

Autism Spectrum Disorder and Harassment: An Application of Attribution Theory

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Abstract: The social and communication impairments among those with autism spectrum disorder (ASD) may result in some unknowingly harassing someone while pursuing a romantic interest. Weiner's (1974) Attribution Theory suggests that when people attribute negative behaviors to a condition, they perceive less controllability, and evoke fewer negative emotions and punishments. The authors applied Attribution Theory using a sample of 545 undergraduates who received one of three vignettes depicting a male harassing a female romantic interest (no mention of ASD, mention of ASD, mention of ASD and difficulty with social relationships and communication). Those who received the vignettes that mentioned the perpetrator had ASD perceived the behavior as less controllable and fewer supported punishment. The results demonstrate support for disclosing one's ASD diagnosis and communicating any social or communication difficulties to others in the event there are miscommunications that could lead to punitive consequences.

Keywords: Autism Spectrum Disorder, Attribution Theory, Harassment, Stalking.

INTRODUCTION

Autism Spectrum Disorder (ASD) is a complex neurological disorder characterized in part, by limited verbal and non-verbal communication and social interaction. Some characteristics of ASD listed in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) published by the American Psychiatric Association (APA) include a lack of, or inappropriate eye contact, limited or narrow interests, and overly dependent on routines. Individuals diagnosed with ASD have varying degrees of social or communication impairments. The severity of one's ASD diagnosis is determined by one of three levels of support (requires support, requires substantial support, requires very substantial support), in two domains (social communication and restricted/repetitive behaviors) (American Psychiatric Association, APA, 2013). Although it is not unusual for those with ASD to exhibit challenging behaviors (Tantam, 2003), criminal behavior is rare (Ghaziuddin, Tsai, and Ghaziuddin 1991; Kohn, Fahum, Ratzoni, and Apter 1998; Murrie, Warren, Kristiansson, and Dietz 2002; Mouridsen 2012; Scragg and Shah 1994; Wing 1997; Woodbury-Smith, Clare, Holland, and Kearns 2006).

The social and communication impairments and other characteristics of ASD may lead to miscommunications while pursuing romantic interests, which may result in accusations of harassment or stalking (Archer and Hurley 2013; Barry-Walsh and

Mullen 2004; Browning and Caulfield 2011). Only one empirical study to date has examined this phenomenon (Stokes, Newton, and Kaur 2007), while Sperry and Stokes (2017) referenced the major works of stalking as it relates to ASD. Understanding the characteristics of one's condition, and then attributing negative behaviors to their condition can avoid or reduce the severity of any social and legal consequences. However, failing to understand one's condition and instead, believing that one's behavior is under their control can increase the severity of the consequences. This concept is consistent with Attribution Theory (Heider 1958; Weiner 1974).

Currently, there is no known formal arrest record system that identifies ASD among arrestees and there is a lack of information about those with ASD involved in the criminal justice system (CJS) (Loynes 2001). Individuals with ASD who come into contact with the CJS are often misunderstood, mistreated, and sometimes receive harsher punishments than are warranted (Attwood, Henault, and Dubin 2014; Crane, Maras, Hawken, Mulcahy, and Memon 2016; Freckelton 2013; Haskins and Silva 2006; Mayes 2003; Mogavero 2016; North, Russell, and Gudjonsson 2008; Taylor, Mesibov, and Debbaudt 2009). To handle those who enter the CJS fairly and justly, it is imperative to understand any underlying causes that may be responsible for their behavior (Crane *et al.* 2016; Debbaudt 2004). For example, Crane *et al.* (2016) revealed that only 48% of police officers surveyed believed they were well equipped to work with individuals with ASD, while 29% believed they were poorly equipped to work with such individuals. The

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authors of the current study applied AT theory using a large sample of criminal justice (CJ) students, as this population will most likely work in some sector of CJS in the future. Given the wide range of discretion granted to CJ professionals, their perception (attribution) may influence the severity level of any legal outcomes. Therefore, the authors suggest it is important to measure the reactions, thoughts, and perceptions of behaviors of this specific student population prior to entering their careers.

The authors measured the subjects' reactions to a vignette that depicted a male with or without an ASD diagnosis engaging in harassment while pursuing a romantic interest. Some research indicates a higher prevalence of harassment or stalking behaviors in adults with ASD (see Stokes, Newton, and Kaur 2007) and some of the ASD characteristics could possibly account for these behaviors. Although malicious intent may be absent, society might react punitively, leading to involvement with the CJS. When authorities, judges, and prosecutors observe behaviors such as a lack of or inappropriate eye contact, a lack of emotional reciprocity, egocentricity, or other social impairments, which many be present in some individual with ASD, they may confuse them for anti-social behaviors, which may lead to the assumption that that one is guilty and remorseless (Debbaudt 2004). An ASD diagnosis does not necessarily exonerate someone from legal responsibility for criminal behavior but could be a mitigating factor when establishing intent (Mogavero 2016; Taylor *et al.* 2009).

LITERATURE REVIEW

Romantic Relationships

Dating and forming romantic relationships is important for the well being and social acceptance among those with ASD (Byers, Nichols, Voyer, and Reilly 2012). Interpersonal relationships among those with ASD have drawn much attention from researchers. Research has shown that individuals with ASD are having romantic relationships with others (Byers *et al.* 2012; Gilmour, Schalomon, and Smith 2012; Konstantareas and Lunsky 1997; Pearlman-avniion, Choen, and Eldan 2017; Strunz Schermuck, Ballerstein, Ahlers, Dziobek, *et al.* 2017), and at a similar rate of their neurotypical peers (Byers *et al.* 2012; Gilmour *et al.* 2012; Hellemans, Colson, Verbraeken, Vermeiren, and Deboutte 2007; Hellemans, Roeyers, Leplae, Dewaele, and Deboutte 2010; Stokes and Kaur 2005).

Although research revealed that many with ASD are in committed intimate relationships, research has noted problems and barriers some have encountered in their quests for intimacy. Mehzabin and Stokes (2011) revealed that some with ASD learned about dating and sex by "making mistakes" which suggests some are learning from personal experiences and perhaps engaging in inappropriate actions. Hurlbutt and Chalmers (2002) interviewed an adult male with ASD who stated that while pursuing romantic interests, he often "drove them away" by calling them too often, and unable to recognize whether they felt they were being harassed.

Persistent Courtship and Harassment

Research has demonstrated that those with ASD have engaged in or have been convicted of harassment or stalking (Dell'Osso, Luche, Cerlani, Bertelloni, Gesi, and Carmassi 2015; Haw, Radley, and Cooke 2013; Lindsay *et al.* 2014). Although individuals with ASD may have several reasons as to why they would harass or stalk someone, for example, fixation on routines (Barry-Walsh and Mullen 2004), obsessional interests (Haskins and Silva 2006; Murrie *et al.* 2002), or retribution (Haw *et al.* 2013). Barry-Walsh and Mullen (2004) also noted miscommunications while pursuing romantic interests in their case studies.

Stokes, Newton, and Kaur (2007) used parental reports of courting behaviors among adolescents and adults with and without ASD. They revealed that those with ASD engaged in behaviors that resembled harassment or stalking more often than neurotypicals, such as monitored the person of interest's activities, followed them, pursued them in a threatening manner, and made threats against them. The authors revealed that those with ASD continued to pursue a romantic interest longer than neurotypicals, either after receiving no response or a negative response from the person of interest. Such strategies to initiate interpersonal relationships demonstrate that some appear to have crossed the "blurred line" between customary courtship behavior and harassment due to communication misunderstandings (Stokes *et al.* 2007).

Some harassment behaviors while pursuing a romantic interest may be the result of miscommunications during courtship. One explanation is that communication during courtship, in general, tends not to be clear and direct, and often involves non-verbal cues or signals (Brak-Lamy 2015; Cohen

2016; Hall and Xing 2015; Fichten, Tagalakakis, Judd, Wright, and Amsel 2001; Folkes 1982; Kotlyar and Airely 2013; Moore 2002). In addition, many individuals do not express distain when refusing a courtship advance and prefer to be polite (Folkes 1982; Hall, Carter, Cody, and Albright 2010; Hall and Xing 2015; Tong and Walther 2010), further confusing courtship communication.

ASD Awareness and Stigma

ASD is a “non-obvious” condition and disclosing one’s diagnosis is a personal decision. Many may be reluctant to disclose their diagnosis to others for various reasons, including fear of stigma or discrimination (Anderson, Carter, and Stephenson 2018; Cai and Richdale 2016; Cox, Thompson, Anderson, Mintz, Locks, and Morgan *et al.* 2017; Davidson and Henderson 2010; Huws and Jones 2008; Moxon 2006; Ortega and Choudhury 2011; Portway and Johnson 2005; Shtayermman 2009). Campbell (2006) noted that the decision to disclose one’s ASD diagnosis has been debated for years, where opponents argued that disclosure might lead to stigma, whereas proponents argued that disclosure might lead to improved communication. Research has supported both arguments, for example, Payne and Wood (2015), Matthews, Ly, and Goldberg (2015), and Iobst, Nabors, Rosenzweig, Svirorakiat, Champlin, Campbell *et al.* (2009).

In addition, increased knowledge about ASD and exposure to those with ASD were positively associated with sympathy and helping attitudes and were negatively associated with anger and punitive responses (Payne and Wood 2015). Similarly, Campbell, Morton, Roulston, and Barger (2011), Campbell and Barger (2011), and Campbell, Ferguson, Herzinger, Jackson, and Marino (2004) revealed that increased autism awareness and knowledge improved perceptions of those with ASD. These results support the notion that knowledge about ASD can reduce stigma and negative attitudes towards individuals with ASD.

Media Portrayal of Autism

Recent research has noted concerns with the media portraying those with ASD in a negative light (Holton, Farrell, and Fudge 2014; Nordahl-Hansen, Øien, Fletcher-Watson 2018), sometimes with a misleading association between ASD and violence (Allely and Faccini 2017; Allely *et al.* 2017). Brewer, Zoanetti, and Young (2017) revealed that media exposure that linked ASD and crime promoted negative attitudes towards

individuals with ASD. Moreover, those with ASD expressed concern with these media images on public perception (Ortega and Choudhury 2011). Berryessa (2014) revealed from interviews with 21 judges, concerns about how the negative media coverage of those with ASD would not only adversely affect public perceptions, but also professionals in the CJS. Although the judges reported that their opinions were not affected, the stigma individuals with ASD may encounter if involved the CJS is concerning (Berryessa 2014). This is of particular importance because a direct association between ASD and violence and/or criminal behavior has been unsubstantiated, and research has found that criminal behavior among those with ASD is rare (Ghaziuddin, Tsai, and Ghaziuddin 1991; Kohn, Fahum, Ratzoni, and Apter 1998; Murrie, Warren, Kristiansson, and Dietz 2002; Mouridsen 2012; Scragg and Shah 1994; Wing 1997; Woodbury-Smith *et al.* 2006).

THEORETICAL FRAMEWORK

Attribution Theory

Attribution Theory (AT) explains how individuals interpret events and how this relates to their thinking and behavior. Heider (1958) was the first to propose a psychological theory of attribution, which assumes a three-stage process: 1) the person must perceive or observe the behavior, 2) the person must believe that the behavior was intentionally performed, and 3) the person must determine if they believe the person was forced to perform the behavior (the cause is attributed to the situation and not the person). Weiner and colleagues (e.g., Jones *et al.* 1972; Weiner 1974, 1980, 1986) later developed a theoretical framework that has become a major research paradigm in social psychology and AT has been empirically tested in many participants since (for example, Corrigan, Markowitz, Watson, Rowan, and Kubiak 2003; Ling, Mark, and Cheng 2010; Payne and Wood 2016). According to Weiner (1993), a person’s perception of responsibility for another’s behavior is fostered by the perceived causality and controllability (i.e., responsibility) for the behavior. The greater the perceived responsibility for a negative behavior, the less sympathy and more anger one will have towards the individual engaging in the behavior.

Application of AT in the Criminal Justice System

Browning and Caulfield (2011) reviewed research on ASD and criminality, which included studies using

samples from secure forensic settings, community samples, and retrospective studies, and concluded that offending behavior among those with ASD was often in the context of their ASD symptomology. Given that the condition of ASD may be inconspicuous, individuals may interpret inappropriate behaviors as defiance, rather than attributing the behavior to their condition (Ling *et al.* 2010), which evokes anger towards the individual. When others perceive the once threatening behavior as less threatening by attributing it the condition, they may become less angry and less inclined to demand punishment (Corrigan *et al.* 2003; Payne and Wood 2016; Willner and Smith 2008).

Offenses such as harassment and stalking create fear or anger, where victims (and society) tend to demand some sort of punishment (Taylor *et al.* 2009). If charges are brought against the individual, the defense attorney must establish if their ASD is a mitigating factor when establishing intent (Debbaudt 2002). Applying AT or explaining one's behavior in terms of a disorder typically assigns less culpability and decreases one's criminal responsibility for their behavior (Corrigan *et al.* 2003; Freckelton and List 2009). Therefore, having awareness of ASD, possessing accurate knowledge of ASD (opposed to negative stereotypes), and applying AT to others' behavior may lead to more positive outcomes for those with ASD who may be accused of harassment while pursuing a romantic interest.

CURRENT STUDY

Research Hypotheses

The current study was directed by the following research hypotheses:

Hypothesis 1

The mention of the ASD diagnosis in the vignette, and the mention of ASD plus the additional details mentioning social and communication difficulties will lead participants to perceive the individual as having less control over his behavior, and therefore, be less supportive of punishment than when no diagnosis is present.

Hypothesis 2

Participants with more prior knowledge of ASD will perceive the individual as having less control over his behavior and will be less supportive of punishment than those with less prior ASD knowledge.

METHODS

Observations

The authors administered a hypothetical vignette (approximately 500 words) developed by Phillips, Quirk, Rosenfeld, and O'Connor (2004) that contained a scenario that depicted a male college student engaging in persistent courting behaviors towards a female acquaintance at the same college. The persistent courting behaviors were consistent with New York State anti-stalking law in the third degree (felony stalking). The lead author edited the vignette to fit the purpose of this study by developing three different versions: 1) made no mention of the male perpetrator having ASD (referred to as, "no mention" from here on), 2) mentioned the perpetrator had a diagnosis of ASD (referred to as, "aware only" from here on, and 3) mentioned the perpetrator had ASD and included additional details about having difficulty initiating social relationships and interpreting verbal and non-verbal communication (referred to as, "detail" from here on).

The authors administered the Attribution Questionnaire (AQ) developed by Corrigan *et al.* (2003), which included scales that measure perceptions of controllability (five items), sympathy (six items), anger (six items), helping (five items), and punishment (eight items). Each item was coded on a nine-point Likert type scale (1= no, not at all; 9= yes, absolutely so). The mean scores were computed for each AQ construct, with higher scores indicating greater levels of agreement. Psychometric analyses of the AQ conducted by Pinto, Hickman, Logsdon, and Burant (2012) established acceptable validity using a confirmatory factor analysis of the factor structure ($\chi^2 = 2.4$, $df = 4$, $p = .659$, TLI = 1.042, CFI = 1.00, RMSEA = .000) and also noted acceptable internal consistency reliability ($\alpha = .70$).

To control for the potential influence of prior autism knowledge, including possible stereotypes, the authors administered the Autism Knowledge Survey-Revised (AKS-R, Swiezy 2007, 2013), the updated version of the original by Stone (1987). The AKS-R is a 20-item measure that assesses a respondent's degree of agreement with statements (10 accurate, 10 inaccurate) regarding ASD, including etiology, interventions, diagnosis, and outcomes. The AKS has been revised several times to reflect current knowledge informed by research of ASD (Swiezy, Fairbanks, Stuart, Ashby, Ables, and Stone 2005; Swiezy 2007, 2013). Recent psychometric analyses of this updated

AKS survey conducted by Atun-Einy and Ben-Sasson (2018) among healthcare professionals revealed that it was unidimensional, had reasonable internal consistency (Cronbach's alpha 0.81), stable reliability, and showed initial reasonable validity (five-factor solution explained 41.78% of the variance), and the test-retest intraclass correlation coefficient ranged between 0.73–0.92.

Participants either agreed or disagreed to each statement on 6-point Likert-type scale (fully agree = 1, fully disagree = 6). Participants were encouraged to respond the AKS-R to the best of their knowledge. If participants skipped questions on the AKS-R, those questions were not counted towards their overall score. Participants were instructed to complete the AKS-R after they completed the first survey (vignette and AQ) to avoid the threat of instrumentation, where prior questions can influence subsequent questions. The accurate statements were reverse coded, so that a higher number reflected greater knowledge of autism (highest possible AKS-R score = 120).

The surveys were anonymous, and no names, social security, or student identification numbers were collected. Each survey was assigned a number that could not be linked back to the subject completing the survey. To control for threats to internal validity, participants were not told the true purpose of the study to reduce desirability bias. Participants were also not told the study was on harassment or stalking, as disclosing a criminal element of the vignette could potentially influence the variation in perceptions and responses. Because approximately one-third of the participants would receive a vignette with no mention of ASD, they were told they were participating in two different studies, one on perceptions of persistent courtship behavior, and one on autism knowledge among college students. This deception was addressed by providing participants with a debriefing statement after completing the survey that explained the actual purpose of the study and why such information was withheld. To enhance reliability, two separate raters entered the survey information into Statistical Package for the Social Sciences Version 25 (SPSS 25). The datasets were compared, and the lead author corrected any inconsistencies via reviewing the surveys.

Sample

Participants for this study were drawn from a purposive and convenience sample of the student body

enrolled in undergraduate CJ courses at two public and two private universities in New Jersey and Pennsylvania (one public and one private in each state). The Institutional Review Board application was approved from each university. The four universities varied in student enrollment size (approximately 2,100, 3,900, 8,200, and 8,500) and location setting (rural, suburban, urban). The universities were selected to obtain a diverse sample of CJ students with diverse backgrounds. The courses varied in size and level (100-level to 400-level) to capture students of different ages and stages in their academic program. The authors selected students in CJ courses to capture a greater percentage of CJ or related program majors, as such programs are typically designed educate students, in part, about the CJS (law enforcement, courts, corrections). The authors believe it is important to measure the reactions, thoughts, and perceptions of such behaviors of this student population that will most likely work in some sector of CJS in the future. The data was collected in the Spring 2017 through Spring 2018 semesters. Students were not compensated for their participation and the response rate varied per class and ranged from 84% to 100%.

Variables

The dependent variable, punishment, was computed using the mean score of the punishment items in the Attribution Questionnaire (AQ). Similarly, the mediating variable, controllability, was calculated using the five corresponding AQ items. Two items indicated low controllability (e.g., I think Tom is not the one to be blamed for the incident) and three items indicated high controllability (e.g., I think Tom should have more control over his behavior). The two items indicating low controllability were reverse coded so that a higher score indicated a greater perception of controllability. Controllability was calculated using the mean score of all five items. ASD Awareness, was determined via the vignette each participant received (1, 2, 3), and prior autism knowledge was measured using the AKS-R. The authors controlled for the influence of gender. Prior research has demonstrated gender differences on attitudes towards punishment (Benavides-Espinoza and Cunningham, 2010); attitudes towards those with ASD (Iobst *et al.* 2009; Matthews *et al.* 2015), perceptions of dating rejection (Moore 2002), dating behaviors (Hall and Canterberry 2011; Paynter and Leaper 2016), and perceptions of stalking (Cass and Mallicoat 2015; Lambert, Smith, Geistman, Cluse-Tolar and Jiang 2013; Phillips *et al.* 2004).

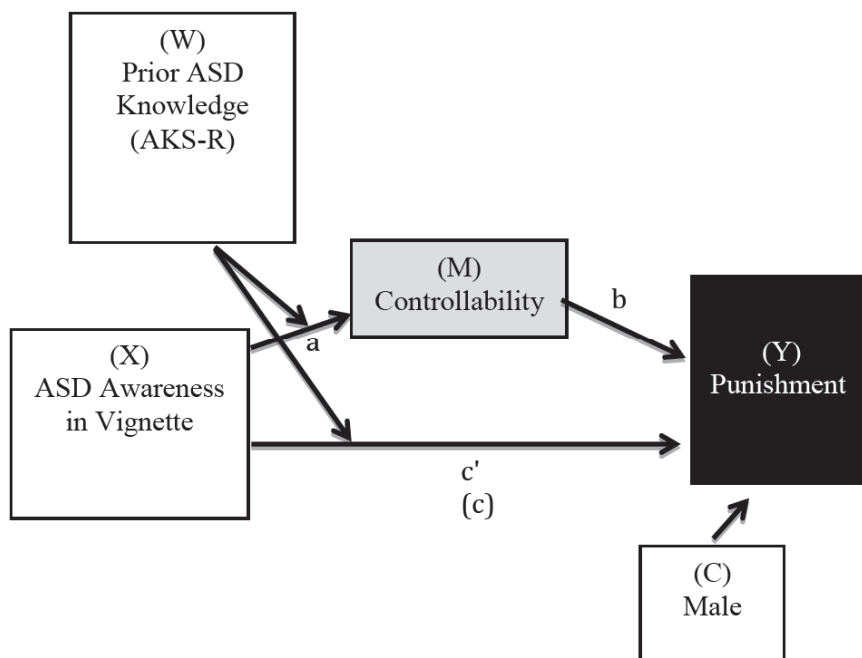


Figure 1: Attribution Theory Conceptual Model of AQ (adapted from Corrigan *et al.*, 2003 and Hayes, 2016 PROCESS Model 8).

$a*b$ = indirect effect of X on Y through M.

c' = direct effect of X on Y.

$c = c' + a*b$ = total effect of X on Y.

Conditional Process Modelling

To explore how controllability *mediates* the effect of ASD awareness on punishment, as well as how prior knowledge *moderates* the direct and indirect effects between ASD awareness and punishment, the authors applied a conditional process model to test for moderated mediation using PROCESS macro in SPSS (Hayes 2017), which is an updated test from Barron and Kenney's (1986) mediation model (see Hayes and Preacher 2014; Hayes 2009; Hayes 2017; Preacher and Hayes 2004). Specifically, the authors were interested in knowing whether gender moderated the relationships among ASD awareness, perceived controllability, and punishment.

Figure 1 displays a conceptual model of AT adapted from Corrigan *et al.* (2003) using Hayes (2017) PROCESS Model where one's belief and responses to harassment or unlawful pursuit behaviors are believed to be under the person's control, negative judgments and responses are predicted to increase. The model also implies that the effect of ASD awareness on punishments is mediated through controllability. In addition, prior knowledge of ASD was used as a moderator for the effect of ASD awareness on controllability, where greater knowledge is predicted to

reduce punitive responses with the mediating effect of controllability, as well as for the effect of ASD awareness on punishments.

The authors mean-centered the variables ASD Awareness and Prior ASD Knowledge, which were used to form products when estimating a moderated path. Although earlier literature widely believe that mean-centering is a necessary step in moderation analysis (e.g., to reduce multicollinearity issue), a great deal of recent literature has argued against it and claimed that mean-centering is redundant and unnecessary. Hayes, Glynn, and Huges (2012), however, added that mean-centering guarantees that the interpretations of the coefficients for the interaction term (i.e. moderated mediation) will be meaningful within the range of the data; thus, mean-centering is unnecessary, but preferred.

RESULTS

Descriptive Statistics

Table 1 displays the characteristics and demographics of the sample by university. The sample was approximately half male and half female, and racially and ethnically diverse, with 59.1% white/Caucasian, 12.3% black/African American,

Table 1: Sample Characteristics, N=545

	University				Total N= 545 n (%)
	PA Public n = 217 n (%)	PA Private n = 124 n (%)	NJ Public n = 137 n (%)	NJ Private n = 67 n (%)	
Survey Type					
No mention	64 (29.5)	44 (35.5)	43 (31.4)	21 (31.3)	172 (31.6)
Aware Only	86 (39.6)	38 (30.6)	45 (32.8)	24 (35.8)	193 (35.4)
Detail	67 (30.9)	42 (33.9)	49 (35.8)	22 (32.8)	180 (30.0)
Academic Year (n= 540)					
1	27 (12.4)	39 (31.5)	11 (8.0)	15 (22.4)	92 (16.7)
2	57 (26.3)	28 (22.6)	34 (24.8)	12 (17.9)	131 (24.0)
3	61 (28.1)	32 (25.8)	31 (22.6)	16 (23.9)	140 (25.7)
4	72 (33.2)	24 (19.4)	57 (41.6)	24 (35.8)	177 (32.5)
CJ or Related Major	156 (71.9)	67 (54.5)	125 (91.2)	62 (92.5)	410 (75.4)
Gender (n = 543)					
Male	112 (51.6)	61 (49.2)	70 (51.5)	30 (43.8)	273 (50.2)
Female	105 (48.4)	62 (50.0)	65 (47.8)	37 (56.3)	268 (49.4)
Transgender		1 (0.8)	1 (0.7)		2 (0.4)
Relationship Status (n = 544)					
Single	112 (51.9)	74 (59.7)	73 (53.3)	34 (50.7)	291 (53.5)
Single- in relation	100 (46.3)	49 (39.5)	56 (40.9)	32 (47.8)	239 (44.0)
Married	1 (0.5)	0 (0.0)	7 (5.1)	1 (1.5)	9 (1.7)
Other	3 (1.4)	1 (0.8)	1 (0.7)	0 (0.0)	5 (0.9)
Race/Ethnicity (n = 534)					
White/Caucasian	156 (71.9)	94 (75.8)	34 (25.2)	37 (55.2)	331 (59.1)
Black/African Am.	24 (11.1)	2 (1.6)	28 (20.7)	13 (19.4)	67 (12.3)
Asian/Pacific Is.	4 (1.8)	5 (4.0)	10 (7.4)	1 (1.5)	20 (3.7)
Hispanic	24 (11.1)	19 (15.3)	38 (28.1)	15 (22.4)	96 (17.7)
Native Am./Indigen.	3 (1.4)	1 (0.8)	12 (8.9)	0 (0.0)	16 (2.9)
Bi-racial	6 (2.8)	3 (2.5)	13 (9.6)	1 (1.5)	23 (4.3)
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Age (n = 542)	20.78 (1.5)	19.86 (2.2)	22.83 (4.25)	20.82 (2.8)	21.9 (2.9)
AKS-R Score (n = 527) (range: 48-103)	84.8 (7.9)	84.3 (6.9)	81.1 (8.9)	84.7 (8.3)	83.8 (8.1)
Controllability (n = 544) (mean range 1-9)	6.35 (1.60)	6.19 (1.49)	5.98 (1.67)	5.59 (1.54)	6.13 (1.60)
Punishment (n = 544) (mean range 1-9)	3.68 (1.42)	3.83 (1.42)	3.43 (1.71)	3.07 (1.37)	3.57 (1.51)

17.7% Hispanic, 3.7% Asian/Pacific Islander, 2.9% Native American/indigenous, and another 4.3% identifying with two or more races. The sample combining four different universities resulted in a sample that was similar in gender and race to that of the general U.S. population.¹

Table 2 displays the mean scores for the dependent variable, punishment, the mediation variable,

controllability, for the entire sample. The participants who received the aware only vignette compared to those who received the not aware, perceived the individual as having less control over his behavior (5.80 vs. 7.23) and were less supportive of punishment (3.48 vs. 4.34). Further, those who received the detail vignette, compared to those who received the aware only, also perceived the individual as having less control over his behavior (5.42 vs. 5.80) and were less supportive of punishment (2.95 vs. 3.48). An ANOVA that compared the means between those who received

¹See <https://www.census.gov/quickfacts/fact/table/US/PST045217>

Table 2: Descriptive Statistics for Awareness, Punishment, Controllability (Mediator)

		(Y)	(M)
		Punishment	Controllability
No mention (0)	mean	4.34	7.23
(n=171)	Std. Dev.	1.46	1.18
Aware Only (1)	mean	3.48	5.80
(n=193)	Std. Dev.	1.40	1.36
Detail (2)	mean	2.95	5.42
(n=180)	Std. Dev.	1.35	1.17
(1 & 2)		F = 13, p <.001	F = 6, p<.015

the aware only and those who received the detail demonstrated the difference was statistically significant for both punishment ($F = 13, p < .001$) and controllability ($F = 6, p < .015$). It appears that this additional information about the social and communication difficulties made a difference in participants' perceptions of controllability and the level of punishment the individual deserved.

Table 3 displays the conditional process analyses that was conducted to determine the effects of awareness of ASD in the vignette on perceptions of controllability and punishment for the entire sample. The authors compared those received the no mention to those who received either the aware only or detail (conditions 2 and 3 combined). Table 3 shows that the "magnitude" of the direct effect ($c' = -0.405, p = 0.003$) gets smaller, compared to the total effect ($c = -1.08$), when the mediator was introduced into the model. The results demonstrate that awareness of ASD mediated the indirect effect on punishment through controllability (indirect effect $a*b = -1.551*0.435 = -0.675$). There is a

significant indirect effect of ASD awareness on punishment through controllability.

Analysis of the moderation effect, however, indicated that prior knowledge did not moderate the indirect effect of ASD awareness on perceived punishment. The index of moderated mediation, a test of moderation of the indirect effect, as developed by Hayes (2017), was not significant (index = -0.013, bootstrapped CI = [-0.026, 0.000]). The bootstrapped confidence interval included zero, and thus the authors could not claim that the indirect effect was related to the moderator. Thus, the authors fail to reject the second hypothesis that prior knowledge would influence the strength (or direction) of the relationship between ASD awareness, controllability, and punishment. The covariate in the model, male, was also not significant.

Because the vignettes consisted of three conditions, a total of three conditional process analyses were conducted to determine the effects of the different

Table 3: Coefficients for the Conditional Process Model of ASD Awareness, Prior ASD Knowledge, Controllability, and Punishment: Aware Only Plus Detail vs. No Mention (N = 543)

		M (Controllability)				Y(Punishment)		
		Coeff.	SE	p		Coeff.	SE	p
Constant		6.037	0.088	0.001		0.791	0.251	0.002
Aware (X)	a	-1.551	0.133	0.001	c'	-0.405	0.135	0.003
Controllability (M)		-	-	-	b	0.435	0.04	0.001
Prior Knowledge (W)		-0.002	0.008	0.806		0.001	0.007	0.837
X*W		-0.029	0.016	0.068		0.008	0.014	0.558
Male (C)		0.216	0.125	0.084		0.208	0.113	0.065
		$R^2 = 0.464$					$R^2 = 0.536$	
		$F(4,520) = 35.737, p < 0.001$					$F(5,519) = 41.923, p < 0.001$	

Index of moderated mediation: -0.013, bootstrapped SE = 0.007, bootstrapped CI = [-0.026, 0.000].

Table 4: Coefficients for the Conditional Process Models, Three Sub-Samples

	M (Controllability)			Y(Punishment)		
	Coeff.	SE	<i>p</i>	Coeff.	SE	<i>p</i>
Model 1 (Aware Only vs. No mention) n=355						
Constant	6.426	0.098	0.001	0.99	0.367	0.007
X (0 vs. 1)	-1.371	0.136	0.001	-0.214	0.159	0.178
Controllability (M)	-	-	-	0.436	0.055	< 0.001
Prior Knowledge (W)	0.007	0.008	0.361	-0.002	0.008	0.813
X*W	-0.02	0.016	0.221	0.004	0.017	0.806
Male (C)	0.087	0.137	0.528	0.126	0.141	0.372
$R^2 = 0.231$			$R^2 = 0.219$			
$F(4,350) = 26.249, p < 0.001$			$F(5,349) = 19.616, p < 0.001$			
Model 2 (Detail vs. No mention) n=335						
Constant	6.204	0.111	< 0.001	0.667	0.308	0.031
X (0 vs. 2)	-0.87	0.079	< 0.001	-0.3	0.079	< 0.001
Controllability (M)	-	-	-	0.445	0.047	< 0.001
Prior Knowledge (W)	-0.002	0.01	0.857	0.004	0.008	0.661
X*W	-0.019	0.01	0.044	0.008	0.008	0.329
Male (C)	0.25	0.158	0.114	0.248	0.136	0.069
$R^2 = 0.283$			$R^2 = 0.379$			
$F(4,330) = 32.642, p < 0.001$			$F(5,329) = 40.154, p < 0.001$			
Model 3 (Aware Only vs. Detail) n=360						
Constant	5.508	0.113	0.001	0.882	0.261	0.001
X (1 vs. 2)	-0.352	0.158	0.027	-0.42	0.133	0.002
Controllability (M)	-	-	-	0.394	0.044	< 0.001
Prior Knowledge (W)	-0.009	0.01	0.374	0.006	0.008	0.514
X*W	-0.022	0.02	0.280	0.009	0.017	0.586
Male (C)	0.309	0.16	0.055	0.228	0.134	0.091
$R^2 = 0.032$			$R^2 = 0.229$			
$F(4,355) = 2.925, p = 0.021$			$F(5,354) = 21.011, p < 0.001$			

levels of awareness of ASD in the vignette on punishment, respectively. The full sample was divided into three sub-samples for the following comparisons: 1) Aware only vs. No mention, 2) Detail vs. No mention, and 3) Aware only vs. Detail. Table 4 shows that the moderator of interest, prior knowledge, in particular, was not significant across all three sub-samples. The mediating effect of controllability on the relationship between ASD awareness and perceived punishment remain significant, and the directions of the effect (negative) remain the same across all three sub-samples.

DISCUSSION

The results are consistent with AT, as respondents held the individual less accountable for his actions

when made aware of his ASD diagnosis, as indicated by the decreased perceptions of controllability. The first hypothesis was supported, as the awareness of the perpetrator having ASD decreased the support of punishment and participants believed he was less responsible. The additional vignette information regarding social and communication impairments further decreased perceptions of controllability and punishment. The participants who received the vignette that mentioned the ASD diagnosis may have believed the persistent behavior was due to a misunderstanding, as noted in research on ASD and harassment and stalking (Archer and Hurley 2013; Barry-Walsh and Mullen 2004; Browning and Caulfield 2011).

The second hypothesis was not supported. Specific knowledge of etiology, diagnosis, interventions, and

outcomes on the AKS-R had no significant influence on the subjects' perceptions of controllability and support of punishment. These findings were inconsistent with the results of Payne and Wood (2015) and Ling *et al.* (2010), who noted that the more the knowledge the autism decreased punitive attitudes.

According to the results of the current study, it appears that our sample of CJ students simply had to be aware of the diagnosis of ASD in order to influence their perceptions of controllability and support for punishment. The additional ASD information about having difficulty initiating social relationships and interpreting verbal and non-verbal communication further changed perceptions of behavior and level of punishment deserved. This pattern was noted, regardless of one's knowledge and understanding of ASD. Females were less likely to support punishment compared to males, but this was not statistically significant. This is an inconsistent finding of prior research (Benavides-Espinoza and Cunningham, 2010).

LIMITATIONS

Although the results are promising for the support of AT, this study is not without limitations. The principle limitation would be the representativeness of the sample, as this was a convenience sample of college students enrolled in CJ courses and may not represent all CJ students. The participants were not selected to be representative of the general population or the general college student population.

A second limitation is that the authors measured opinions of behavior with a hypothetical vignette, which limited assessing the actual reactions of students in real life settings. The sample also measured reactions to a vignette of CJ students/future CJ professionals, and not reactions of those who have entered their careers in the CJ. Willner and Smith (2008) argued that the attribution of causality in relation to vignettes is somehow arbitrary. For that reason, participants in the present study might tend to give pro-social responses, a threat of social desirability. Those provided vignettes mentioning the ASD diagnosis might have been apprehensive to support a punishment of someone with any type of disorder, even if they felt the perpetrator deserved to be punished. The authors also did not control for socio-economic status; therefore, it is unknown whether this has an effect on the amount of exposure, resources in the community, and level of acceptance or views of ASD, in general.

Another limitation is that the study was limited to perceptions of heterosexual stalking with a male perpetrator and a female victim. It is possible that perceptions may change in scenarios where a man is pursuing a man, a woman is pursuing a woman, or a woman is pursuing a man. In these new scenarios, the constructed beliefs regarding gender and homosexuality could influence perceptions. The study was limited to perceptions of one example, which may or may not represent all heterosexual stalking with a male perpetrator and a female victim. The vignette depicts only one perpetrator/target relationship, acquaintance. It is possible that other perpetrator/target relationships such as stranger or former romantic partner would provide different perceptions and responses. Nonetheless, all participants were provided the same scenario with and without an ASD diagnosis in order to determine the effect of the diagnosis of perceptions of the perpetrator's behavior.

Lastly, the authors did not inquire about personal prior stalking or sexual assault victimization, which could influence perceptions, especially among female participants if they experienced a similar situation. However, due to the complex definition and conceptual agreements among these terms, it may not result in a valid measurement. A valid measure would require several more questions about sensitive material that is not imperative to the study.

FUTURE RESEARCH

Whether or not individuals with ASD are overrepresented among official reports of harassment or stalking is unknown and requires further evaluation. As mentioned in the limitations, whether or not prior victims of stalking attribute more responsibility, regardless of an ASD diagnosis could also be explored using AT.

Overall, knowledge of ASD among those in the CJS and the extent of their contact with those with ASD are unknown. Future research could examine this extent and how CJ professionals react when encountering those with ASD. Because of the media's negative portrayal of those with ASD are recent, little research is available on how such accounts influence perceptions of ASD, particularly those who are mildly affected and require less support. The results reported by Berryessa (2014) regarding their possible implications for CJ practitioners are arguably disturbing. It is unknown what effect media's portrayal of those with ASD has on those in law enforcement and other sectors of the CJS

while performing their duties. Research has indicated that people with ASD or other developmental disabilities will have up to seven times more contacts with law enforcement during their lifetimes than members of the general population (Curry, Posluszny, and Kraska 1993; Debbaudt 2002). Several states, including New Jersey, have passed legislation that requires police officers and certain first responders to undergo autism awareness and education training (Mogavero 2016). Considering the harm those with ASD may endure when involved with the CJS (Freckleton 2013; Haskins and Silva 2006; Mayes 2003; North, Russell, and Gudjonsson 2008; Taylor *et al.* 2009) it is important to understand their level of autism knowledge and further research applying AT among CJ professionals is necessary

CONCLUSION

The current study sought to find whether awareness of ASD would decrease perceptions of controllability and reduces punitive responses to harassing behaviors. The results demonstrate support for AT among the sample of CJ students, however, others first have to be aware of one's condition. As mentioned previously, ASD is often a non-obvious condition and whether or not someone discloses their ASD diagnosis to others is a personal decision, as many individuals may not feel comfortable disclosing their diagnosis to others (Cai and Richdale 2016; Cox *et al.* 2017).

Understanding that intimate relationships are an important part of socialization and social acceptance, including those with ASD, there must be a greater understanding of ASD and greater acceptance of members of the community with ASD. The goals for greater awareness and understanding are: 1) to create an accepting and inclusive environment of those with ASD, 2) to decrease the number of people with ASD accused of unwanted communication and contact while reducing the number of people who feel victimized by such behavior, 3) divert those with ASD from the CJS when appropriate, and if one with ASD has contact with the CJS due to formal complaints or suspicious persons reports, officials must establish clear and consistent communication methods, verify facts, and make appropriate recommendations/accommodations when necessary to insure fair and just treatments for all those concerned.

The results also demonstrated that when others are provided more information about ASD with regard to

difficulties initiating social relationships and interpreting verbal and non-verbal communication, it decreased perceptions of controllability and decreased support of punishment. The increased awareness of these specific traits of ASD could potentially result in a greater understanding and improved communication. The current study demonstrated support for disclosing one's diagnosis and explaining any communication difficulties in the event of a misunderstanding, particularly to law enforcement and others working in the CJS when necessary. If individuals with ASD encounter the CJS, they should disclose their diagnosis to assist in determinations of intent and culpability (Freckleton and List 2009; Taylor *et al.* 2009). ASD awareness and education and is an effective tool to maximize valuable time and resources and improve interactions with individuals with ASD (Debbaudt 2004). As the results of the current study suggest, specific knowledge of the etiology, diagnostics, interventions, and outcomes such as those in the AKS-R will not necessarily be useful in influencing perceptions of behavior. Instead, such education programs should focus on knowledge/awareness of different social and communication abilities, and methods to communicate more effectively.

COMPLIANCE WITH ETHICAL STANDARDS

Exclusivity

The authors are submitting this manuscript for exclusive consideration as an article in *International Journal of Criminology and Sociology* and declare the manuscript or parts of the manuscript have not been published elsewhere.

DISCLOSURE OF POTENTIAL CONFLICTS OF INTEREST

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RESEARCH INVOLVING HUMAN PARTICIPANTS

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research

committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

INFORMED CONSENT

Informed consent was obtained from all individual participants included in the study.

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