
People's attitudes to dogs in service: A pilot study of a new 15-point scale

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Interference with and discrimination against service dogs is a significant difficulty for people with disabilities. This research was designed to test a new measure of attitudes to service dogs: The People's Attitudes to Dogs in Service Scale (PADS) to determine whether or not problematic behaviour might be related to tendencies toward dogmatism. An online survey was completed by 34 male and 50 female participants. Participants answered questions about dogmatism and their attitudes to service dogs. Results were statistically significant indicating people with less favourable attitudes towards service dogs were more dogmatic in their attitudes. This suggests that strategies other than public awareness campaigns might need to be considered to change public opinion and behaviour toward service dogs.

In April 2014, Guide Dogs Australia launched 'Take the Lead', an Australia-wide public awareness program aimed at dog owners to ensure their pet dogs are walked on a lead as part of responsible pet ownership. The program was developed in response to a survey that included 250 participants with vision impairment, the majority of whom indicated a lack of awareness by the general public about the way to behave in the presence of a guide dog. In particular, participants described interference with guide dogs (e.g., patting the dog when it was working; offering the dog food) and the inappropriate behaviour of unleashed pet dogs towards guide dogs (e.g., attempting to play or acting aggressively). The survey indicated that 40% of handlers have, at some point, had their guide dogs attacked by another dog in the street. Some of these encounters resulted in injury to the guide dog and often caused considerable distress and anxiety to the guide dog and handler (Guide Dogs NSW/ACT, 2014; Nicholson, Kemp-Wheeler, Griffiths, & Wheeler, 1995). Despite public

awareness campaigns there are still reported incidents in the press about off-leash dogs attacking guide dogs (Georgopoulos, 2015; O'Connor, 2014; Pranesh, 2014).

There is limited research about people's attitudes toward guide dogs in Australia and other developed countries, although there is a wide body of research about attitudes to people with disabilities and the therapeutic psychosocial effects of guide dogs (Coleman, 2013; Koda, Morioka, Kubo, Wada et al., 2011; Miura, Bradshaw, & Tanida, 2002; Hart, Zasloff, & Benfatto, 1996).

Service dog charities have spent considerable time and money on education campaigns in an attempt to reduce the reported problematic behaviour by the general public (Assistance Dogs Australia, 2014; Guide Dogs NSW/ACT, 2014). The campaigns were largely based on the premise that lack of education is the driver of inappropriate public behaviour. Miura et al. (2002) examined the attitudes towards service dogs by 37 British and 39 Japanese college students between the ages of 16 and 20 years. They found that students with positive attitudes toward dogs, regardless of their cultural background, still disapproved of service dogs in some environments such as public food areas (e.g., cafés). The authors suggested that public education about service dogs might be the key to resolving this problem. However, ongoing media reports about pet dog attacks on guide dogs and problematic public behaviour toward guide dogs appear to suggest that the public campaign messages are ineffective. However, an alternative explanation might be that some people remain unwilling to give up their beliefs and opinions about service dogs, dogs in public places, and the impact of their own pets despite education campaigns.

Altemeyer (2002) hypothesised that, for some people, contradicting their belief systems causes fear and psychological disquiet to the extent that new information is discarded. Dogmatism or a tendency to "relatively unchangeable, unjustified certainty" (Altemeyer, 2002) can be a barrier to attitude change. Dogmatic styles of cognition influence the processing of information in a manner that reinforces an individual's current views and attitudes (Ottati, Price, Wilson, & Sumaktoyo, 2015).

Altemeyer (2002) devised a 20-item Dogmatism Scale (DOG) to measure tendencies toward inflexibility of thinking despite the presentation of new information that warrants a rethinking of previously held incorrect or outdated ideas and/or assumptions. For example, he found that those who scored high on the scale were more likely to believe implicitly and unwaveringly in the Bible. Even when inconsistencies were highlighted, their resolve did not weaken. Conversely, people who scored lower on the scale were more likely to be persuaded to change their opinion in light of new information. If dogmatism is a stable trait, then resistance to change could be responsible for resistance to new information. Ehrlich's (1961) study suggested that dogmatism is a significant barrier to learning, and

Gratton Kemp (1962) found that people who are more dogmatic are less likely to be objective in their judgment and evaluation of problems.

Research indicates attitude is a significant predictor of behaviour (Ajzen, 1991; Blue, 1995; Conner & Sparks, 1996; Jonas & Doll, 1996, as cited in Armitage & Connor, 2001). Ajzen's (1991) Theory of Planned Behavior (TPB) suggested that behaviour is governed by intention to act in a certain way, in this case, acting responsibly toward working dogs. Intention to act is dependent on three elements namely: attitudes, norms (personal or social), and perceived behavioural control. The strength of the intention is predicted by the attitude to the behaviour. Norms act as a pressure to perform a desirable act, either pressure personally to control dissonance or a subjective norm, pressure exerted by societal expectation (Koger & Winter, 2010). In a study of 146 college students aged between 17 and 30 years, Ajzen (1991) found that intention to engage in dishonest behaviour was strongly related to attitude, subjective norms, and perceived behavioural control. In addition, intention and perceived behavioural control were significant predictors of behaviour. In support of these findings, a meta-analysis of 185 studies found TPB to be a predictor of intention and behaviour (Armitage & Connor, 2001). The findings hold strong for a variety of behaviours such as: food safety handling (Mullan, Allom, Sainsbury, & Monds, 2015), a meta-analysis of decision making in a medical environment (Thompson-Leduc, Clayman, Turcotte, & Légaré, 2015), opposition to environmental sustainability projects (Read, Brown, Thorsteinsson, Morgan, & Price, 2013), and sunscreen use (Thomson, White, &

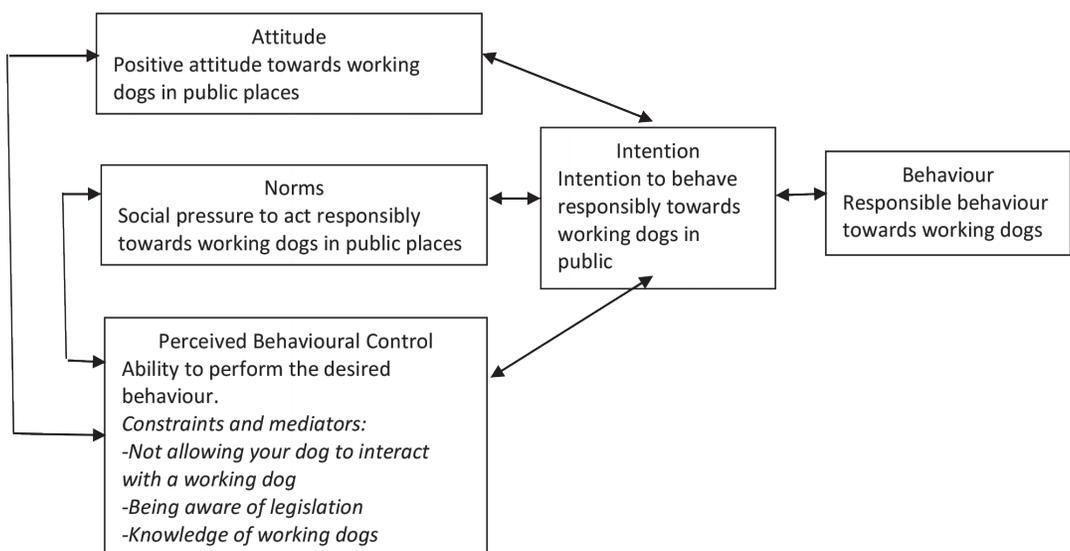


Figure 1. The Theory of Planned Behaviour as it applies to behaviour towards service dogs in public.

Hamilton, 2012). Figure 1 shows the practical application for TPB in relation to attitudes towards service dogs.

If, as research suggests, attitude is the driver of behaviour, then investigating people's attitudes toward guide dogs might lead to an understanding of what influences those attitudes and what drives unacceptable behaviour towards service dogs. With that in mind, the purpose of this research was to design a new measure of people's attitudes to dogs in service. The resulting measure, People's Attitudes to Dogs in Service (PADS), contained 14 items. In addition, K9, a 9-item knowledge sub-scale, was also designed. Both of the new scales were reviewed for face validity by a convenience interest group of seven people (age range 28-72 years; one male and four females without a disability; one female with vision impairment who is a guide dog handler; one female with another disability). They were selected for their experience in disability services. The scales were also peer reviewed by two volunteer third year psychology students at the University of New England, NSW, Australia. The original attitude scale contained 14 items; however, an additional item was suggested by the guide dog handler: 'I think dogs off the leash could be a danger to a service dog or the disabled person that they are with'. It was believed that the agreement option 'Do not know' should be removed to avoid 'fence sitters', resulting in the 15-item multiple choice PADS. Participants indicated their strength of agreement from 1 (*strongly disagree*) to 4 (*strongly agree*), to statements (e.g., 'I like dogs'). It was decided the K9 sub-scale was beyond the scope of this research project, but is critical nonetheless and will form the basis of future research. This pilot study was undertaken to test the new measure of attitudes to service dogs and determine a link between unfavourable attitudes and rigidity of conviction. It was predicted that there would be a relationship between attitudes to service dogs and dogmatism. It was not expected that there would be a gender difference on either construct.

METHOD

Participants

Eighty-four participants (50 females, 34 males, $M_{age} = 43.96$ years, $SD = 13.90$, range: 20-79 years), were recruited from the University of New England (UNE) and the researchers Facebook. An advertisement was placed on the UNE website and on Facebook inviting individuals, currently living in Australia, to complete an anonymous questionnaire. Consent and agreement to participate in the study was obtained prior to the commencement of the questionnaire.

Materials

The DOG Scale (Altemeyer, 2002) was used to assess dogmatism. On a Likert scale participants indicated their strength of agreement from 1 (*very strongly disagree*) to 9 (*very strongly agree*), to statements (e.g., ‘My opinions are right and will stand the test of time’). Altemeyer (2002) reported good internal reliability ($\alpha = .90$) from using a sample of university students ($n=781$). The PADS Scale assessed attitudes to service dogs being in public places (e.g., restaurants, taxis, public transport). On a Likert scale participants indicated their strength of agreement from 1 (*strongly disagree*) to 4 (*strongly agree*), to statements (e.g., ‘I think that service dogs should be welcome in restaurants’) and (‘If I was a taxi driver I would refuse to take a passenger with a service dog’).

Procedure

The Human Research Ethics Committee at UNE approved the study and an anonymous online Qualtrics (2011) survey was constructed using PADS, the DOG Scale, age, gender, and participant instructions. The survey link was published online. The data were analysed using the Statistical Package for Social Sciences (SPSS, version 22, 2013).

Results

The DOG Scale returned a Cronbach’s alpha of .88. The PADS Scale suggested good internal reliability ($\alpha = .75$). The worst performing item was question 4 (‘I would pat a guide dog’) with a negative item total correlation of $r(84) = -.145$, which when excluded α increased to .81. The best performing item was question 8 (‘I would allow a service dog in my car’), $r(84) = .650$. All other items showed very little variability indicating largely homogenous items. Table 1 shows a summary of the results.

Table 1. Statistical summary: The Dogmatic Scale (DOG), People’s Attitude to Dogs in Service Scale (PADS), and Cronbach’s alpha.

Scale	Male ($n=34$)		Female ($n=50$)		Total ($n=84$)		Cronbach’s α
	M	SD	M	SD	M	SD	
DOG	60.68	20.91	60.84	19.80	60.77	20.14	.88
PADS	51.24	5.18	53.46	4.77	52.56	5.03	.75

The criterion for statistical significance was an alpha level of .05 (two-tailed). An independent samples *t* test was used to compare males and females on the DOG Scale. Levene's Test for Equality of Variance was not significant ($F = 0.37, p = .544$), indicating homogeneity of variance was not violated (i.e., variability between the two groups, male and female, were equal at all levels of the independent variable). The *t* test was not significant, $t(82) = -0.04, p = .971$, indicating no difference between males and females on dogmatism. The effect size was small, $d = -0.01, 95\% \text{ CI } [-0.44, 0.43]$. An independent samples *t* test was used to compare males and females on PADS. Levene's Test was not significant ($F = 0.44, p = .511$), indicating homogeneity of variance was not violated. The *t* test was significant, $t(82) = -2.03, p = .046$, indicating a significant difference between males and females on attitudes to service dogs. The effect size was small to medium, $d = 0.44, 95\% \text{ CI } [0.00, 0.88]$.

To assess the size and direction of the relationship between the DOG Scale and PADS Scale, a bivariate Pearson's product-moment correlation coefficient (*r*) was calculated. The correlation was small to medium in size, negative and significant, $r(84) = -.261, p = .017$, indicating that 7% of the variability in PADS scores could be explained by dogmatism.

Discussion

This research was conducted to test a new attitude scale (PADS) which measures people's attitudes towards service dogs. It also sought to determine the extent, if any, of a link between participants' attitudes towards service dogs and their level of dogmatism. There was no difference between males and female participants on dogmatism, but females held significantly more favourable attitudes to service dogs. Interestingly, the data indicated that less favourable attitudes to service dogs were related to a participant's level of dogmatism although the effect size was not large. The rest of the variance could possibly be explained by the participant's lack of knowledge about the way to behave in the presence of service dogs and lack of knowledge about rights of access legislation for service dogs. These findings are consistent with Miura et al. (2002) who found British guide dog owners were denied access to eating establishments from time to time. The knowledge hypothesis notwithstanding, the most likely reason for the small effect size is the sample size. The sample was small at $n=84$ and it is reasonable to assume that with a larger sample, the magnitude of the effect would be greater. If the study were to be replicated applying a priori power analysis (G*Power 3) (Faul, Erdfelder, Lang, & Buchner, 2007) then it would indicate the total sample needed to detect a larger effect size with the appropriate level of power.

The PADS Scale appeared to have good psychometric properties with a Cronbach's alpha (internal consistency) of .75. Nunnally (1978) suggested in the early stages of research, an alpha level of .5 is acceptable. Item 4, 'I would pat a service dog in the street if I saw one' was the weakest item at $\alpha = .7$; without it the Cronbach's alpha would have been .8. This question is ambiguous and might not reflect the attitude intended to be measured, 'It is not okay to touch a working guide dog'. Re-wording the question to read 'It is not okay to touch a working guide dog' might resolve the problem. A further limitation was the number of items. The study would have benefited from approximately 20 items with more than one item relating to direct interference with service dogs. To obtain convergent evidence of an attitude, it is preferable to ask the same questions in different ways to measure consistency of response. The results of the current study indicate a third of the participants thought it was okay to pat a guide dog. A second question to corroborate this statistic would have added further evidence that people still think it is okay to interfere with a service dog even after a nationwide campaign to reduce the behaviour.

The small sample in the current study ($n=84$) is a limitation and might have contributed to the small effect size of the outcome. The small number might also be a misrepresentation of the general population. It is a convenience sample of university students and Facebook contacts of which 90.5% were 25 years and over. Using a university sample, known as the College Sophomore Problem, does not nullify research but simply makes it incomplete (Stanovich, 2007). The demographic of a UNE sample would typically be middle-class mature-age students, university educated, professionals. This assumption is based on Australian Bureau of Statistics (ABS) (2013) findings that mature-age university students are predominantly nurses, university lecturers, tutors, and teachers. Thus, the demographic of this study would have probably influenced the results. Schoon, Cheng, Gale, Batty, and Deary (2010) found socioeconomic status to affect social perception. Their large study of nearly 9000 people suggested that educational attainment and socioeconomic status are positively correlated with more open-minded, tolerant, and liberal social attitudes across a variety of such areas as antiracism, social liberalism, and gender equality. This study does not specifically mention tolerant attitudes towards people with disabilities or their assistance animals; however, people are typically consistent and coherent in their attitudes (Festinger, 1957). In summary, the population in this study is likely to be more sympathetic and open-minded than a more diverse sample. A replication of the study with a broader sample demographic including other socioeconomic groups is likely to include people with less tolerant and more dogmatic cognition styles, possibly resulting in a larger effect size.

The results of the current study indicate further research about attitudes and behaviour towards service dogs is required. Interference with service dogs continues within this sample with 30% of the participants believing it is acceptable to touch a working service dog, and 12% believing that off-leash dogs pose no threat to service dogs and their handlers. In addition, those people with a tendency toward rigid, dogmatic attitudes held more negative attitudes towards service dogs. Studies have shown attitude is a strong predictor of behaviour (Ajzen, 1991; Koger & Winter, 2010; Mullan et al., 2015); moreover, people with dogmatic styles of cognition are more resistant to noticing and applying new information (Altemeyer, 2002; Gurney, Mckeown, Churchyard, & Howlett, 2013; Ottati et al., 2015).

If lack of knowledge is mediating the relationship between attitude and behaviour, then knowledge of the way to behave in the presence of a service dog could be taught. If dogmatic attitudes are the mediating variable between people's attitudes towards service dogs and behaviour, then it might suggest people are aware the campaigns tell them it is unacceptable to interfere with service dogs, but rigidity of thinking is stopping them from accepting the message. The demographic of this study are educated and middle class, and, according to the research, should be more sympathetic, liberal, and open-minded. However, the findings do appear to support that.

A revision of the PADS Scale is needed with additional items directly related to interference with service dogs and the re-wording of item 4. Items need to ask the same questions but in a slightly different way to ensure consistency of response. It might be beneficial that an interest group evaluates the items in the PADS and the K9 (knowledge scale). A pilot study to test the scales would ideally include a sample of at least 100 participants. An item analysis would allow for the rejection of poor performing items (Shum, O'Gorman, Myers, & Creed, 2013). The revised PADS, K9, and the DOG could be used to conduct a mediation analysis. This will determine whether or not behaviour (outcome) can be predicted by attitude or is influenced (mediated) by knowledge or dogmatism. A priori G*Power 3 analysis (Faul et al., 2007) would determine the size of the sample needed for the desired effect size at the appropriate level of power. The mediation models in Figures 2 and 3 show the mediated pathways of the hypotheses of a further study.

By examining the direct effect of attitude on behaviour whilst controlling for knowledge/dogmatism, the indirect effect of attitude through knowledge/dogmatism and the total effect of attitude on behaviour, causation might be implied. In summary, further research might find people's negative behaviour towards service dogs is caused by their lack of knowledge. Alternatively, it might be due to their unwillingness to change their attitude despite new information. If people are lacking knowledge, then the 'Take the Lead'

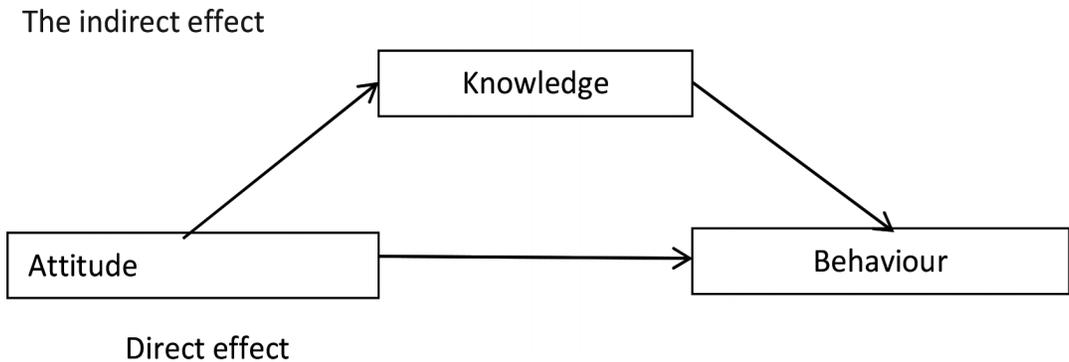


Figure 2. Attitude as a predictor of behaviour, mediated by knowledge.

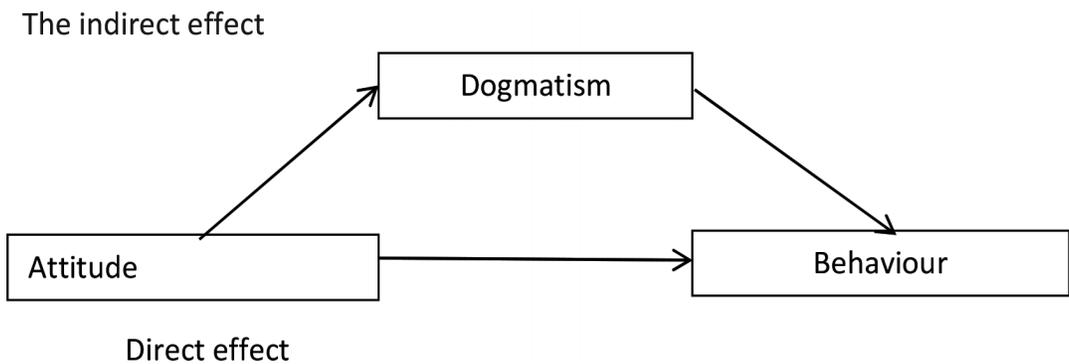


Figure 3. Attitude as a predictor of behaviour, mediated by dogmatism.

campaign might need to be repeated. However, if dogmatism is the reason, then a different campaign strategy could be required.

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