)	1 (20%)
3 Matches	0 (0%)	1 (20%)
4 Matches	0 (0%)	2 (40%)
What is the current status of your relationship with this person?		
Friend with romantic potential	1 (10%)	2 (14%)
Acquaintance with romantic potential	1 (10%)	0 (0%)
Friend without romantic potential	2 (20%)	5 (36%)
Acquaintance without romantic potential	2 (20%)	3 (21%)
No relationship at all	4 (40%)	4 (29%)
Have you corresponded with this individual through electronic means?		
Yes	9 (90%)	12 (86%)
No	1 (10%)	2 (14%)

Have you hung out with this individual in person?

Yes	3 (30%)	5 (36%)
No	7 (70%)	9 (64%)

Have you engaged in any romantic physical contact?

Yes	0 (0%)	0 (0%)
No	10 (100%)	14 (100%)

Note. 14 Matches total (14 Female responses, 10 Male responses).

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