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***Implicit Biases by Managers and peers in the Cultural sector -  
are autistic employees at a disadvantage?***

**Author:** Hayley Williams Hindle

**Supervisor/s:** Chis Ashwin,

Centre for Applied Autism Research, University of Bath

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## **AHRC Project submission 2020**

**Host:** University of Bath, Bath,  
BA2 7AY

**Supervisor:** Dr Chris Ashwin, Lecturer, Department of  
Psychology, Centre for Applied Autism Research

**Email:** [c.ashwin@bath.ac.uk](mailto:c.ashwin@bath.ac.uk) Phone+44 (0) 1225 383502

**Implicit Biases by Managers and peers in the Cultural sector - are autistic employees at a disadvantage?**

**author; Hayley Williams Hindle**

### **Abstract**

**Adults with autism have very low rates of full time employment, despite the majority expressing interest in working full time. However, little is currently known about the possible barriers which lead to the lower rates of obtaining and maintaining employment for those with autism. One potential barrier are biases towards autism and people with autism, although this is thought to vary based on the sector of employment. The present study investigated implicit and explicit bias of people working in the cultural sector towards fellow cultural sector autistic employees. A total of 102 cultural sector workers were recruited and completed various measures of both implicit and explicit bias online as well as a measure of the degree of autistic traits. Tasks included measuring participants' affective and cognitive attitudes towards a peer displaying characteristics of autism spectrum condition (ASC) in a written vignette with three conditions ; autistic, no label and typical worker. Results indicated implicit bias against autism, and significantly higher negative explicit bias towards a fellow employee labelled as autistic. There was also a gender effect: males showed a greater negative bias towards the employee labelled autistic. Together the results show that implicit and explicit biases towards autism and autistic employees exist in workers within the cultural sector, which may contribute to lower employment rates.**

### **Introduction**

Autism is a spectrum of neurodevelopmental conditions, characterised by difficulties and differences in the development of social relationships and communication skills, in the presence of unusually strong narrow interests, repetitive behaviour, and difficulties in coping with unexpected change. **(ARC - Autism Research Centre at the University of Cambridge)** Only 16% of autistic adults in the UK are in full time paid work, with 32% in any work. This compares with 47% of all disabled adults and 80% of non disabled adults in any paid work, a statistic that has not lessened for autistic adults over the last 10 years. Of the 450,000 autistic adults of working age in the UK, 11% of those surveyed, the largest percentage, wanted to work in Cultural Sector jobs. **(National Autism Society - Employment Gap Report)**

Evidence shows that university students on the autism spectrum are typically one of the highest achieving groups at university but also the least likely to gain graduate level employment following their studies. Graduates on the autism spectrum specifically have the highest unemployment rates of all disability types (**Association of Graduate Careers Advisory Services, 2015**). Recent UK government figures indicate that only 3.9% of neurotypical graduates were unemployed six months after completing their course by comparison to 21.5% of autistic graduates (**BIS, 2016**).

The incidence of research looking at autism and employment has risen over recent years with themes emerging about some of the possible barriers to successful integration. **Johnson and Joshi (2016)** found that fears of stigma and of increased workplace monitoring are reasons many autistic adults do not disclose their autism status at work, even though this prevents access to accommodations and legal protections. This may be a wise protective strategy since other research has evidenced that cognitive and mental health related disabilities are associated with more stigma in the workplace than physical disabilities (e.g. **Jans et al (2012)**). **Lorenz (2016)** conducted a study looking at job related barriers for autistic people. Sixty-six employed individuals with autism, 17 of them with autism-specific employment, participated in an online survey. Results showed a variety of possible barriers but individuals in non-autism-specific employment mentioned obstacles concerning communication and human interaction most.

**Hayward et al (2018)** conducted a systematic review of studies of females with high functioning autism in the workplace. The principal challenges reported were with communication, social interaction, and stress, together with negative mental and physical health. **Baldwin et al (2014)** looked at data from a national survey describing the employment activities and experiences of 130 adults with Asperger's Disorder (AD) and high functioning autism (HFA) in Australia. Their findings confirm and expand upon existing evidence that adults with AD and HFA, despite their capacity and willingness to work, face significant disadvantages in the labour market around a lack of understanding and support in employment settings.

Looking more specifically at the Cultural sector, the **2015 Warwick report** took evidence and testimony from over 200 individuals from across the arts, culture and heritage sectors, creative industries and organisations responsible for arts development and training, government bodies and academics. It found that despite commitment to the inclusion of the whole population, diversity of the creative workforce, leadership and consumers remains a key challenge.

Other barriers to gaining and maintaining employment for people with autism might be contextual factors, such as the biases of managers and fellow employees. There is a popular notion that the cultural sector is different from other work sectors, and that its members are less biased and much more accepting of difference and individuality. In his best selling 2012 book the **'Rise of the Creative Class'** **Richard Florida** argues that there is a distinct 'creative class' who particularly value meritocracy, diversity, individuality and openness. The more recent quantitative work of **Taylor & O'Brien (2017)** challenges this idea of a more inclusive creative class however. Using principal components analysis and regression of a large (n=2487) data set of creative workers attitudes taken from a web survey, they found that creative respondents' attitudes were no more meritocratic than those of the general population. Indeed, Arts Professional **'Freedom of Expression'** study published this year (2020) with over 1,000 respondents found that 80% thought that "workers in the arts and cultural sector who share controversial opinions risk being professionally ostracised". In other words, this study seems to suggest that the working environment within the Cultural sector - a culture of self-censorship and fear of backlash from funders,

colleagues and the public - is hampering efforts to explore individual attitudes, behaviours and biases that may impact on the in employment numbers for autistic people.

**Scott, Milbourn et al (2018)** conducted a large literature review of studies looking at the employment of individuals with autism spectrum disorder. This overview highlighted the role that environmental and personal factors, such as employers, education around ASD, and individualised rather than generalised approaches to accommodation, play as barriers and facilitators in the employment of people with autism spectrum disorder.

Some experimental results suggest that knowledge of a diagnosis might improve attitudes toward college students with ASD. **Matthews and Goldberg (2015)** used vignettes to examine cognitive, behavioural and affective attitudes in 224 college students towards high functioning autistic peers, using a 'typical' label condition and no label condition as controls. The presentation of case vignettes is one of the most commonly used methods in establishing attitudes towards people with mental health issues (**Swami, 2012; see Butler and Gillis, 2011**) Students reported more positive behavioral and cognitive attitudes toward the autistic vignette character than those in the no label condition. **Brosnan and Mills (2016)** repeated a similar study with 120 college students and included a high functioning autism (aspergers) label, autism label and schizophrenia label condition alongside a typical label. They found that affective responses were significantly more positive and less negative towards behaviours associated with clinical groups compared to the typical college student.

There is conflicting evidence in the literature, however, about the effects of a particular label on perception of an individual. **Taylor (2018)** examined (112) university students' judgments about and behavior towards an individual they perceived to be on the autism spectrum versus an individual who they perceived not to be, and measured implicit and explicit biases towards autistic individuals. Participants demonstrated implicit and explicit biases against autistic individuals, although those biases did not predict overall behavior. Results in that study indicated that participants who perceived more autistic traits in their interaction partner had more negative perceptions of their partner's social ability and were less willing to interact with them further. Additionally, some prejudiced behaviors such as fidgeting or speech errors varied depending on whether the participant believed the confederate was autistic and, if so, whether they thought so based on a label of an autistic diagnosis or the presentation of behaviors consistent with autism stereotypes.

Research findings examining attitudes toward autism are inconsistent. Some studies have demonstrated that autistic people are perceived negatively, whereas others suggest that they are perceived positively, and still others find that perceptions vary as a function of the behavior displayed and whether they are identified as autistic. Even so, most studies have relied on a single methodology, namely explicit self-report measures.

Self report measures are particularly susceptible to social desirability bias and situational context however, **Hergentrather & Rhodes (2007)**, so it is important to look at implicit measures of bias which are less subject to personal control. Although research has previously examined the attitudes that neurotypical adults have toward autistic adults, most of this work has directly asked people about their attitudes, assessing their explicit, or conscious, attitudes. Neurotypical adults, however, may not be able or willing to admit that they have negative attitudes toward autistic adults. Therefore, it is important to evaluate implicit attitudes, which are underlying attitudes at the unconscious level of awareness. Measures of implicit bias were therefore included in this study.

**Dovidio et al (2002)** demonstrated that implicit and explicit bias are different constructs and that they should be considered individually. Since the nature of bias can reveal the relationship between prejudice and discrimination it is an important avenue of exploration in understanding the attitudes towards autism

in the Cultural sector workforce. Explicit racial biases have been found to predict verbal behaviors during an interracial interaction, for example. **Dovidio, Kawakami, and Gaertner (2002)**. Because people are aware of their explicit biases, however, the behaviors that reflect these biases are the ones under conscious control, such as verbal friendliness and warmth. Implicit biases, by contrast, operate outside of an individual's awareness, but can still influence behavior (**Amodio & Devine, 2006; Dovidio & Gaertner, 2000; Payne 2001; Plant & Devine, 1998**). The Implicit Association Task (IAT) has been used widely to demonstrate the existence of strong implicit biases, even among people who explicitly report not to hold these biases **Baron & Banaji (2006)**. Furthermore, performance on the IAT has been shown to predict real-world behaviors despite explicit preferences to act in an unbiased manner (e.g., **Stanley et al. 2011; Kubota et al 2013**).

Using an IAT adapted for autism, **Dickter et al (2017)** found that there were more negative implicit biases towards autistic people than towards people who were neurotypical, both in college students and in adults. A more recent study by **Dickter et al (2020)** found that neurotypical adults with more autistic traits themselves had more positive implicit attitudes toward autistic adults., hypothesising that adults with autistic traits may be less biased than those without autistic traits since they may be able to recognize and understand the behaviors in themselves. Previous research indicates that attitudes toward autistic adults tend to be more positive in those individuals with previous experience with autistic people **Neville and White (2011)** and so we were interested to see if this result would be replicated here.

## **Aims and hypotheses**

The general aim here was to look at implicit and explicit biases of cultural sector workers towards autism. Using the IAT developed by Dickter et al to examine implicit bias, and 3 vignette conditions to examine cognitive and affective attitudes to peer characters given an autism label. A no label condition vignette, and a 'typical' label vignette were also included as controls. If previous findings with students extends to cultural employees then it was expected there would be positive biases towards people with autism and employees labelled as autistic. However, if biases towards autism still exist in the cultural sector then it was expected that negative biases would be evident by cultural workers towards autism and autistic employees.

We hypothesised that (1) cultural sector workers would show implicit bias against autism (2) cultural sector workers would respond differently to an autism label vignette condition compared to typical students and no label vignette condition (3) knowledge of ASD would impact upon peers' responses, and (4) biases would differ based on sex of the participant.

## **METHOD**

### **Participants**

The participants for this study were 102 adults (age 18+ Mean age 38.7, SD=11.3; female M = 42.3, SD=12.6, male M=34.9, SD=8.2 ) working in the Cultural sector. Participants were from the USA (95), UK

(44), France (11), India (8), Italy (5), Spain (4), Mexico (2), with individual participants from Turkey, Ghana, Switzerland, Czech republic, Ireland, Canada, Nigeria and New Zealand and 25 participants did not record their location. Participants were recruited online via amazon turk, and were invited to participate if they worked in the Cultural Sector. 6 participants were eliminated because their job description did not confirm work in the cultural sector.

Scores on the AQ ranged from 3 to 23, with a mean score of 11.40 (SD = 4.73). 2 participants reported a prior diagnosis of ASD or Asperger's,

Table 1. summary of descriptive statistics

	Mean	Std Dev	Range	T-test sig
Attitude Scale aff	4.14	0.96		
Attitude Scale cog	4.47	1.23	3.56-5.56	
IAT	0.46	0.49	0.66-1.09	t(55) = 7.57, p < .001
MCPR Internal	5.53	1.27	2.40-7.00	
MCPR External	4.09	1.49	1.00-7.00	
AQ28	11.41	4.73	3.00-23.00	
Age (years)	38.73	11.30	18 - 73	
Knowledge of ASC?	2.18	0.606	1.00-4.00	

## Materials

An online questionnaire was created comprising the following.

**AQ-28.** The (AQ-28) was used as a self-report measure of the participant's level of autistic traits. The AQ-S is an abridged version of the 50-item Autism Spectrum Quotient **Baron-Cohen et al. (2001)**. The shortened version was used as it is less demanding on participants' time and has been validated in three independent samples **Hoekstra et al.(2011)**. Participants were asked to rate 28 statements, such as 'I usually like to concentrate on the whole picture rather than the small details' and 'I find it difficult to work out people's intentions' on a 4-point Likert scale from 1 (definitely agree) to 4 (definitely disagree), with

some items reverse-scored . Total scores range from a minimum of 0(indicating no autistic traits) to a maximum score of 28 (full endorsement of autistic traits).

**Motivation to Respond without Prejudice Scale (MRWP)** This scale was created by **Dunton and Fazio (1997)** to measure how important it is to participants that they appear non-prejudiced. This 10 item scale, originally designed to assess motivation to control racial prejudice, was adapted for the current study by changing any description of an encounter with 'a black person' to 'other people' in order to measure a general motivation to respond without prejudice. Dunton and Fazio suggest that the contemporary dilemma for some people concerns appearing prejudiced to oneself (and possibly others), whereas for others the only dilemma concerns appearing prejudiced to others. So, 5 questions measure an external motivation (EMS) - what others think about how prejudiced we appear, and 5 questions on the scale measure an internal motivation (IMS) - how important it is to our own values that we appear non-prejudiced. These items include statements such as "In today's society it is important that one not be perceived as prejudiced in any manner," "Going through life worrying about whether you might offend someone is just more trouble than it's worth," and "I feel guilty when I have a negative thought or feeling about another person." Participants were asked to rate each item on a Likert-style scale from -3 (strongly disagree) to +3 (strongly agree) A positive score indicates a desire to appear non prejudiced. Reliability was acceptable (external scale  $\alpha = .860$ , internal scale  $\alpha = .874$ )

**Vignettes** 3 vignettes were adapted from **Matthews et al. (2015)** in order to examine the effect that labelling had on participants' attitudes towards the character. Participants all read three vignettes depicting social interaction between workers in a cultural workplace setting. The main character in the three separate vignettes was given a non gender-specific name, and exhibited behaviour which may be considered typical of a person with ASC. For one of the vignettes, participants were informed that the protagonist has ASC and was above average intelligence. For the ASC condition, the participants were also informed that such individuals 'sometimes demonstrate problems in social interaction and appropriate communication'. For the control condition, the participants were informed that the person illustrated was a typical worker and was of above average intelligence. A third condition gave no additional information about the character in the vignette.

As an example, an 'Autism Spectrum Condition' variant follows where the character in the vignette was labelled as being autistic:

*It is your first day of work in the record company and you are carrying some of your belongings into your new office in one of the shared office suites. Alex, one of your office mates who works in the opposite office to yours, walks into your office. Alex is the same age as you, has high functioning autism and is of above average intelligence. Individuals with high functioning autism sometimes demonstrate difficulty with social interactions and appropriate communication. However, most are of average to above average intelligence. You notice that the furniture in the shared office space is arranged in a way that seems to make the space more cramped. A week later, you decide to ask if Alex could help you rearrange the furniture. You start to move around the sofa but Alex gets upset and moves it back to its original position with no explanation. You brush it off and just decide to move around the furniture on your own. Alex sees that the furniture was moved and frantically requests that everything be moved back to the way it was.*

Having read the vignettes participants completed 20 items on a likert scale about their affective (10 items) and cognitive (10 items) attitudes to the character, with the instruction to 'rate the degree you think you

would feel towards the main character in that vignette'. Items are rated on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The subscales are scored separately.

**Implicit Association Test (IAT).** To measure participants' implicit biases towards ASD, an autism IAT developed by **Dickter and colleagues (2017)** was used. This measure, modified from the IAT created by **Greenwald et al (1998)**, is a reaction time task where participants categorize stimulus words into superordinate categories in different blocks. Implicit association is measured by faster reaction time.

## **Procedure**

All procedures were approved by the university's Ethics Committee and gave their informed consent prior to participating.

Each participant completed scales in the same order online. Demographic information, followed by the short version AQ, MRWP scale, they then read the vignettes and completed attitude measure likert scales relating to that vignette. Each participant completed the attitude scale three times, once after reading each vignette, which were presented in the order No label, typical, and autism condition. With the no label condition in the 'develop a play' scenario, the typical in the 'greeting / anime magazine' condition, and the autistic character in the 'furniture moving' scenario. Knowledge of ASD was indexed by asking participants the following four questions: (1) How would you rate your current level of ASD? ('never heard of it', 'know a little', 'know a lot', 'expert'), (2) How did you gain this knowledge? (e.g. 'experience', 'education', 'TV', 'Internet'), (3) Do you have a family member with ASD? ('yes', 'no') and (4) Do you have a friend/acquaintance with ASD ('yes', 'no'). Lastly participants completed the IAT. The study took approximately 20–30min to complete and participants were paid \$2 each to complete it.

## **Statistics Design**

### **Hypothesis 1**

To test if participants' mean response on the IAT was showing a bias or not, a one-sample t-test was run on the IAT scores of the sample against a score of 0 (with 0 representing no bias). A significant result would show that the sample is showing a bias towards autism.

### **Hypothesis 2**

To examine the influence of affective and cognitive bias measured by the likert scale response to the vignettes on each of the variables, a repeated measures ANOVA was run with Scale (Affective versus Cognitive) and Condition (Autistic label versus Neurotypical label versus No label) as the factors.

### **Hypothesis 3**

To investigate relationships between participants biases (IAT scores and their motivation to respond without prejudice scores) and their knowledge about autism and autistic traits as the predictor variables and their affective and cognitive ratings of a fellow employee with autism (i.e. vignette ratings) as the DVs two stepwise linear regressions were run with age, gender, ASC knowledge and AQ score entered as model 1, and model 2 included IAT scores and both internal and external motivation ratings. Regression 1 was run with affective ratings of the vignettes as the DV and regression 2 was run with cognitive ratings as the DV.



## Results

### Hypothesis 1

Results of the one sample t-test on the IAT data showed that the mean IAT scores (0.46) of the sample of cultural employees was significantly greater than 0,  $t(101) = 10.4$ ,  $p < .001$ .

### Hypothesis 2

Results from the ANOVA showed an interaction between Scale and Condition, ( $F(2,208)=11.923, p<.001, \eta_p^2=.103$ ). Post hoc t-tests within the affective rating data showed that the affective ratings towards the situation with the peer labelled autistic ( $M=4.14, SD=.96$ ) were more negative (higher anxiety, higher tension etc.) compared to the affective ratings for the vignette with the typical peer worker ( $M=3.62, SD=.96$ ),  $t(110)=-7.122, p<.001$ . There was no significant difference between cognitive ratings for the autistic label versus the neurotypical label conditions in cognitive ratings. No other significant effects were found (all  $p' > .05$ ).

### Hypothesis 3

#### *Prediction of affective ratings*

Regression analyses to predict participants' affective responses to the autistic employee indicated that model 1 was significant ( $F(4,97)=1.59, p=.183$ ), with an overall model fit of adjusted  $R^2 = .023$ , suggesting that age, gender, ASD knowledge and AQ score collectively explained 2.3% variance in affective ratings. Model 2 was significant ( $F(7,94)=3.09, p=.006$ ), with overall model fit adjusted  $R^2 = .127$ , suggesting that age, gender, ASC knowledge, AQ score, IAT score, external motivation and internal motivation collectively explained 12.7% variance in affective ratings. External motivation ( $\beta=.245, t=3.293, p=.001$ ) and internal motivation ( $\beta=.203, t=2.044, p=.044$ ) emerged as significant predictors, but IAT score ( $\beta=-.113, t=-1.188, p=.238$ ) did not.

#### *Prediction of cognitive ratings*

Regression analyses to predict participants' cognitive responses to the autistic employee indicated that model 1 was not significant ( $F(4,97)=1.672, p=.163$ ), with an overall model fit of adjusted  $R^2 = .026$ , indicating that age, gender, ASD knowledge and AQ score collectively explained 2.6% variance in cognitive ratings. However, gender ( $\beta=.207, t=2.024, p=.046$ ) emerged as a significant individual predictor. Model 2 was also not significant ( $F(7,94)=1.777, p=.101$ ), with an overall model fit of adjusted  $R^2 = .051$ , indicating that age, gender, ASD knowledge, AQ score, IAT score, external motivation and internal motivation collectively explained 5.1% variance in cognitive ratings. External motivation ( $\beta=.252, t=2.323, p=.022$ ) emerged as a significant individual predictor.

## Discussion

The IAT data collected here revealed an overall negative implicit bias to autism by this sample of cultural workers. This result is not entirely surprising, even in the context of greater public awareness of and knowledge about autism and neurodiversity in the workforce. Discussion around autism in the public realm, and in literature, as well as the definition of autism itself, are still couched in negative language - the language of deficit. (**Mottron L, 2011**). An implicit bias is the unconscious attribution of particular qualities to a member of a certain social group which are shaped by experience and based on learned associations between particular qualities and social categories. Implicit biases are pervasive and generally in line with the non-dominant group, and we would also expect that autistic people will show a negative implicit bias against their own neurotype for this reason. In contrast to the recent findings by **Dickter et al (2020)**, we found no correlation between implicit bias and measure of autistic traits. These findings are important, as negative implicit attitudes may influence neurotypical people's behavior toward autistic adults, adding to the challenges faced by these individuals.

Results showed that this sample of cultural workers also had a more negative affective bias to an employee identified as autistic compared to a neurotypical employee in attitude ratings of vignettes. There was no significant influence of cognitive bias to the vignette character labelled autistic. This result contrasts with the research findings of **Matthews et al** and is in line with **Taylor (2018)** in student populations, where an 'autistic' label led to more negative attitudes. For this sample of cultural sector workers, the label 'autistic', rather than the behaviour itself, led to the negative attitude. This result was more surprising given the increasing awareness of autism in the general population and more prevalent levels of general and specific education about appropriate autism related adaptations for the workplace. Research has shown that there is a consistent positive but low predictive relation between attitude and behaviour.

We know too that implicit attitudes predict more subtle forms of bias and discrimination and explicit attitudes predict more overt behaviors. (see **Torino et al's** Microaggression Theory: Influence and Implications) The IAT has been shown to have greater predictive validity than explicit measures, suggesting that the autism IAT may be a better indicator of actual behavior toward autistic adults than the explicit attitude questionnaire. Furthermore, the IAT is a more robust predictor of less controllable biased behaviors such as behavioral rejection or feelings of discomfort toward individuals of a disadvantaged group in comparison to explicit measures. Determining to what extent the implicit and/or explicit attitudes that individuals hold about autism results in discriminatory behavior is an important area for future research.

For the cultural sector specifically we might expect there to be a greater awareness around facilitating appropriate access since public facing venues such as galleries and theatres have a legal requirement to be publically accessible and there is an immediate commercial driver for this inclusion effort. It is disappointing then that the research didn't indicate a general level of positivity about the nature of neuro difference when it is identified in the cultural workforce. These findings challenge the notion of the cultural population as being less biased and challenge the wisdom of employees automatically disclosing an autistic neurotype in the cultural workplace, since we have found no evidence here to support the idea that disclosure of an autistic neurotype will facilitate more positive attitudes towards autistic peers..

Looking at the other predictive variables, a measure of external motivation to respond without prejudice was associated with more negative biases towards a fellow employee with autism. This finding adds further support to the concern that people who are primarily externally motivated to avoid appearing prejudiced (rather than because of an intrinsic personal belief in being non prejudiced) may grow to resent the infringement on their freedom and feel increased frustration and reactance, which may

ultimately fuel their prejudices **Brehm (1966)**. This theory of psychological reactance states that individuals have certain freedoms with regard to their behavior. If these behavioral freedoms are reduced or threatened with reduction, the individual will be motivationally aroused to regain them. This suggestion resonates with the findings of the Arts Professional Freedom of Expression survey (2020) - *where more than 8 out of 10 respondents agreed that "Workers in the arts & cultural sector who share controversial opinions risk being professionally ostracised" and "I often feel pressured to self-censor for fear of being 'cancelled' or bullied for not conforming to the orthodoxy"*.

There is evidence that individuals who are not personally motivated to respond without prejudice, can control the expression of prejudiced thoughts in the presence of external motivation (i.e., they were told to suppress the stereotype) **Monteith, Spicer, and Tooman (1998)**. However, these control efforts were associated with high levels of frustration that weren't seen in other participants. One suggestion is that short-term gains (i.e., curtailing immediate expressions of prejudice) could lead to long-term negative outcomes - the classic Rollback effect (i.e., resentment of imposed regulations discouraging prejudice and the escalation of prejudice). Interestingly we found a significant effect of gender in this study. Being male was a significant predictor of negative cognitive attitudes towards autism. Further research is needed to explore the effect of gender on bias.

The design of this study was limited by the fact that we did not compare attitudes to different labels within the same vignette condition. Instead, we were comparing attitudes across 3 separate vignette scenarios. Further exploration of these findings might involve tests of actual behaviour.

Another limitation of the IAT used here was that the words used were positive and negative stereotypes of autistic adults. Using words that were less stereotypical and more descriptive of both groups of adults (e.g., autistic: spectrum, ASD; nonautistic: typical, nonautistic) would avoid priming participants with stereotypes of the target group. Future research should explore attitudes toward autism in samples from other cultures and in other age groups.

Together, these findings show a negative bias in cultural sector workers towards autism and to employees with autism, and suggest that implicit and explicit biases towards autism in the workforce could be one contextual factor related to lower rates of obtaining and maintaining employment among autistic people.

## **Conclusion**

This study suggests that adults working in the Cultural sector hold negative implicit and explicit bias toward autistic adults. These findings may help explain why the employment rate of autistic people in the cultural workplace is so low . The findings suggest that workplaces and other organizations may need to implement interventions to reduce implicit bias, such as those identified in the implicit race bias literature.

## **Materials**

Vignette #1

It is the first day of the quarter and you are sitting in your Humanities course. The professor explains that each student will be randomly assigned to a partner with whom he or she will work on a number of group projects throughout the quarter. Together these group projects will be worth 50 % of your final grade. The professor tells you that you will be working with a student named Kyle. Kyle is in the same year of school as you, (has high functioning autism OR is a typical college student OR no statement) and is of above average intelligence. (Following sentence only included in HFA condition.) Individuals with high functioning autism sometimes demonstrate difficulty with social interactions and appropriate communication. However, most are of average to above average intelligence. As a part of the first group project, you are instructed to choose a contemporary fiction book to compare and contrast to a literary classic. You ask Kyle if he has any ideas, and he immediately states that he would like to use *The Lord of the Rings*. You tell him that you think that is a good idea, but you mention that you are worried because it is more than 1,200 pages, which may be too long for the current assignment. You try to name three other books that you think would be more appropriate. You ask Kyle if he has any additional ideas. In response, Kyle begins a five minute explanation of why he thinks *The Lord of the Rings* is the best choice. Every time you attempt to ask Kyle about another book, he immediately returns to his discussion of *The Lord of the Rings*.

#### Vignette #2

You decide to join a campus club focused on community service and volunteer work. You hope to make friends with someone at the first meeting because you do not know anyone else in the club. When you enter the meeting room, the club president introduces you to another club member named Tim. Tim is the same year in school as you, (has high functioning autism OR is a typical college student OR no statement) and is of above average intelligence. (Following sentence only included in HFA condition.) Individuals with high functioning autism sometimes demonstrate difficulty with social interactions and appropriate communication. However, most are of average to above average intelligence. You introduce yourself to Tim and reach out your hand to shake hands. He quickly responds, "Hi, I'm Tim," without looking up from the club brochure that he is reading, and he does not shake your hand. You try to get to know Tim by asking him what he likes to do in his free time. He responds by pulling out a video game magazine and explaining his favorite video game to you. You attempt to tell him about yourself, but he repeatedly returns to discussing video games and seems more interested in his video game magazine than his conversation with you.

#### Vignette #3

It is move-in day in the dorms and you are carrying some of your belongings into your new room in one of the co-ed suites. Alex, one of your suitemates who lives in the opposite room to yours, walks into the room. Alex is the same year in school as you, (has high functioning autism OR is a typical college student OR no statement) and is of above average intelligence. (Following sentence only included in HFA condition.) Individuals with high functioning autism sometimes demonstrate difficulty with social interactions and appropriate communication. However, most are of average to above average intelligence. You notice that the furniture in the shared living space is arranged in a way that seems to make the space more cramped. A week later, you decide to ask if Alex could help you rearrange the furniture. You start to move around the sofa but Alex gets upset and moves it back to its original position with no explanation. You brush it off and just decide to move around the furniture on your own. Alex sees that the furniture was moved and frantically requests that everything be moved back to the way it was.

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