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Bibliographic Citation

Mohr, P., Howells, K., Gerace, A., Day, A., & Wharton, M. (2007). The role of perspective taking in anger arousal. *Personality and Individual Differences*, 43(3), 507–517. <https://doi.org/10.1016/j.paid.2006.12.019>

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The role of perspective taking in anger arousal

Philip Mohr ¹

Kevin Howells ^{1, 2}

Adam Gerace ¹

Andrew Day ^{1, *}

Michelle Wharton ¹

¹Centre for Applied Psychological Research, University of South Australia, North Terrace,
Adelaide, 5000 SA, Australia

²Nottingham University, School of Community Health Sciences, Division of Psychiatry,
Duncan MacMillan House, Porchester Road, Nottingham, NG3 6AA, United Kingdom

* Corresponding author. Tel.: +61 88302 1008; fax: +61 88302 2956. E-mail address:
andrew.day@unisa.edu.au (A. Day).

Abstract

Although there are strong grounds to expect that perspective taking deficits are associated with anger arousal following an interpersonal provocation, there has been little research directly testing this hypothesis. In this study, 636 volunteers were asked to rate their likely reactions to two brief video representations of potentially anger arousing social transgressions. Results confirm the relationship between dispositional perspective taking and the likelihood of anger arousal following an interpersonal provocation. Perspective taking was also predictive of trait anger (negatively) and of the means of control and expression of anger. Associations between personal distress and anger measures indicate the possible influence of the intensity, regulation, and direction of emotion on anger.

Keywords: Anger; Perspective taking; Empathy

1. Introduction

Although the emotion of anger has been the subject of increasing theoretical analysis and clinical application in the last 15 years, the empirical literature investigating the nature of anger remains relatively scant, particularly when compared with the published literature on other negative emotions such as anxiety and depression (Kassinove, 1995). At the same time, the clinical application of existing theoretical models of anger has burgeoned, arguably at a faster rate than the fundamental research required to support such an application. For example, anger is widely considered to be a potential contributing factor to aggression (e.g., Novaco, 1994; Novaco, 1997), and comparative studies suggest that prison inmates, violent offenders in particular, score higher on measures of anger experience and expression than other members of the community (Mills, Kroner, & Forth, 1998; Spielberger, 1991). One of the ways in which anger management programs aim to help offenders and other participants to act less aggressively is by changing the ways in which they perceive interpersonal provocation. Perceptions of another's provoking behaviour are reframed in treatment in ways that are thought to be less likely to lead to angry cognitions and arousal. What is less well understood is the way in which individual differences, such as perspective taking, influence those interpretations of behaviour that lead to anger arousal.

The term "perspective taking" is used here to denote the tendency or ability of an individual to consider a situation from another's point of view and has been distinguished both theoretically and empirically from affective or emotional empathy (Davis, 1980; Hogan, 1969). Davis (1983a) has provided the most widely accepted definition of perspective taking as "the tendency to spontaneously adopt the psychological point of view of others" (pp. 113–114; see also Bernstein & Davis, 1982; Davis, 1980, 1983b; Davis, Hull, Young, & Warren, 1987; Davis & Oathout, 1992), implying that perspective taking is a skill that involves a number of cognitive processes. In his original validation work, Davis (1980, 1983a) differentiated perspective taking from other possible empathic responses that have been documented in the literature (e.g., Hoffman, 1978; Stotland, Mathews, Sherman, Hansson, & Richardson, 1978) including empathic concern (emotional empathy), personal distress (proneness to negative affect when exposed to arousal inducing situations such as emergency situations), and fantasy (the capacity for imaginative involvement in fictional situations).

Perspective taking skills might inhibit angry responses to provocation in at least two ways. First, they might inhibit anger arousal directly by decreasing the likelihood that

provocations will be perceived in ways that lead to blame. A number of studies have investigated the importance of the types of attributions and appraisals made in potentially anger provoking situations. Ferguson and Rule (1983) suggested that the attributions an individual makes when involved in an interpersonal interaction can mediate his or her subsequent anger experience and anger related reactions. They argued that in interpersonal interactions in which an individual has in some way been harmed, he/she undertakes attributional work to understand whether what occurred was the result of behaviour from the other person that was accidental or deliberate, foreseeable or unforeseeable, and malevolently or non-malevolently intended, in creating a causal framework of events. McAuley and Shaffer (1993) reported the implication of external attributions of control in the generation of anger. Smith and colleagues have argued for the explanatory power of the appraisals individuals make of a situation and their central meaning (core relational theme) in emotional experience. According to this model, the appraisal of an event as important and interfering with personal goals and of the other individual in an interaction as accountable for the event underlies the core relational theme of other-blame that elicits the experience of anger (Smith & Lazarus, 1993; Smith, Haynes, Lazarus, & Pope, 1993). The relevance of attributions of hostile intent and subsequent evaluations of blame for subsequent anger experience and angry-aggressive behaviour are well established for both adults and juveniles (Dodge & Schwarz, 1997; Hazebroek, Howells, & Day, 1999).

More recent empirical work has demonstrated that in situations involving interpersonal transgression, perspective taking ability tends to lead to more relationship enhancing outcomes such as forgiveness. Zechmeister and Romero (2002) found that participants who forgave others following situations when they felt angered or hurt were more likely to exhibit perspective taking in their narratives. Forgiveness within this study was associated with lower state anger as well as lesser attributions of responsibility and deliberateness to the actions of the other individual (see also Konstam, Chernoff, & Deveney, 2001). This suggests that perspective taking leads to a series of assessments that result in inhibition of more negative responses in favor of more relationship restoring behaviour. Moreover, an empathic set may be associated with a shift in attributions for another's behaviour – more situational and less dispositional – to resemble more closely those attributions individuals make for their own behaviour (Regan & Totten, 1975).

A second way in which perspective taking might inhibit anger arousal is in terms of the ability of high-perspective takers to maintain a high level of cognitive functioning when

aroused by an interpersonal provocation. Richardson, Green, and Lago (1998) have reported experimental support for this process, placing their findings within Zillmann's (1988) cognitive excitation theory of anger, which suggests that arousal in response to a threat interferes with higher level cognitive functioning and thereby weakens inhibition against aggression. Zillmann (1983) suggested that, at extreme levels of arousal, the "cognitive mediation of behaviour is expected to be greatly impaired" (p. 94). Likewise, Tyson (1998) has suggested that high-levels of anger can result in cognitive systems "being overwhelmed" (p. 145). This explanation is also consistent with Baumeister's (1990) work on self-regulation breakdown, which suggests that under certain conditions, such as a state of negative affective arousal, individuals experience a state of cognitive deconstruction characterised by a disengaging from the self-system.

If it is accepted that perspective taking deficits may contribute to the likelihood or intensity of anger in response to a provocation, it is also conceivable that perspective taking deficits influence anger arousal differently according to different contexts or types of provocation. For example, the effects of perspective taking on anger may be more pronounced in situations that are more cognitively complex: for example, situations where intent is ambiguous. This suggestion is consistent with the findings of Hazebroek et al. (1999) that differences between individuals high and low in trait anger in anger aroused by a provocation and blaming of the provoker were greater in situations where the intent of the provoker was more ambiguous. Similarly, it can be argued that the effects of differences in perspective taking will be more apparent when the intent of a provoker is more ambiguous, and thus more open to interpretation.

The aim of this study was to examine the links between perspective taking and anger arousal following interpersonal provocation at differing levels of ambiguity of intent. It was hypothesized that greater individual differences in perspective taking ability would predict lesser anger following an interpersonal provocation. The relationship of perspective taking to trait anger and the way anger is experienced was also examined.

2. Method

2.1. Participants

A sample of 636 South Australian undergraduate student volunteers (382 female, 248 male, 6 of unknown gender) of an Adelaide university participated in the study. The mean age of participants was 22.84 years ($SD = 7.29$; $Range = 17-57$).

2.2. Design and procedure

The study employed two experimental conditions (low vs high-ambiguity); within each condition, participants watched two video-taped vignettes of interpersonal events – the first in a car park, the second in a bar – involving a possible anger provocation. After each vignette, respondents completed measures of attributions, anger related appraisals, and self-reported anger in response to that vignette. Participants also completed measures of trait anger, anger expression, anger control, and empathy. Groups of participants were randomly assigned to either the low-ambiguity or high-ambiguity condition; voice-over narration to the video-tapes provided instructions and elementary explanations of the events depicted.

3. Materials

3.1. Video vignettes

Interpersonal provocations were depicted in four video vignettes involving two events (a social transgression in a car park, and being kept waiting in a bar) presented at each of two levels of apparent intent (low and high-ambiguity). All vignettes were filmed from the point of view of an unseen protagonist, so that the camera served as the eyes of the participant. This approach was designed to minimise reliance on a participant's ability to take the perspective of a character in a film.

The car park vignette, of approximately 45 s duration, was previously used by Hazebroek et al. (1999), though with a different narrator. It depicts waiting for a car to leave a parking space, which is subsequently abruptly occupied by a white van with a male driver. In the high-ambiguity version, the driver – who is seen in profile in both versions – does not look toward the camera; in the low-ambiguity version, the driver performs a rude one-finger gesture as the vehicle comes to a halt. The bar vignette, of approximately 90 s duration, depicts waiting to be served at a quiet bar while a barman polishes glasses at the far end of the bar. In the high-ambiguity version, the bartender does not look toward the camera from the commencement of

the scene until he approaches it at the scene's conclusion; in the low-ambiguity version, he looks toward the camera for several seconds in the middle of the wait, but continues polishing glasses until his approach at the scene's conclusion.

3.2. Measures relating to the vignettes

3.2.1. Attributional and appraisal questions

For each vignette, participants provided ratings of the extent to which they attributed cause, controllability, and intent to the other. They also rated their agreement with appraisals that “it was only a small thing”, “it was not what I expected”, “it was obvious who/what was responsible”, and “I don't blame the [other]”. These items were designed to address, respectively, the appraisal components of importance, interference with personal goals, and accountability and the core relational theme of other-blame considered important to anger (Smith & Lazarus, 1993; Smith et al., 1993). The attribution of intent served also as a check for the experimental manipulation of ambiguity. All items employed 7-point rating scales.

3.2.2. Self-reported anger

Self-reported anger in response to a vignette was measured by means of an 8-item scale. The items addressed similar responses to those of the State Anger scale of Spielberger's (1999) State-Trait Anger Expression Inventory (STAXI-2), but differed from that scale in that they were expressed in terms of anticipated, rather than present, feelings. Examples of items are “I would feel furious” and “I would feel like hitting something”. These items employed 4-point response scales from not at all to very much so.

3.3. Trait measures

The Trait Anger, Anger Expression, and Anger Control scales of the State-Trait Anger Expression Inventory-2 (STAXI-2; Spielberger, 1999). The State-Trait Anger Expression Inventory-2 is a 57- item self-report measure which assesses state anger, trait anger, and styles of anger expression and control. All but the State Anger measure were administered. The Trait Anger scale (T-Ang) measures an individual's general propensity to experience anger and its

concomitant components over time. Alpha coefficients above .80 were reported in normative data collection (Spielberger, 1999).

The Anger Expression and Anger Control scales measure the individual's characteristic style of responding to the experience of anger. The Anger Expression-Out scale (AX-O) assesses the frequency of outwardly-expressed behaviour when angered, while the Anger Expression-In scale (AX-I) assesses the frequency of suppression of anger experience. Higher scores on these scales are indicative of more maladaptive responses to anger. By contrast, the Anger Control scales measure more constructive approaches to the handling of anger: The Anger Control-Out scale (AC-O) assesses the respondent's control of outward anger expression, and the Anger Control-In scale (AC-I) assesses the respondent's ability to use calming techniques when angered. Alpha coefficients reported by Spielberger (1999) for the anger expression and control scales in normative data collection ranged from .73 to .93. All items employed 4-point rating scales from almost never to always.

The Interpersonal Reactivity Index (IRI; Davis, 1980). The Interpersonal Reactivity Index (Davis, 1980) is a 28-item self-report scale that measures four components of dispositional empathy. The Perspective Taking (PT) scale assesses the individual's tendency to adopt the perspective of other people and to see things from their point of view. The Empathic Concern (EC) scale assesses the individual's tendency to experience feelings of sympathy and concern for others. The Fantasy (FS) scale assesses the tendency of individuals to involve themselves imaginatively in fictional situations and to identify with fictitious characters. The Personal Distress (PD) scale assesses the tendency to experience feelings of anxiety and panic in emergency or emotional interpersonal situations. In Davis's (1980) original validation study, alpha reliability coefficients for all scales were reported to be above .70. All IRI items employed 5-point rating scales from describes me very well to does not describe me well.

4. Results

Preliminary data-screening led to the identification and removal of 15 multivariate outliers by Mahalanobis distance, with $p < .001$, and 4 univariate outliers ($z > 3.29$). All outliers had self-reported anger scores of 32 – the scale maximum – for one or both scenarios, apparently due to frivolous responding; their removal resulted in approximately normal distributions on these variables. The remaining 617 cases were included in subsequent

analyses, subject to minor omissions necessitated by missing data. Cronbach's alpha reliabilities exceeded .71 for all scales, including self-reported anger: .79 (car park) and .84 (bar). Table 1 shows sample means and standard deviations of all individual difference scale scores. Members of the two experimental groups did not differ by age or household income, though women were under-represented in the low-ambiguity condition; gender was controlled for in all subsequent analyses.

[Insert Table 1 about here]

4.1. Attributions, appraisals, and manipulation check

The effect of the manipulation of ambiguity was assessed by two-way (condition, gender) ANOVAs. There was a significant effect for the manipulation for both car park, $F(1,603) = 35.52, p < .0005$, and bar scenarios, $F(1,606) = 412.61, p < .0005$ on ratings of the likelihood of having been “seen” by the provoker. Partial correlations, with ambiguity condition and gender controlled for, were calculated for each IRI subscale score and each attribution or appraisal (averaged for the two scenarios). Only three of the 24 correlations were significant: Perspective taking was significantly positively correlated with not blaming the other ($r = .17, p < .001$) and with viewing the incident as a small thing ($r = .20, p < .001$), and personal distress had a significant negative association with the latter variable ($r = .13, p < .001$); alpha levels were set at .002 by Bonferroni adjustment for the number of analyses.

4.1.1. Self-reported anger

Self-reported anger (SRA) scores for the two scenarios were summed and used as a dependent variable in a multiple regression analysis with the four IRI subscale scores, age, gender, and ambiguity as predictors at the first step. The analysis explained 8.2% of population variance, $F(7,599) = 8.83, p < .0005$. The subsequent addition of a term for the interaction of perspective taking (mean centered) and ambiguity did not significantly increase variance explained, $F(1,598) = .26$, and the interaction term did not significantly predict SRA, $t = .51$. Table 2 shows the results of the hierarchical multiple regression.

[Insert Table 2 about here]

4.2. *Anger scales*

The prediction of respondents' dispositional responses to anger was addressed in five standard multiple regression analyses. Trait anger, anger control-in, anger control-out, anger expression-in, and anger expression-out were each regressed onto the four IRI subscale scores, age, gender, and ambiguity: the latter to control for any possible influence of experimental condition on responses to the dispositional measures. Table 3 shows the standardized regression coefficients and model statistics.

In all cases except anger expression-in, perspective taking was the strongest predictor of anger score. Perspective taking was negatively associated with trait anger and anger expression (in and out) and positively with anger control (in and out). Personal distress, the strongest predictor of anger expression-in, was significantly associated with each anger score bar anger expression-out, the direction of association being opposite to that of perspective taking in each case. The associations for fantasy were in the same direction as those for personal distress, but were only significant for trait anger and anger expression (in and out), and empathic concern had a significant association (negative) with anger expression-in only. Of the remaining variables, increasing age was associated with more anger control-in and less anger control-out and being male was associated with more anger control-out and anger expression-in.

[Insert Table 3 about here]

5. Discussion

The findings of this study confirm the relationship between dispositional perspective taking and the likelihood of anger arousal following an interpersonal provocation. Participants with a lesser tendency to take the perspective of others reported higher levels of probable anger in response to both scenarios presented: being cut off for a parking space by another driver and being kept waiting for service by a bartender. To the extent that people's reports of their probable actions correspond to their actual response tendencies, these findings suggest a clear

link between perspective taking and anger as a response to a provocation. Although participants registered significantly higher self-reported anger scores in response to the less ambiguous provocation, there was no indication that the effect of the individual difference variable was more pronounced when intent was ambiguous (Hazebroek et al., 1999). The absence of such an interaction suggests that perspective taking may exert a general rather than a conditional inhibitory effect on anger. As indicated by the associations with appraisal and attribution items, that effect may include the assignment of less importance to a provocation and less blame to an antagonist.

The potential importance of perspective taking to the understanding of anger was further illustrated by the emergence of that variable as a prominent predictor of both trait anger and manner of anger expression and control. The tendency to take another's perspective was associated with a lesser inclination to anger, a lesser inclination to the expression of anger – either by lashing out or by bottling it up – and a greater inclination to the control of anger: both the feelings and the urge to express them. The overall picture thus painted of individuals who are relatively indisposed to viewing matters from another person's standpoint is of individuals who are more likely to feel affronted and to blame the transgressor, more prone to anger and, when it happens, more inclined to act it out or be troubled by it.

The effects noted for perspective taking should also be considered alongside those of the other IRI subscales. Empathic concern, personal distress, and fantasy scale scores were included in the analyses primarily to enable us to differentiate the effects of perspective taking from those of other manifestations of empathy, although fantasy – the tendency to identify with fictitious characters in films and other media – had an additional justification in allowing us to control for individual differences in participants ability to imagine experiencing the events depicted in the scenarios. The significant positive association of fantasy with self-reported anger appears to confirm some dependence of the scenario method on a viewer's imagination for its effect. A similar effect for personal distress on self-reported anger suggests the tendency of that measure to tap emotional intensity. In predicting scores on the anger scales, the effects of personal distress and fantasy, where significant, were again in the same direction and opposed to those of perspective taking. The association of fantasy with trait anger and anger expression-in appears to be consistent with observations linking fantasy to susceptibility to emotional responding (Davis, 1983a), though the possibility that the dispositional anger responses were themselves influenced by reactions to the scenarios cannot be discounted. The effects for personal distress can be summarised as a greater propensity for anger and its internal

expression and a lesser propensity for control of angry feelings and the urge to express them. Overall, the effects observed for personal distress on self-reported anger and the dispositional anger measures are consistent with the depiction of that variable as associated with emotional intensity, a relative lack of emotional regulation (Eisenberg et al., 1994), and an inward focus (Batson, Early, & Salvarani, 1997).

Of equal interest are the effects of the emotional analogue of perspective taking, empathic concern. The fairly weak negative association of empathic concern with anger expression-in complements that of perspective taking and is therefore relatively unremarkable. Elsewhere, the effects of empathic concern provide no grounds for a belief that the importance of emotional empathy might approach that of cognitive empathy in the prediction of anger.

The effects noted for the other IRI subscales help to place those of perspective taking in context. Although effect sizes were generally small, perspective taking was associated with the strongest effects on four of the five trait measures of anger related responses and the measure of self-reported anger. As well as establishing a link between perspective taking and anger, the findings point to this cognitive variable as a possible moderator of angry reactions to a transgression, although the accuracy with which self-reported anger represents actual responding is not known. The findings are not, however, able to cast much light on the likely mechanics of the link between perspective taking and angry responding. Perspective taking was not associated with attributions of cause, controllability, or intentionality of a transgression and was only weakly associated with the tendency to downplay its significance and to withhold blame. This pattern of associations offers little support for the view that the effects of perspective taking on anger are likely to be substantially mediated by attributions and appraisals of the anger provoking stimulus. The question of underlying mechanisms clearly requires more detailed study.

6. Conclusions

The relationship of perspective taking to self-reported anger in response to a social transgression, to trait anger, and to the expression and control of anger is likely to be of interest to those involved in the design and delivery of interventions to reduce anger related aggression. At present, perspective taking deficits are probably addressed to some degree in the cognitive biases component of anger treatment, where unrealistic and invalid, anger inducing cognitions and appraisals become the focus for change. Indeed, asking a question such as “How might

another person have seen this situation?’’ is a common technique in cognitive behavioural therapy for undermining habitual and dysfunctional patterns of thinking. Perspective taking deficits per se, however, are rarely the focus of sustained therapeutic attention. The possibility that highly angry individuals might find being asked to shift perspective an unfamiliar and difficult task suggests that developing techniques to enhance perspective taking skills should be a high priority for the future development of anger treatments.

Acknowledgement: This research was supported by a grant from the Australian Research Council (DP0452675).

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Table 1

Means and standard deviations of scale scores

Scale	Mean	Standard deviation
IRI fantasy	16.60	5.39
IRI personal distress	11.73	4.71
IRI perspective taking	17.67	4.63
IRI empathic concern	19.94	4.59
STAXI-2 trait anger	20.03	4.91
STAXI-2 anger expression – in	17.55	4.48
STAXI-2 anger expression – out	16.50	3.74
STAXI-2 anger control – in	21.25	4.75
STAXI-2 anger control – out	22.31	4.64

Table 2

Hierarchical multiple regression for the prediction of self-reported anger

Predictors	<i>B</i>	S.E. (<i>B</i>)	β	<i>t</i>
<i>Main effects only</i>				
Intercept	16.13	1.24		13.07***
Age	-.02	.02	-.03	-.71
Gender	-.38	.39	-.04	-.98
Fantasy	.09	.03	.11	2.58*
Empathic concern	-.01	.05	-.01	-.30
Perspective taking	-.20	.04	-.21	-4.80***
Personal distress	.08	.04	.09	2.16*
Ambiguity condition	1.28	.35	.15	3.68***
<i>Main effects + interaction</i>				
Intercept	17.11	2.28		7.52***
Age	-.02	.02	-.03	-.74
Gender	-.38	.39	-.04	-.98
Fantasy	.09	.03	.11	2.59*
Empathic concern	-.02	.05	-.02	-.33
Perspective taking	-.25	.11	-.27	-2.26*
Personal distress	.08	.04	.09	2.13*
Ambiguity condition	1.28	.35	.15	3.67***
PT – ambiguity interaction	.04	.07	.06	.51

* $p < .05$.** $p < .005$.*** $p < .0005$.

Table 3

Multiple regression statistics for the prediction of anger scale scores

	Trait Anger β	AC-I β	AC-O β	AX-I β	AX-O β
<i>Predictors</i>					
Age	-.04	.14***	.01	-.07	-.14**
Gender	-.05	-.07	-.17***	-.12*	.04
Fantasy	.15***	-.01	-.05	.11**	.10*
Empathic concern	-.02	.06	.08	-.14**	.03
Perspective taking	-.26***	.26***	.29***	-.10*	-.29***
Personal distress	.16***	-.14**	-.18***	.25***	.08
Ambiguity condition	.00	-.01	-.03	-.01	.06
<i>Model statistics</i>					
Adjusted R^2	.12	.14	.15	.14	.12
F	13.01***	15.02***	16.44***	14.65***	12.42***

Note: AC-I, Anger Control-In; AC-O, Anger Control-Out; AX-I, Anger Expression-In; AX-O, Anger Expression-Out. From the state-trait anger expression inventory-2 (STAXI-2; Spielberger, 1999).

* $p < .05$.

** $p < .005$.

*** $p < .0005$