

**Explicit and implicit attitudes towards people with intellectual disabilities:  
The role of contact and participant demographics**

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## INTRODUCTION

It is now widely accepted that the participation of individuals with intellectual disabilities in community life depends on societal perceptions of them (World Health Organisation, 2001). Cognitions and affect influence behaviour and maintain discrimination against people with intellectual disabilities (Werner, Corrigan, Ditchman, & Sokol, 2012). The present study investigated the association between participant demographics and attitudes towards individuals with intellectual disabilities. However, unlike most studies on this topic to date, this study explored both explicit and implicit attitudes its participants held.

It has been argued that the use of the terms 'explicit' and 'implicit' is more appropriate to describe a measure being used than the attitude under investigation (Fazio & Olson, 2003). They note that an explicit measure necessarily involves overt expression of one's attitude. They further propose that implicit measures assess associations to which the individual lacks introspective access or which people are reluctant to admit or express. Consequently, they caution implicit measures should not be solely regarded as unconscious attitude representations.

Recent research has found that explicit attitudes toward those with intellectual disabilities have improved (Office of Disability Issues, 2011). However, it is questionable whether such observations (usually based on self-report responses) reflect a genuine shift in attitudes. It could just be an increased awareness that prejudiced attitudes towards people with intellectual disabilities are no longer deemed acceptable (Wilson & Scior, 2014; Cummins & Lau, 2003). A more accurate understanding of people's attitudes could result from observing implicit attitudes. If they are positive, it could reflect increasingly positive perceptions of persons with intellectual disabilities. However, should negative implicit attitudes persist, this could indicate a need for further research to inform strategies seeking to redress these.

### **Demographics and explicit attitudes**

Previous research indicates that older individuals are more likely to self-report negative attitudes to intellectual disability (Cuskelly & Gilmore, 2007; Ouellette-Kuntz, Burge, Brown & Arseault, 2010; Yazbeck, McVilly & Parmenter, 2004). Evidence on the role of respondent gender is mixed though (Scior, 2011). Males were more likely to agree with segregation of individuals with intellectual disabilities in the workplace (Burge, Ouellette-Kuntz, & Lysaght, 2007), and to hold more negative views on their sexual rights (Cuskelly & Gilmore, 2007). But, other research has failed to observe such gender differences (Lau & Cheung, 1999; Yazbeck et al., 2004). Higher levels of educational attainment have been shown to correlate with more positive perceptions (Antonak & Harth, 1994; Lau & Cheung, 1999; Ojha, Gupta, Dhingra & Menon, 1993; Ouellette-Kuntz et al., 2010; Yazbeck et al., 2004). Regarding social distance, closer contact to a person with intellectual disabilities is associated with more positive attitudes (Antonak & Harth, 1994; Nosse & Gavin, 1991; Ouellette-Kuntz et al., 2010).

### **Demographics and implicit attitudes**

Wilson and Scior (2014) reviewed implicit attitude research relating to disabilities, focusing on research that used the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998), the most widely used measure of implicit attitudes. Its vulnerability to effects like social desirability is limited (e.g. Banse, Seise, & Zerbes, 2001; Steffens, 2004). Employing a word-sorting task, the target category word, e.g. 'intellectual disability', is first paired with one of the attribute category words, e.g. 'pleasant' or 'unpleasant', and then the other. As part of a within-subjects design, participants categorise pleasant and unpleasant word stimuli, as well as words associated with the target category. The response-time for each word is measured, and an average response-time is calculated for both scenarios. If the average response-time of the *noun-pleasant* pairing is faster than the *unpleasant-noun*

pairing, theory suggests the participant is more likely to hold a positive attitude to the noun studied.

Wilson and Scior (2014) concluded that participants' self-reported, explicit attitudes, which tended to be neutral or positive, were largely uncorrelated with the more negative implicit attitudes found in their study. Enea-Drapeau, Carlier and Huguet (2012) noted caregivers of a person with Down Syndrome were less likely to hold negative implicit attitudes than student and non-student samples. Hein, Grumm, and Fingerle (2011) also observed that contact predicted the cognitive, affective and behavioural components of explicit attitudes but not implicit attitudes. Finally, no significant differences in implicit attitudes towards intellectual disability across demographic categories were found by Proctor (2012). The findings by Hein et al. (2011) and Proctor (2012) are intriguing as they underscore suggestions of an implicit-explicit attitude disparity with regards to demographic characteristics as predictors.

### **Aims**

This study investigated explicit and implicit attitudes to intellectual disability, and examined their relationship in the context of the demographic characteristics of the people that hold these attitudes. The demographic variables explored were: age, gender, educational attainment, closeness, contact frequency.

We hypothesised that negative explicit attitudes to intellectual disability were more likely to be held by participants who: i) were male, ii) older, iii) had a lower level of educational attainment, and iv) had less previous contact with individuals with intellectual disabilities. Also, we predicted any effects of these participant demographics would be smaller for implicit attitudes than for explicit ones.

### **METHOD**

## Participants

Data from a total of 234 UK adult participants were used in this study.. Their ages ranged from 18 to 74 years ( $M = 27.9$  years,  $SD = 11.4$  years), and 154 females accounted for 65.8% of the sample. From the original sample of 297 participants, data for 19 participants were removed (8 were non-UK residents, 4 provided incomplete data, and the job titles of 7 implied higher than usual awareness of intellectual disability, e.g. clinical psychologist). Data cleaning recommendations by Greenwald, Nosek, and Banaji (2003) were followed for the ST-IAT data. Twenty-four incomplete datasets were removed. Nineteen participants' data were removed as they made errors in more than 20% of IAT trials, i.e. they sorted words such as 'terrible' into the 'pleasant' category.

Data were collected during mid-2014. Opportunity sampling was used to recruit participants, including adverts on the authors' institutional research participant pool (open to students, staff and members of the public willing to participate in research) and on Facebook. A £50 retail voucher incentive was offered. Another participant was removed as they had a response time less than 300ms for more than 20 of the 200 trials.

## Materials

An online survey was used to collect the data. Measures used were the *Attitudes Toward Intellectual Disability (ATTID) questionnaire* (Morin, Crocker, Beaulieu-Bergeron, & Caron, 2013) to collect self-report data concerning explicit attitudes toward people with intellectual disabilities, and the single-target IAT (ST-IAT) (Wilson & Scior, 2015) to measure implicit attitudes to intellectual disability. The order of presenting both measures was varied randomly to test for order effects.

The ATTID questionnaire (Morin et al., 2013) measures cognitive, affective and behavioural responses to people with intellectual disabilities. It consists of 67 statements covering five factors: i) *Discomfort*, ii) *Knowledge of Capacity and Rights*, iii) *Interaction*,

iv) *Sensibility (and tenderness)*, and v) *Knowledge of Causes*. The scale measures responses in relation to two vignettes, using a five-point Likert scale (1 = totally agree to 5 = totally disagree, with a neutral mid-point), thus higher scores indicate more negative attitudes. The first vignette describes a man with mild intellectual disability, while the other depicts a man with a high intensity of support needs. The measure's psychometric properties are good and have been described by Morin et al. (2013).

An adaptation of the IAT (Greenwald et al., 1998) was used for this study, the ST-IAT developed by Wilson and Scior (2015), which showed good internal consistency of  $\alpha = .70$  across the 40 test trials. This used only one target concept, i.e. 'intellectual disability', rather than the two used in the classical IAT as there is no obvious complementary target concept to use alongside that of intellectual disability. Accordingly, participants were asked to categorise words associated with 'intellectual disability' into either attribute category ('pleasant' or 'unpleasant') as well as sorting attribute words, e.g. 'happiness' or 'terrible', into these same categories.

Presented across five blocks totalling 200 categorisation trials, there were three practice blocks of 20 trials each and two experimental blocks of 70 trials each. Participants used the 'E' and 'I' keys on their keyboard to categorise pleasant and unpleasant word stimuli. Block four and five enabled counterbalancing, consisting again of 20 practice and 70 experimental trials respectively. The difference in average response times between incongruent pleasant-intellectual disability and congruent unpleasant- intellectual disability associations provides insight into the participant's implicit attitude. For example, if the response time for the first pairing is shorter than for the latter, the participant is said to hold more positive implicit attitudes to intellectual disability. A total IAT score is calculated for each participant, with higher scores indicating a more positive implicit attitude.

Demographic information collected included participants' gender, age, and their highest level of education. In addition, participants specified whether or not they knew someone with an intellectual disability. If they did, details regarding the nature of the relationship (i.e. friend, relative or acquaintance etc.), its degree of closeness, and the frequency of contact were requested. Frequency and closeness were measured using fully anchored 7-point Likert scales (for frequency, 1=less than one time a year to 7=daily or almost daily; for closeness 1 = not at all close to 7 = extremely close).

### **Design & Procedure**

The experiment was run via *Inquisit*, the main platform for timed IAT experiments. Completion of the entire survey took an average of 15 minutes. Employing a within-subjects design, the presentation order of the questionnaire was counterbalanced. The ATTID questionnaire (Morin et al., 2013), congruent ST-IAT test trials, and incongruent ST-IAT test trials (Greenwald et al., 1998) were presented in one of four different orders; demographics always followed last. Ethical approval was granted by the authors' institutional research ethics committee (Project ID: 0960/001).

### **Data Analysis**

SPSS version 22 was used for data analysis. The ATTID and ST-IAT scores were coded, and standardised to produce z-scores. Non-significant Levene test results across all variables indicated homogeneity of variance and permitted parametric analysis. One-way ANOVA tests showed a significant order effect for only the *Discomfort* factor:  $F(3, 228) = 3.98, p = .01$ . A Tukey post-hoc test indicated a significant difference between participants' *Discomfort* scores when the incongruent IAT measure was presented before ATTID ( $M = .33, SD = .92$ ), compared to being presented after ( $M = -.31, SD = .92$ ):  $p = .004$ .

The *Knowledge of Causes* ATTID factor, and IAT had significant skewness and kurtosis scores ( $p < .01$ ). To address this, *Knowledge of Causes* data was log 10 transformed,

while transformations for the IAT data were unsuccessful. The IAT data were therefore analysed in their original form considering Levene, order effect and skewness tests were non-significant.

A one-way ANOVA was conducted to test for order effects between presenting the congruent and incongruent blocks of the SC-IAT, and the ATTID and SC-IAT. There were no significant differences in scores between the presentations of the four batches ( $p > .05$ ), indicating that presentation order had no effect on responses. The demographic variables were regressed against the standardised ATTID factors and ST-IAT scores in a hierarchical manner.

## RESULTS

The mean scores for the five ATTID factors fell between the midpoint and the positive end of the scale (see Table 1). Two-tailed  $t$ -tests revealed that, except for Factor 4, scores were significantly different from the scale midpoint, and thus deemed to indicate positive explicit attitudes.

A one-sample  $t$ -test on the standardised ST-IAT scores was performed ( $M = -.04$ ;  $SD = .30$ ). The result was significant:  $t(233) = -2.06$ ,  $p = .04$ , indicating that the sample typically held a neutral implicit attitude (see Table 2).

- Insert Tables 1 and 2 about here -

### **Relationship between explicit and implicit attitudes**

Post-hoc correlations on ATTID and ST-IAT scores showed that Factors 1, 3 and 5 of the ATTID were negatively correlated with ST-IAT scores (see Table 3), suggesting that lower discomfort, greater willingness to interact, and increased knowledge of causes of intellectual disability are associated with more positive implicit attitudes.

- Insert Table 3 about here -

### Demographics and ATTID scores

Each demographic variable was regressed against each standardised ATTID factor, using a 1% significance level to account for the multiple regressions of five independent variables against each dependent variable.

Demographics were regressed against the ATTID's affective factors, *Discomfort* and *Sensibility*. For *Discomfort*, gender ( $F(1, 230) = 2.04, p = .15$ ) and education were non-significant ( $F(1, 230) = 1.44, p = .23$ ). Age, closeness and frequency of contact to someone with intellectual disability emerged as predictors:  $F(1, 230) = 6.77, p = .01$ ;  $F(1, 230) = 13.60, p < .001$ ; and  $F(1, 208) = 27.8, p < .001$  respectively. These three variables jointly accounted for 15.8% of the variance. Hierarchical regression indicated frequency was the largest predictor, accounting for 12% of the variance (see Table 4). Regarding *Sensibility*, gender, age, and education emerged as non-significant:  $F(1, 230) = 1.44, p = .23$ ;  $F(1, 230) = 3.38, p = .07$ ; and  $F(1, 230) = .90, p = .34$  respectively. Closeness and frequency of contact were significant predictors:  $F(1, 230) = 4.46, p = .04$ ; and  $F(1, 208) = 16.60, p < .001$  respectively. They accounted for 7.7% of the variance. Hierarchical regression showed frequency to be the only significant predictor of sensibility:  $R^2 = .07$ .

For the cognitive ATTID factor *Capacity and Rights*, gender, age and closeness of contact were non-significant:  $F(1, 230) = .68, p = .41$ ,  $F(1, 230) = .01, p = .95$ , and  $F(1, 230) = 1.95, p = .16$  respectively. Education and frequency of contact were significant predictors:  $F(1, 230) = 5.01, p = .03$ , and  $F(1, 208) = 5.82, p = .02$  respectively. These variables reflected 5.3% of the variance, represented by:  $F(2, 207) = 5.75, p = .004$ . For the other cognitive factor, *Causes*, all demographic variables other than age produced non-significant regressions: gender,  $F(1, 103) = 2.84, p = .10$ ; education,  $F(1, 103) = .25, p = .62$ ; closeness,  $F(1, 103) = .13, p = .72$ ; and frequency,  $F(1, 89) = .27, p = .60$ . Age accounted for 3.9% of the variance:  $F(1, 103) = 4.15, p = .04$ .

For the behavioural factor, *Interaction*, education regressed non-significantly, see Table 5:  $F(1, 230) = .54, p = .47$ . But significant regressions were produced for: gender,  $F(1, 230) = 12.20, p = .001$ ; age,  $F(1, 230) = 6.72, p = .01$ ; closeness,  $F(1, 230) = 19.40, p < .001$ ; and frequency,  $F(1, 208) = 23.90, p < .001$ . Each of these were modelled using hierarchical regression:  $F(4, 205) = 12.40, p < .001$ , contributing 10.3% ( $p < .001$ ) non-shared variance in interaction towards those with ID. Closeness, gender, and age each contributed 3.7% ( $p < .01$ ), 3.5% ( $p < .01$ ), and 2.0% ( $p = .03$ ) non-shared variance respectively.

- Insert Table 4 about here -

### Demographics and ST-IAT scores

Finally, each demographic variable was regressed on the standardised ST-IAT scores. All results were non-significant: gender,  $F(1, 232) = 1.69, p = .20$ ; age,  $F(1, 232) = 1.16, p = .28$ ; education,  $F(1, 232) = 2.33, p = .13$ ; closeness,  $F(1, 232) = 2.37, p = .13$ ; and frequency,  $F(1, 210) = .91, p = .34$  (see Table 5).

## DISCUSSION

Participants in the present study typically showed favourable explicit attitudes and neutral implicit attitudes towards people with intellectual disabilities. The positive explicit attitudes observed here may be explained, partly with reference to general improvements in attitudes towards people with disabilities, and partly with reference to the characteristics of the present sample, 72.6% of whom had completed at least undergraduate education. Higher education increases both sensitivity to social desirability and social tolerance generally (Heerwig & McCabe, 2009). In the present study those with lower educational attainments showed lower *Knowledge of Capacity and Rights*, but did not express more negative views on the other ATTID factors, nor did educational attainment affect implicit attitudes.

Men showed more positive attitudes regarding interaction, which differs from previous research which found either no gender differences in explicit attitudes or more

positive attitudes expressed by women (Scior, 2011). Of note, gender had no effect on implicit attitudes in this study. Older participants showed better *Knowledge of Causes*. One might simply attribute this to age but a counterargument would be that the rise of inclusive education should foster improved knowledge about intellectual disability among younger people. Older participants were less favourable towards interaction, concordant with our predictions. However, discomfort decreasing with age was unexpected, and might result from social tolerance increasing as a combination of age and higher education. Of note, participants' implicit attitudes to intellectual disability were similar regardless of age.

The relationship between contact and ATTID responses was as predicted – prior contact, closeness and frequency of the contact relationship, were predictive of participants' explicit attitudes in terms of levels of discomfort, sensibility and interaction. Overall, frequency of contact emerged as the most significant demographic predictor of explicit attitudes. This stands in contrast to Blundell, Das, Potts, and Scior (2016) who found that closeness but not frequency of the contact relationship was individually predictive of social distance to people with intellectual disabilities. Based on these findings, both frequency and closeness appear to be important in understanding attitudes towards people with intellectual disabilities. Overall, the present results suggest that the affective and behavioural dimensions of explicit attitudes are moderated by contact, while the cognitive attitude dimension appears less affected by contact. Of note, none of the contact variables predicted participants' implicit attitudes.

Participants' implicit attitudes correlated weakly with explicit attitudes relating to *Interaction*, and moderately with *Discomfort* and *Knowledge of Causes*. This highlights that while attitudes to intellectual disability people hold at a conscious level may be generally tolerant and accepting, at an unconscious level they are still influenced by societal values that depict disability in negative terms, indicating a need for continued challenging of disablism

and highlighting of the positive contributions people with intellectual disabilities can make to society. In line with Proctor (2012), demography and ST-IAT scores regressed non-significantly, indicating that explicit and implicit attitudes show different patterns regarding participant demographics, and that implicit attitudes cannot be predicted by demography.

### **Limitations**

The sample's characteristics were unrepresentative of the general UK adult population, with participants having higher than average educational attainments (73% were graduates compared to 40% of 25 to 64 year-olds in the UK, and only 1% were over 65 years old compared to 17% of the UK population (Office of National Statistics (ONS), 2013). As this is an opportunity sample, there is also a risk of self-selection bias. Taken together, these limitations suggest a need for caution when generalising the results of this study and a need for further research into the relationship between explicit and implicit attitudes and the effect of participant characteristics on implicit attitudes to intellectual disability.

It is also important to consider that it was not possible to run Inquisit on MAC computers at the time of this study. This limitation has since been addressed, but for the purpose of this study, accessibility was inhibited although it is unlikely that this would have introduced any clear biases.

### **Conclusion**

In summary, sociodemographics predicted some aspects of explicit attitudes to intellectual disability but not implicit attitudes, reinforcing evidence of implicit-explicit attitude differences. These findings may be seen to cast doubt on established perceptions regarding the relationship between participant sociodemographics and their attitudes to people with intellectual disabilities. Alternatively, they may cast doubt on the role of implicit attitudes and whether they do indeed measure an individual's deeply held beliefs or perhaps rather awareness of values held within a given society. Future research should explore this

relationship further and also address the question whether attitude change interventions only affect explicit attitudes or also implicit ones, and whether as one might predict, changes in implicit attitudes will take considerably longer to achieve.

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**Table 1.** *Descriptive statistics for the five ATTID factors*

ATTID Factor	<i>M</i>	<i>SD</i>	<i>df</i>	<i>t</i>	<i>p</i>
F 1: Discomfort	2.00	0.59	229	25.55	< .001
F 2: Knowledge of capacity and rights	1.97	0.44	228	35.61	< .001
F 3: Interaction	2.26	0.62	232	18.18	< .001
F 4: Sensibility or tenderness	2.99	0.80	233	0.23	.816
F 5: Knowledge of causes	2.27	0.50	221	21.58	< .001

**Table 2.** *Distribution of participants across ST-IAT score ranges*

Score description	N	%
Strong negative (-2 to -0.65)	4	1.71
Moderate negative (-0.65 to -0.36)	28	11.97
Slight negative (-0.36 to -0.15)	60	25.64
No preference/neutral (-0.15 to 0.15)	83	35.47
Slight positive (0.15 to 0.36)	37	15.81
Moderate positive (0.36 to 0.65)	20	8.55
Strong positive (0.65 to 2)	2	0.85

**Table 3.** *Correlations between ATTID and ST-IAT scores.*

ATTID Factors	F1	F2	F3	F4	F5	IAT
Discomfort: F1	1	-	-	-	-	-
Knowledge of Capacity and Rights: F2	.37**	1	-	-	-	-
Interaction: F3	.68**	.49**	1	-	-	-
Sensibility: F4	.45**	.11	.29**	1	-	-
Knowledge of Causes: F5	-.10	-.21*	-.15	-.09	1	-
ST-IAT	-.21**	-.07	-.15*	-.03	-.20*	1

\* =  $p < .05$ ; \*\* =  $p < .01$ .

**Table 4.** Results of regressions for demographic variables and contact against each ATTID factor.

	Affective						Cognitive						Behavioural		
	Discomfort			Sensibility			Knowledge of Capacity and Rights			Knowledge of Causes			Interaction		
	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$
Gender	.20	.14	.09	-.17	.14	-.08	.11	.14	.05	-.15	.09	-.16	.47**	.14	.22
Age	-.02**	.01	-.17	-.01	.01	-.12	.00	.01	.00	.01*	.00	.20	-.02**	.01	-.17
Education	-.10	.09	-.08	.08	.09	.06	-.19*	.08	-.15	.03	.05	.05	-.06	.09	-.05
Contact – Closeness	-.11**	.03	-.24	-.07*	.03	-.14	-.04	.03	-.92	.01	.02	.04	-.13**	.03	-.28
Contact - Frequency	-.17**	.03	-.34	-.13**	.03	-.27	-.08*	.03	-.17	.01	.02	.06	-.16**	.03	-.32

\* =  $p < .05$ ; \*\* =  $p < .01$ . Note. Gender: Female = 1, Male = 2.

**Table 5.** *Results of regressions for demographic variables and contact against the ST-IAT.*

	Implicit Association Test Score		
	<i>B</i>	<i>SE</i>	$\beta$
Gender	-.13	.10	-.09
Age	.00	.00	.07
Education	.09	.06	.10
Contact – <i>Closeness</i>	.03	.02	.10
Contact - <i>Frequency</i>	.02	.02	.07

\* =  $p < .05$ ; \*\* =  $p < .01$ .