Uncertainty and the Influence of Group Norms in the Attitude-Behaviour Relationship

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Abstract

Two studies were conducted to examine the impact of subjective uncertainty on conformity to group norms in the attitude-behaviour context. In both studies, subjective uncertainty was manipulated using a deliberative mindset manipulation (McGregor, Zanna, Holmes, & Spencer, 2001). In Study 1 ($N = 106$), participants were exposed to either an attitude-congruent or attitude-incongruent ingroup norm. In Study 2 ($N = 83$), participants were exposed to either a congruent, incongruent, or ambiguous ingroup norm. A range of attitude-behaviour outcomes, including attitude-intention consistency and change in attitude certainty, were assessed. In both studies, levels of group-normative behaviour varied as a function of uncertainty condition. In Study 1, conformity to group norms, as evidenced by variations in level of attitude-intention consistency, was observed only in the high uncertainty condition. In Study 2, exposure to an ambiguous norm had different effects for those in the low and high uncertainty conditions. In the low uncertainty condition, greatest conformity was observed in the attitude-congruent norm condition compared to an attitude-congruent or ambiguous norm. In contrast, individuals in the high uncertainty condition displayed greatest conformity when exposed to either an attitude-congruent or ambiguous ingroup norm. The implications of these results for the role of subjective uncertainty in social influence processes are discussed.

Although people generally welcome pleasant little surprises, most of us find it uncomfortable to feel uncertain about more significant aspects of our lives, such as who we are and how we relate to and interact with other people. Uncertainty can be threatening and people generally feel a need to eliminate it or to find ways to make it tolerable and cognitively manageable. Uncertainty about our attitudes, beliefs, feelings, and perceptions, as well as about our selves and our relationship to other people, is aversive, because uncertainty undermines our confidence in how to behave and what to expect from our physical and social environment. We have a fundamental need to reduce feelings of uncertainty about our world and our place within it. Thus, uncertainty often motivates behaviour aimed at reducing uncertainty. The present research reports the results of two studies designed to test the impact of uncertainty on social influence processes, namely conformity to ingroup norms in the context of the relationship between attitudes and action.

The importance of uncertainty as a motive for behaviour is not a novel idea in social psychology. For example, Festinger's (1954a, 1954b) social comparison theory rests on the assumption that there is a "motivation to know that one's opinions are correct and to know precisely what one is and is not capable of doing" (1954b, p. 217). Similarly, Schachter (1959) argued that uncertainty about what one is feeling and how one should react motivates affiliation to obtain comparative information from others. The greater a person's uncertainty about the situation they are in, what they are feeling, and the correct way to behave, the stronger the tendency to affiliate with similar others for social comparison purposes.

The role of uncertainty in social influence processes was highlighted early on by Sherif (1936). His autokinetic experiments showed that perceptual uncertainty produced convergence on a group norm. Furthermore, this convergence was associated with

reduced feelings of insecurity (Sherif & Harvey, 1952). Group processes are central to the resolution of uncertainty in the autokinetic paradigm, such that when people feel uncertain they become increasingly dependent upon their group for feelings of relative certainty. The idea that stimulus ambiguity produces uncertainty leading to influence was also confirmed by Asch (1956) who found an inverse relationship between task clarity (i.e., degree of similarity in line length) and conformity to others' judgements. By and large, the evidence suggests that task and stimulus ambiguity produces uncertainty, and this uncertainty leads to increased susceptibility to influence.

Uncertainty as a motive underlying social influence came to the fore in Deutsch and Gerard's (1955) distinction between processes of normative and informational influence. Normative influence arises from a desire to conform to the positive expectations of others—people are dependent on others for positive regard, and comply with them to be liked. In contrast, informational influence arises from a desire to resolve feelings of uncertainty, form an accurate view of reality, and to act correctly. Informational influence is 'true influence', resulting in private acceptance and internalisation that disambiguates reality, whereas normative influence is surface behavioural compliance and is traditionally considered the type of social influence most often associated with groups. Thus, true influence is an informational process activated by uncertainty about the correctness of one's judgements.

There are limitations, however, to a characterisation of conformity as either dependence based on a need for social approval (i.e., normative influence) or as dependence based on a need for information (i.e., informational influence). According to self-categorisation theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), intragroup consensus, agreement, and uniformity are generated by a distinct form of social influence called referent informational influence (e.g., Hogg & Turner, 1987). The social

categorisation of others as categorically similar to self (i.e., members of the same group for social comparison purposes) produces shared expectations of agreement. Disconfirmation of these expectations creates uncertainty and openness to influence (Abrams & Hogg, 1990; Turner & Oakes, 1989). Self-categorisation theory views subjective validity and uncertainty as a function of "agreement and disagreement about the same stimulus in the context of a shared social reality" (Turner, 1991, p.162). What is perceived as evidence about reality, as having informational value, is a function of shared ingroup norms. Such norms are subjectively prescriptive in that they make one feel that one ought to see, think, or act in a certain way, and they provide information that particular responses are objectively valid and appropriate. Disagreement within the confines of common category membership arouses uncertainty that is reduced by adherence, or conformity, to the perceived group norm.

The central idea of the self-categorisation analysis of social influence is that agreement with 'categorically identical others' (i.e., members of the same group as oneself) in a given situation creates subjective validity. However, there have been surprisingly few tests of the implied hypothesis that disagreement with similar others should motivate social influence and conformity. In an early demonstration of referent informational influence, Abrams, Wetherell, Cochrane, Hogg, and Turner (1990) conducted three experiments examining the effect of disagreement with similar and dissimilar others on responses in the autokinetic paradigm (Sherif, 1936), the Asch (1956) paradigm, and the group polarisation paradigm (e.g., Moscovici & Zavalloni, 1969). Across the three paradigms, self-categorisation was found to be a critical determining factor in social influence—only disagreement with members of one's group was associated with judgemental conformity. Relatedly, McGarty, Turner, Oakes, and Haslam (1993) used a perceptual task where there was an objectively correct answer but where it

was difficult for participants to be certain of that answer and found that disagreement increased uncertainty, while agreement increased certainty.

It is important to note that tests of the role of uncertainty in social influence have focused on the uncertainty caused either by stimulus ambiguity (Asch, 1956; Sherif, 1936) or by disagreement on judgemental tasks (Abrams et al., 1990; McGarty et al., 1993). Indeed, McGarty et al. are explicit in making a distinction between judgemental confidence and more general feelings of confidence in one's abilities, focusing only on the first form of uncertainty. Thus, the analysis of uncertainty in social identity contexts has focused on its role in producing conformity out of disagreement over attitudinal and perceptual judgements. It has not focused explicitly on feelings of uncertainty about self, identity, and the world in general.

Subjective Uncertainty

The more general motivational role of uncertainty in group processes, intergroup relations, and social identity contexts has been elaborated recently by *uncertainty reduction theory* (Hogg, 2000, 2004, 2005). Here, the emphasis is on feelings of uncertainty, particularly related to or focused directly on self. Furthermore, uncertainty is not viewed as an individual personality trait (cf. De Cremer & Sedikides, 2005; Sorrentino & Roney, 1999), but as a product of the immediate situation or wider social context—social contextual factors influence uncertainty, the resolution of uncertainty, and the way in which such resolution is expressed. Uncertainty reduction theory differs from previous conceptualisations of the role of uncertainty in social identity processes in that uncertainty is not caused only by disagreement with similar others, but can reflect economic uncertainty, national uncertainty, uncertainty about one's relationships with others, uncertainty about one's self and one's social world, and so forth.

Generally, people strive to reduce feelings of uncertainty about themselves, their social world, and their place within it—people like to know who they are and how to behave, and who others are and how they might behave. Thus, feeling uncertain, even if that uncertainty is not related to proximal perceptions, may leave one open to influence on one's attitudes and behaviours quite unrelated to the source of one's uncertainty. Subjective uncertainty itself may create a predisposition to be influenced, and one way to reduce generalised feelings of uncertainty may be to conform to group norms that define one's attitudes and behaviours. Instead of having to forge coherence and derive self-worth from personal idiosyncrasies, one can adopt the norms of the group and use them as internalised guides for behaviour. Indeed, conformity to ingroup norms reduces uncertainty by increasing consensus (e.g., Turner, 1985) and by clarifying self-definition in terms of social identity. The aim of the present research was to test whether general subjective uncertainty could influence how strongly people conform to ingroup norms, in the context of the relationship between people's attitudes and their behaviour.

Uncertainty has been found to influence a wide range of social phenomena. McGregor, Zanna, Holmes, and Spencer (2001) found that personal uncertainty, defined as "an acute kind of identity crisis that can arise from awareness of having inconsistent or unclear self-relevant cognitions" (p. 473) was associated with more extreme conviction about social issues (i.e., attitude hardening) and increased intergroup bias (see also Grieve & Hogg, 1999). Moreover, conviction about social issues may operate to decrease the subjective salience of personal uncertainties (McGregor & Marigold, 2003, Study 4). Van den Bos and colleagues (e.g., van den Bos, 2001; van den Bos & Miedema, 2000) have shown that uncertainty affects people's affective reactions to issues of perceived fairness and procedural justice. Indeed, salience of one's uncertainties may have a stronger impact

on attitudes and behaviours than other forms of uncertainty such as mortality salience (van den Bos, Poortvliet, Maas, Miedema, & van den Ham, 2005).

The Attitude-Behaviour Relationship

Norms are a component of two of the major theories of the relationship between people's attitudes and their behaviour (i.e., the theory of reasoned action—Fishbein & Ajzen, 1975; the theory of planned behaviour—Ajzen, 1991). However, there is little evidence that norms play a significant role in the attitude-behaviour relationship (see Armitage & Conner, 2001, for a review). The lack of evidence for the influence of norms has prompted Ajzen (1991) to conclude that personal factors are the primary determinants of behaviour. In recent years, however, researchers have argued that this lack of evidence may be due to the fact that norms have been conceptualised as external pressures on people—pressures reflecting specific others' expectations and existing "out there" instead of within the person's own psyche. An alternative conceptualisation of norms in the attitude-behaviour relationship, based on the social identity approach, has been proposed by Terry and Hogg (1996).

According to the social identity approach, when people view themselves as belonging to a group and feel that being a group member is important to them, they will align their behaviour with the norms and standards of the group. Thus, people are influenced by norms because norms prescribe the context-specific attitudes and behaviours appropriate for group members. Applying this reasoning to the question of why norms do not appear to influence the attitude-behaviour relationship, Terry and Hogg (1996) have argued that norms will influence the attitude-behaviour relationship provided that the norm is tied to a specific and relevant group that is a subjectively salient or important basis for self-definition. The social identity approach to attitude-behaviour

relations has received support from a series of both field and laboratory research (see Terry, Hogg, & White, 2000, for a review).

To address the role of norms in the attitude-behaviour context, Terry, Hogg, and colleagues have developed an experimental paradigm, somewhat unique to the attitude-behaviour field (Smith & Terry, 2003; Terry, Hogg, & McKimmie, 2000; Wellen, Hogg, & Terry, 1998; White, Hogg, & Terry, 2002). In the basic paradigm, attitudes are measured first, then the level of normative support from a self-relevant ingroup is manipulated, and finally participants' willingness to engage in attitude-related behaviours, and actual behaviour, is assessed. Across a range of attitudinal dimensions and with a range of group memberships, this research has demonstrated that normative support from an ingroup increases willingness (or intentions) to engage in attitude-consistent behaviour, while opposition to one's initial attitude from one's ingroup is associated with a weakening of the relationship between attitudes, intentions, and actions. Within the attitude-behaviour context, intentions have been found to be the most important predictor of actual behaviour (see Sheeran, 2002, for a review). In the present research, intention to engage in attitude-consistent behaviour was the critical outcome measure. Our aim in the present research was to test whether subjective uncertainty would affect social influence processes as reflected in conformity to ingroup norms in the attitude-behaviour context. In doing so, the present research advances extant knowledge by contributing to what Zanna and Fazio (1982) have termed the "third generation" of attitude-behaviour research. Specifically, our general hypothesis that the experience of uncertainty may motivate conformity to ingroup norms, thereby influencing the degree and direction of attitude-behaviour consistency, contributes to a greater understanding of both when and how attitudes are translated into action.

The Present Research

We conducted two experiments using the attitude-behaviour paradigm developed by Terry, Hogg, and colleagues. In both studies, uncertainty and level of normative support for participants' attitudes were manipulated, and participants' willingness to conform to group norms with respect to attitude-related behaviours was assessed. The experimental attitude-behaviour paradigm has some important advantages. It uses real attitudes related to "real-world" social issues rather than abstract perceptions and judgements (cf. Abrams et al., 1990; McGarty et al., 1993), and it allows a very clear discontinuity between the source of uncertainty, self, and the focus of subsequent uncertainty-reducing normative conduct. As a result, the present research represents a more conservative test of the impact of uncertainty on social influence processes. Indeed, evidence that more abstract, subjective, or self-relevant uncertainty has an effect on conformity to ingroup norms in relation to a specific and concrete attitude issue would demonstrate more powerfully the impact that uncertainty issues play in social influence phenomena.

We had two simple predictions. First, we expected greater attitude-intention consistency when participants were exposed to a group norm that was congruent with their own attitude (an attitude-congruent norm) compared to when participants were exposed to an attitude-incongruent norm. Second, level of uncertainty should moderate the effect of normative support—that is, we expected greater conformity to ingroup norms under high levels of uncertainty.

STUDY 1

Method

Participants and Design

Participants were 23 male and 83 female (N = 106, mean age = 20.96 years) introductory psychology students at a large Australian university, who received partial

course credit for participation. They were assigned randomly to conditions in a 2 (uncertainty: low vs. high) x 2 (ingroup norm: attitude-incongruent vs. attitude-congruent) between-subjects factorial design.

Procedure

Participants were led to believe that they would be completing a series of unrelated tasks on the topics of beliefs, opinions, and decision-making. To maintain the cover story, the different tasks were printed using a variety of fonts and different coloured paper. Participants were tested in groups of two to ten people. A male or female experimenter conducted the sessions.

Pre-experimental measures. For the first part of the study, participants completed a questionnaire that, in addition to collecting demographic information, assessed participants' attitudes to the focal issue—the introduction of "voluntary student unionism" (VSU)[1]. Attitude was assessed via two items: (a) a simple measure requiring participants to indicate whether they supported or opposed VSU (1 *oppose*, 2 *support*), and (b) a scale measuring degree of support for VSU (1 *strongly oppose*, 7 *strongly support*). The key attitude items were embedded among a number of filler attitude issues.

Uncertainty manipulation. Next, participants completed a "dilemma and decision-making task" designed to manipulate self-relevant uncertainty. In the high uncertainty condition, participants were asked to think of an unresolved personal dilemma. They were asked to select a dilemma that made them feel very uncertain, that they had not resolved, and that took the form of "should I…..or not?". After writing a short description of the dilemma, participants wrote down the primary personal value associated with the dilemma. A series of open-ended questions prompted deliberation about the relative pros and cons of the two options outlined in the dilemma. Thus, the questions confronted participants directly with inconsistencies and uncertainties among self-elements such as

goals, values, and possible selves. As such, it is a direct manipulation of the salience of self-relevant uncertainty. This uncertainty manipulation was developed and tested by McGregor et al. (2001; see McGregor, 2003, 2004, for a review of the empirical support for this manipulation).

Participants in the low uncertainty condition completed similar materials, except that they deliberated about a dilemma a friend was having, about which they thought they knew what the friend should do. This control procedure was designed to ensure that the complexity of the process of completing the materials was equivalent between conditions and that only the salience of the *self-relevant uncertainty* varied. In past research, this uncertainty manipulation increased feelings of uncertainty, but had no significant effect on self-esteem or affect (McGregor et al., 2001, Study 1).[2]

After completing the uncertainty task participants answered five questions, adapted from Campbell et al.'s (1996) Self Concept Clarity Scale, to check on the manipulation of uncertainty. The questions were: "My beliefs about myself conflict with one another", "I wonder about what kind of person I really am", "The different aspects of my personality are in conflict", "I know other people better than I know myself", and "I have a clear sense of the kind of person that I am" (1 *very slightly or not at all*, 5 *extremely*, one item was reverse scored). The five items formed a reliable self-conceptual uncertainty scale with higher scores indicating greater uncertainty ($\alpha = .77$).

Participants also completed four items adapted from Rosenberg's (1965) self-esteem scale. Participants were asked to indicate the extent to which they agreed with four statements ("I feel that I have a number of good qualities", "I am able to do things as well as other people", I feel I do not have much to be proud of", "I take a positive attitude towards myself"; 1 *not at all*, 9 *very much*). These items were included to ensure that the uncertainty manipulation targeted level of uncertainty, but did not depress self-esteem.

One item was reverse scored. The four items were combined to create a self-esteem scale (α = .77), with high scores indicating higher self-esteem. Finally, participants were asked to rate their current mood on three 9-point semantic differential scales (*unpleasant-pleasant*, *bad-good*, *unhappy-happy*). These items were combined to form a measure of current mood state (α = .82).[3]

Next, participants completed a 5-minute filler task in which they had to find a number of words within a larger puzzle. This delay was included because past research has found that threatened participants initially suppress awareness of a threat (i.e., high uncertainty), and that responses to uncertainty emerge only after the initial suppression phase has passed (Pyszczynski, Greenberg, & Solomon, 1999).

Normative support manipulation. After completing the filler task, normative support was manipulated via two sources of information (see Smith & Terry, 2003). First, participants studied a series of bargraphs, ostensibly the results of three recent studies of student opinion, showing the percentage of support and opposition to the target issue and two filler issues. For participants in the attitude-congruent norm condition, the bargraphs indicated that students at their university held the same attitude as them towards the target issue. In contrast, participants in the attitude-incongruent norm condition were exposed to bargraphs that indicated that their fellow students held the opposite attitude to them. In both conditions, the bargraphs indicated equal levels of support and opposition for the two filler issues. To ensure that participants processed the results, they then answered a number of questions about the results.

Participants also summarised a series of representative opinion statements that indicated that the group either strongly supported or strongly opposed the introduction of voluntary student unionism. Participants in the attitude-congruent norm condition read four statements that suggested that the group supported their position on the target issue

and one statement that opposed their position. The opposite pattern was provided for participants in the attitude-incongruent norm condition. After reading the statements, participants were asked to integrate and summarise the opinions presented.

Dependent measures. Next, participants completed a questionnaire that measured willingness to engage in attitude-consistent behaviour. They completed four items relating to how willing they would be to: (1) take a flier from a group that supported the introduction of VSU, (2) help distribute information leaflets from a group that supported the introduction of VSU, (3) attend a rally supporting the introduction of VSU, and (4) vote to support the introduction of VSU if there was a university referendum on the issue (1 *not at all willing,* 9 *extremely willing*). Each willingness item was recoded to reflect the strength of attitude-intention consistency ranging from 1 (*low consistency*) to 9 (*high consistency*), depending on whether participants supported or opposed the introduction of voluntary student unionism at the outset of the study. That is, if participants opposed the introduction of VSU, responses were reverse-scored. However, if participants supported the introduction of VSU, responses were not reversed. The re-scored willingness items were combined to form an index of willingness to engage in attitude-consistent behaviour, such that high scores reflected high levels consistency ($\alpha = .85$).[4]

In addition, participants completed three items assessing willingness to work on behalf of the group. They were asked to indicate how willing they would be to: (1) be a student guide during orientation next year, (2) read and evaluate materials on university student activities, and (3) evaluate and provide feedback on the public transport options available to students (1 *not at all willing,* 9 *extremely willing*). Responses were combined to form a measure of willingness to work for the group ($\alpha = .72$).

In order to see whether levels of uncertainty changed across the course of the study, participants then completed the five items used earlier in the study to assess self-

concept clarity. Responses were combined to form a measure of post-test uncertainty (α = .78). In addition, participants completed an item assessing their comprehension of the normative information. They were asked to indicate the extent to which students at their university supported or opposed the introduction of VSU (1 *strongly supported*, 9 *strongly opposed*). At the end of the study, participants were fully debriefed.

Results

Manipulation Checks

Uncertainty manipulation check. To ensure that the dilemmas reported in the low and high uncertainty condition were similar in topic and tone, the types of dilemmas reported by participants were examined. Across the uncertainty conditions, 35% of participants deliberated about academic concerns (e.g., changing courses, career directions), 31% about romantic relationships (e.g., initiating or terminating a relationship), and 17% about other relationships (e.g., friendships). The remaining 18% deliberated about a variety of concerns (e.g., quitting smoking, purchasing a new car). The dilemmas in both conditions were similar in topic and tone.

A 2 (uncertainty: low, high) x 2 (normative support: low, high) ANOVA on the scale assessing self-concept clarity revealed a marginal main effect for the uncertainty manipulation only, $F(1, 98) = 3.80$, $p = .054$, $\eta^2 = .04$. Participants reported higher levels of uncertainty in the high than low uncertainty condition (*M*s = 2.68 and 2.36, respectively, on a 5-point scale). Despite the relatively small effect, we felt that the uncertainty manipulation was successful in inducing changes in certainty related to participants' *self-concept* as opposed to felt uncertainty (see McGregor et al., 2001) or task uncertainty (see Grieve & Hogg, 1999).

There were no significant effects on the measure of self-esteem—the manipulation of uncertainty did not depress self-esteem. However, there was a significant

main effect for uncertainty on the mood measure, $F(1, 98) = 4.42$, $p = .04$, $\eta^2 = .04$, such that individuals in the high uncertainty condition reported less positive mood ($M = 5.67$) than individuals in the low uncertainty condition (Ms = 5.67 and 6.32 respectively on a 9-point scale).[5]

Normative support manipulation. A 2 (uncertainty: low, high) x 2 (normative information: oppose VSU, support VSU) ANOVA was conducted on participants' comprehension of the normative information. There was a significant main effect for type of normative information only, $F(1, 102) = 143.28$, $p < .001$, $\eta^2 = .58$. Participants exposed to the "oppose VSU" information were more likely to report that the group opposed VSU than participants exposed to the "support VSU" information (Ms = 7.13 and 2.88, respectively). Thus, participants interpreted the content of the normative information correctly.

Dependent Measures

Our key analysis was a 2 (uncertainty: low, high) x 2 (normative support: low, high) ANCOVA, with initial attitude as the covariate, on the measure of willingness to display attitude consistent behaviour and the measure of willingness to work for the group. These two dependent measures were not significantly correlated ($r = -.06$, $p = .59$). On willingness to display attitude-consistent behaviour, after controlling for initial attitude ($F[1, 97] = 181.79$, $p < .001$), there was a significant main effect for normative support, $F(1, 97) = 7.90$, $p = .006$, $\eta^2 = .03$. Participants exposed to a norm that was congruent with their own attitude displayed greater attitude-intention consistency than participants exposed to an attitude-incongruent norm (Ms = 5.09 and 4.27, respectively).

This effect was qualified by a significant interaction with uncertainty, $F(1, 97) = 5.72$, $p = .019$, $\eta^2 = .02$ (see Figure 1). At high levels of uncertainty, participants who were exposed to an attitude-congruent norm were more willing to display attitude-

consistent behaviour than participants exposed to an attitude-incongruent norm, simple $F(1, 97) = 13.79, p < .001$. Furthermore, when exposed to an attitude-incongruent norm, high uncertainty participants displayed less attitude-intention consistency than low uncertainty participants ($M = 3.78$ vs. 4.77), $F(1, 97) = 5.76, p = .018$. No other simple effects were significant.

On willingness to work for the group there was only a significant Uncertainty x Normative Support interaction, $F(1, 93) = 5.66, p = .019, \eta^2 = .06$ (see Figure 2). Participants who were exposed to an attitude-congruent norm were more willing to work for the group when they were high than low in uncertainty, simple $F(1, 93) = 7.67, p = .007$. No other simple main effects were significant.

In order to see whether level of uncertainty changed across the course of the study, a 2 (uncertainty) x 2 (normative support) x 2 (time) within-subjects ANCOVA (with initial attitude as the covariate) was performed on participants' self-concept clarity scores. Analysis revealed a significant main effect for time, $F(1, 93) = 5.70, p = .019, \eta^2 = .06$, such that level of uncertainty decreased over time (Ms = 2.52 and 2.21, respectively). This effect was qualified by a significant Uncertainty x Normative Support x Time interaction, $F(1, 93) = 4.27, p = .041, \eta^2 = .05$ (see Figure 3).

For ease of reporting this interaction, difference scores were calculated by subtracting post-test uncertainty scores from post-manipulation uncertainty scores, and follow up tests performed on these difference scores. One-sample t-tests were conducted to determine whether the changes in level of uncertainty differed significantly from zero. Analysis revealed a marginal effect for normative support among low uncertainty participants, $F(1, 93) = 3.38, p = .069$, but not among high uncertainty participants. That is, low uncertainty participants exposed to an attitude-congruent norm reported a significant decrease in uncertainty ($M = .38, t[22] = 4.13, p < .001$) compared to

participants exposed to an attitude-incongruent norm (M = .13, t[20] = 1.53, *ns*). For the high uncertainty participants, uncertainty decreased significantly across the course of the study, but this did not vary as a function of normative support ($M_{incongruent}$ = .43, t[21] = 4.16, $p < .001$ and $M_{congruent}$ = .31, t[31] = 3.91, $p < .001$.

Discussion

As predicted, ingroup normative support for participants' attitude affected their willingness to display attitude-consistent behaviour. However, uncertainty moderated this relationship between group norms and group behaviour—both in terms of conformity to group norms and in terms of willingness to work for the group. When uncertain, the expression of attitude-consistent intentions depended on the direction of the group norm. Participants displayed more attitude-related consistency when provided with a supportive norm than a non-supportive norm. However, when they were relatively certain, they did not conform to the group norm. In addition, participants were more willing to work for the group on other issues when they were uncertain and provided with a congruent group norm. Finally, level of uncertainty decreased across the course of the study. For certain participants, exposure to a supportive group norm increased their certainty, but for uncertain participants, exposure to any group norm reduced uncertainty.

These findings add to what we already know about the role of judgemental uncertainty in social influence processes (e.g., Asch, 1956; Sherif, 1936), however they make an important contribution by showing that more abstract, generalised self-relevant uncertainty can also lead individuals to rely on group norms to direct their behaviour. Moreover, when uncertain, individuals did not merely conform to group norms on relatively unimportant, irrelevant, or transitory perceptual judgement dimensions, but altered their willingness to express behavioural intentions that were more or less consistent with important and self-relevant attitudes.

There was also evidence that provision of a supportive group norm had different effects for low and high uncertain individuals on more generalised willingness to work for the group. When uncertain and when provided with evidence that one's attitude was in line with one's group, individuals were more willing to engage in group behaviour. It is possible that the provision of a supportive norm allowed uncertain individuals to feel a sense of belongingness to the group, leading to an increased willingness to expend effort on behalf of the group. Thus, feeling uncertain seems to prompt conformity to group norms, whether these are specific group norms (i.e., doing what your group thinks you should do) or more general group norms (i.e., working hard for your group).

Finally, there were differences in the way in which level of uncertainty changed across the course of the study. For more certain participants, exposure to a supportive group norm increased self-concept certainty, whereas exposure to a non-supportive norm had no impact on certainty. That is, agreement with similar others was associated with greater certainty relative to disagreement with similar others. In contrast, all uncertain participants, irrespective of the type of norm, reported an increase in certainty over time. Indeed, mere exposure to a group norm reduced uncertainty. It might be that when uncertain, information about *either* the validity *or* invalidity of one's beliefs, attitudes, feelings, and actions is able to contribute to a sense of certainty.

STUDY 2

Study 1 provided good support for the idea that subjective uncertainty influences social influence processes, specifically conformity to group norms. Study 2 was designed to address potential limitations, and to extend and consolidate these findings.

The key limitation of Study 1 was that the uncertainty manipulation check did not attain conventional levels of statistical significance ($p = .054$). However, we felt this was due to how it was measured. That is, previous research has used a measure of felt

uncertainty (i.e., endorsement of uncertainty-related adjectives) to test the effectiveness of the uncertainty manipulated (see McGregor et al., 2001), rather than the more stringent measure of *self-concept* uncertainty that we used. In Study 2 we checked on the manipulation more fully, by including a measure of felt uncertainty in the immediate context, as well as a measure of self-concept certainty.

In Study 2 we also assessed uncertainty more broadly, by measuring pre-test and post-test attitude certainty. Previous research has shown that disagreement with fellow group members, such as that implied in our attitude-incongruent norm condition, is associated with increased social influence (e.g., Abrams et al., 1990). Thus, we wanted to examine the effect of our manipulations on attitude certainty and to determine whether, over and above any social influence associated with changes in attitude certainty, self-relevant uncertainty was associated with conformity to group norms.

Our final innovation in Study 2 was the inclusion of an ambiguous norm condition in which participants were exposed to information that suggested that the group was undecided on the issue and therefore had no clear norm. Our interest was in the way in which certain and uncertain participants would react to an ambiguous norm. Inclusion of an ambiguous norm allowed us to investigate further why our uncertain participants did not conform to the ingroup norm. It is possible that in the low uncertainty condition, because participants contemplated a friend's dilemma (and potential "screw-up"), this may have primed them to believe that others are often wrong and allowed them to ignore the information about the attitudes of others when it conflicted with their own attitude position. The inclusion of an ambiguous norm, in which the group's position is neither completely incompatible nor completely compatible with the individual's attitude, may address this issue. If certain participants' responses to an ambiguous norm are similar to their responses to an attitude-incongruent norm, this may suggest that certain participants

are not simply ignoring information that fails to support their initial attitude, but that level of (un)certainty influences responses to variations in normative support.

The question of how group members respond to an ambiguous norm is also linked to a program of research by Hogg and his colleagues on the interplay between uncertainty and entitativity (e.g., Hogg, Sherman, Dierselhuis, Maitner, & Moffitt, in press), which shows that uncertainty engenders a preference for membership in highly entitative groups. Entitative groups have a number of properties (e.g., clear structure, common fate, interdependence—see Hamilton & Sherman, 1996; Lickel et al., 2000), the most relevant here being that highly entitative groups have clear and consensual norms and prototypes. Thus, in the present context, would it be the case that uncertain participants dislike the ambiguous norm because it fails to provide clear directions for the appropriate way to think and behave? Or would uncertain participants latch on to the ambiguous norm because it does not contradict their position directly, allowing them to interpret the norm in line with their attitude?

In other respects Study 2 was identical to Study 1, except that we used a different attitude issue, banning smoking on campus, to ensure that the Study 1 results were not attitude-specific. As in Study 1, we expected greater attitude-intention consistency when participants were exposed to an attitude-congruent norm compared to when participants were exposed to an attitude-incongruent norm. Second, level of uncertainty should moderate the effect of normative support. That is, we expected greater conformity to ingroup norms under high levels of uncertainty. The effect of the ambiguous norm was not specified due to the exploratory nature of this aspect of the research. However, based on the arguments presented above, two contrasting hypotheses can be generated. That is, following exposure to an ambiguous norm, high uncertainty participants may display

greater willingness to engage in attitude-consistent behaviour or they may display reduced willingness to engage in attitude-consistent behaviour.

Method

Participants and Design

Participants were 23 male and 60 female (N = 83, mean age = 18.31 years) introductory psychology students who participated for partial course credit. They were assigned randomly to conditions in a 2 (uncertainty: low vs. high) x 2 (type of norm: attitude-incongruent, attitude-congruent, ambiguous) between-subjects factorial design. Participants were tested in groups of two to ten people by a female experimenter.

Procedure

The procedures and materials used in Study 2 were identical to those used in Study 1, with three key differences. First, attitude was measured with multiple items and there was also a measure of attitude certainty. Second, there was a third level to the norm variable—the ambiguous norm condition. Finally, we used a different attitude topic (i.e., banning smoking on campus).

Pre-experimental measures. Participants indicated their attitudes to the focal issue of banning smoking on campus. Attitude was assessed with six items: a binary measure (1 *oppose*, 2 *support*) and five 9-point semantic differentials that assessed level of support for a ban (*strongly disagree-strongly agree*, *bad-good*, *approve-disapprove*, *favourable-unfavourable*, *dislike-like*). The semantic differentials formed a reliable scale (α = .95). Attitude certainty was assessed with three items that measured participants' confidence, certainty, and sureness of their opinion about banning smoking on campus (1 *not at all*, 9 *a great deal*). Responses were combined to form a reliable scale (α = .95). The target items were embedded among a number of filler attitude issues.

Uncertainty manipulation. Next, participants completed the "dilemma and decision-making task" from Study 1. After completing the uncertainty task, participants indicated their agreement (1 *very slightly or not at all*, 5 *extremely*) with three statements assessing self-concept clarity: "My beliefs about myself conflict with one another", "I feel I am not really the person I appear to be", and "The different parts of my personality are in conflict". Responses were combined so that higher scores indicated greater uncertainty (α = .80). Participants also responded to five uncertainty-related adjective items (uneasy, unclear, conflicted, unsure of self or goals, indecisive) and were asked to indicate the extent to which the adjective applied to the way they were feeling right now (1 *not at all*, 5 *extremely*). These items formed a measure of felt uncertainty (α = .83).

Participants completed the four items adapted from Rosenberg's (1965) self-esteem scale and the three mood items (see Study 1). The self-esteem and mood items were combined to form two reliable scales (α = .76 and .88, respectively).[6] Next, participants completed a 5-minute filler task (see Study 1).

Normative support manipulation. As in Study 1, level of normative support was manipulated by asking participants to study a series of bargraphs and opinion statements. In the attitude-congruent norm condition, the bargraphs indicated that, on the whole, 85% of students at the university held the same attitude as the participant towards the target issue, and participants were exposed to four supportive statements and one non-supportive opinion statement. In the attitude-incongruent norm condition, the bargraphs indicated that, on the whole, 85% of their fellow students held the opposite attitude to them, and participants were exposed to four non-supportive statements and one supportive statement. In the ambiguous norm condition, participants were exposed to graphs and opinion statements that suggested that opinion was divided and undecided on

the target issue. Participants completed a number of comprehension tasks to ensure that they processed the normative information (see Study 1).

Dependent measures. Next, participants indicated their willingness to engage in attitude-consistent behaviour. They completed five items concerning how willing they would be to engage in different behaviours related to support for a smoking ban on campus: (1) taking a flier, (2) distributing information leaflets, (3) attending a rally, (4) voting, and (5) signing a petition (1 *not at all willing,* 9 *extremely willing*). Each item was recoded to reflect attitude-intention consistency, ranging from 1 (*low consistency*) to 9 (*high consistency*), depending on participants' initial attitudes. The re-scored items formed an index of willingness to engage in attitude-consistent behaviour (α = .86).

Attitude was assessed again with the five semantic differential scales (α = .91) and the three attitude certainty items (α = .96) used earlier. Participants also completed the three-item measure of self-concept clarity—responses were combined to form a measure of post-test uncertainty (α = .78). In addition, participants completed two items assessing their comprehension of the normative information provided. They indicated, on 9-point scales, how similar their opinion was to the opinion of the student group (1 *not at all similar*, 9 *extremely similar*) and whether the student group supported or opposed banning smoking on campus (1 *strongly supported*, 9 *strongly opposed*). At the conclusion of the study, participants were debriefed.

Results

Manipulation Checks

Uncertainty manipulation checks. To confirm that the dilemmas reported in the low and high uncertainty conditions were not qualitatively different, the types of dilemmas recorded were examined. As in Study 1, the dilemmas in both conditions were

similar in topic and tone, and the dilemmas reported were similar in both studies—that is, most participants (79%) deliberated about academic or relationship concerns.

A 2 (uncertainty: low, high) x 3 (type of norm: attitude-incongruent, attitude-congruent, ambiguous) ANOVA was conducted on participants' felt uncertainty responses. There was a main effect for the uncertainty manipulation only, $F(1, 71) = 4.96$, $p = .029$, $\eta^2 = .07$. Participants in the high uncertainty condition reported greater uncertainty ($M = 2.45$) than participants in the low uncertainty condition ($M = 2.02$). On the self-concept clarity measure, analysis revealed a marginal main effect for the uncertainty manipulation only, $F(1, 71) = 3.72$, $p = .058$, $\eta^2 = .05$. Participants in the high uncertainty condition reported higher levels of uncertainty ($M = 2.69$) than participants in the low uncertainty condition ($M = 2.25$). It should be noted that, although the effect for the uncertainty manipulation is not large, it was successful in inducing changes in both immediate felt uncertainty and self-concept certainty

On the measure of mood, a 2 x 3 ANOVA did not reveal any significant effects—thus, the manipulation of uncertainty did not affect mood. As in Study 1, the uncertainty manipulation had no effect on self-esteem.

Normative support manipulation checks. On the measure of perceived similarity between participants' attitude and the group norm, a 2 (uncertainty) x 3 (type of norm) ANOVA revealed a main effect for normative support only, $F(1, 71) = 20.87$, $p < .001$, $\eta^2 = .37$. Bonferroni t-tests revealed that participants in the incongruent norm conditions perceived lower levels of similarity ($M = 4.12$) than participants in the congruent or ambiguous norm conditions (Ms = 6.89 and 6.22, respectively), $t(74) = 5.89$, $p < .001$. There was no significant difference between the congruent and ambiguous norm conditions, suggesting that participants may have interpreted the ambiguous norm as supportive of their own attitude, $t(74) = 1.53$, *ns*.

On the measure of comprehension of the norm information, a 2 (uncertainty: low, high) x 3 (normative information: support ban, oppose ban, ambiguous) analysis revealed a significant main effect for type of norm only, $F(1, 71) = 32.99$, $p < .001$, $\eta^2 = .46$. Bonferroni tests revealed that participants exposed to the ban-opposing information were more likely to report that the group opposed a ban on smoking ($M = 7.30$) than participants exposed to the ban-supporting or ambiguous information (Ms = 3.61 and 5.21, respectively), $t(74) = 7.97$, $p < .001$. In addition, participants exposed to the ban-supporting information reported that the group norm was more supportive of a ban than those in the ambiguous condition, $t(74) = 3.40$, $p < .01$.

Dependent Measures[7]

On the measure of willingness to display attitude-consistent behaviour, analysis revealed a main effect for normative support, $F(2, 71) = 3.75$, $p = .028$, $\eta^2 = .10$, such that participants exposed to an attitude-incongruent norm displayed less attitude-intention consistency ($M = 5.38$) than participants exposed to either an attitude-congruent ($M = 6.82$) or ambiguous norm ($M = 5.84$), $t(74) = 3.08$, $p = .005$. There was no significant difference between the attitude-congruent and ambiguous norm conditions, $t(74) = 1.35$, *ns*. This effect was qualified by a significant Uncertainty x Type of Norm interaction, $F(2, 71) = 5.10$, $p = .009$, $\eta^2 = .13$. Type of norm had a significant effect on willingness to display attitude-consistent behaviour at both low levels of uncertainty, simple $F(2, 71) = 4.41$, $p = .016$, and at high levels of uncertainty, simple $F(2, 71) = 4.15$, $p = .02$ (see Figure 4).

At low levels of uncertainty, participants displayed higher levels of consistency in the congruent norm condition ($M = 7.05$) compared to the incongruent norm and ambiguous norm conditions (Ms = 5.75 and 4.49, respectively), $t(36) = 3.19$, $p = .004$. However, there was no difference between the incongruent norm and ambiguous norm

conditions, $t(36) = 1.61$, *ns*. In contrast, at high levels of uncertainty, there was a significant difference between the level of consistency displayed in the incongruent norm condition ($M = 5.00$) compared to the congruent norm ($M = 6.60$) and ambiguous norm conditions (Ms = 7.20), $t(35) = 2.50$, $p = .021$. However, there was no difference between the congruent norm and ambiguous norm conditions, $t(35) = .80$, *ns*. Further analysis revealed that the only significant difference between the low and high uncertainty participants was in the ambiguous norm condition, $F(2, 71) = 9.08$, $p < .001$ (Ms = 4.49 and 7.20, respectively).

A 2 (uncertainty) x 3 (type of norm) x 2 (time) within-subjects ANOVA on participants' attitudes revealed no significant main or interactive effects. On the measure of change in attitude certainty, analysis revealed a significant Type of Norm x Time interaction, $F(2, 71) = 3.24$, $p = .045$, $\eta^2 = .08$. Subsequent analysis revealed a main effect for time in the incongruent norm condition only, $F(1, 71) = 4.97$, $p < .04$, such that participants exposed to an incongruent group norm became less certain of their attitude over time ($M_{change} = .73$, $t = 2.16$, $p = .039$). Participants in the congruent ($M_{change} = -.19$, $t = -.65$, *ns*) and ambiguous norm conditions ($M_{change} = -.42$, $t = -1.06$, *ns*) did not report significant changes in attitude certainty over time.

A 2 (uncertainty) x 3 (type of norm) x 2 (time) within-subjects ANOVA on the self-concept clarity scores revealed a significant main effect for time, $F(1, 71) = 46.81$, $p < .001$, $\eta^2 = .40$, such that level of self-concept uncertainty decreased over time (Ms = 2.47 and 2.12, respectively). This effect was qualified by a significant Uncertainty x Time interaction, $F(1, 71) = 4.22$, $p = .044$, $\eta^2 = .06$. Tests of the simple main effects revealed that self-concept uncertainty decreased over time for both the low, $F(1, 71) = 14.46$, $p < .001$ ($M_{change} = .24$, $t = 4.43$, $p < .001$), and high uncertainty conditions, $F(1, 71) = 49.60$,

$p < .001$ ($M_{change} = .46$, $t = 5.70$, $p < .001$), but that this effect was more marked in the high uncertainty condition.

Discussion

The type of norm influenced how willing participants were to engage in attitude-consistent behaviour. Participants exposed to an ingroup norm that was incongruent with their attitudes reported lower levels of attitude-intention consistency than participants exposed to either a supportive or an ambiguous norm.

However, of key importance to the current research, uncertainty interacted with type of norm to influence displays of attitude-related behaviour. More specifically, type of norm influenced conformity for both the certain and uncertain participants. When participants were relatively certain, a supportive group norm increased attitude-intention consistency relative to a non-supportive or ambiguous norm. However, for uncertain participants, either a supportive or an ambiguous norm increased attitude-related consistency (relative to a non-supportive norm). Moreover, although participants did not report significant attitude change, the degree of certainty with which those attitudes were held did vary as a function of the type of norm provided. Exposure to a non-supportive norm was associated with a significant decrease in attitude certainty and confidence. In contrast, exposure to either a supportive or ambiguous group norm was not associated with a change in attitude certainty. Finally, self-concept uncertainty decreased significantly for all participants. However, this effect was more marked in the high uncertainty condition, highlighting the difficulty of maintaining uncertainty due to people's motivation to reduce uncertainty.

It is important to note, however, that the effect for type of norm for participants low in uncertainty seems somewhat inconsistent with the results of Study 1. In Study 1, where participants were exposed to either a supportive or a non-supportive group norm,

type of norm had no significant effect on attitude-intention consistency in the low uncertainty condition. In Study 2, low uncertainty participants displayed greater consistency when exposed to a supportive norm than either a non-supportive or an ambiguous norm. How can one resolve this apparent discrepancy across the studies? In order to examine this further, we conducted additional analyses where we focused specifically on the effects of either a supportive or non-supportive group norm for low and high uncertainty participants. Variability associated with the ambiguous norm condition (the condition absent from Study 1) was removed and the simple main effects were tested against a new, in fact larger, error term. These analyses revealed that, as in Study 1, low uncertainty participants displayed equivalent levels of attitude-intention consistency across the supportive and non-supportive norm conditions ($F[1, 53] = 2.80$, *ns*). In contrast, high uncertainty participants displayed greater attitude-intention consistency when exposed to a supportive norm than when exposed to a non-supportive group norm ($F[1, 53] = 3.93$, $p = .053$).

We feel it is of particular interest that the primary difference between low and high uncertainty participants' group-mediated conformity was in the ambiguous norm condition. When people were relatively certain, they treated an ambiguous norm like a non-supportive norm, displaying low levels of attitude-intention consistency - suggesting that people who feel certain do not like an ambiguous norm, perhaps because it makes uncertainties (i.e., in the group's position on an issue) salient.

When people were uncertain, they treated the ambiguous norm like a congruent norm, displaying equivalent levels of consistency in these conditions. It might be the case that uncertain participants are engaging in a form of biased processing in relation to the ambiguous norm. That is, because an ambiguous norm does not contradict their attitude position directly, uncertain individuals may interpret an ambiguous norm as consistent

with their opinion, thereby helping to crystallise their attitudes and reduce uncertainty. Opinion conviction is one response to personal uncertainty (see McGregor, 2004, for a review), but such convictions will be undermined by the awareness that others do not share the same convictions. An ambiguous norm may allow uncertain individuals to engage in conviction as an uncertainty reduction strategy without eliciting concerns related to the extent to which others agree with one's opinions. Clearly, this account is speculative and needs to be tested explicitly in future research.

It should be noted that the results relating to the ambiguous norm condition are not what we would have expected based on recent work suggesting that uncertain individuals might like groups with clear and consensual prototypes (i.e., highly entitative groups—see Hogg et al., in press). However, clear and consensual prototypes and norms are but one of the properties of entitative groups. It is possible that if our ambiguous norm had been framed against the background of a low entitativity group, individuals high in uncertainty would not have responded favourably to the ambiguous norm. Clearly, future research is needed in which the role of uncertainty and entitativity are examined in relation to social influence processes.

GENERAL DISCUSSION

Uncertainty has long been implicated by social psychologists in social influence processes (e.g., Asch, 1956; Deutsch & Gerard, 1955; Sherif, 1936). Typically uncertainty has been conceptualized as perceptual or judgemental uncertainty tied to ambiguous stimuli, or, in the case of more recent self-categorization analyses uncertainly caused by perceptual or judgemental disagreement with fellow ingroup members (e.g, Turner et al., 1987).

In this article we draw on uncertainty reduction theory (e.g., Hogg, 2000) to attribute a more fundamental role to uncertainty in social influence. Feelings of

uncertainty much more generally, but in particular uncertainty about or related to self-conception, provide a powerful base for conformity to self-defining (ingroup) norms. To investigate this idea we conducted two experiments adopting an attitude-behaviour paradigm devised and used by Terry and her colleagues (e.g., Smith & Terry, 2003). We set out to show that the tendency for people to behave more in accordance with their attitudes when their attitudes are supported by their ingroup norm (see Terry, Hogg, & White, 2000) would be strengthened when people felt generally uncertain about themselves. The results of the current research highlighted that group-mediated attitude-behaviour consistency may by underpinned, at least in part, by uncertainty phenomena—that is, uncertainty about oneself, one's social world, and one's relationships with other people may drive conformity to ingroup norms in the attitude-behaviour context.

In both studies, uncertainty was manipulated by asking participants to think about an unresolved dilemma in their own life (high uncertainty) or in the life of a friend (low uncertainty). Thus, the uncertainty was related to the self and the social world rather than related to the specific experimental setting or to a judgemental task. Next, participants were exposed to information regarding the ingroup norm: in Study 1, the ingroup norm was either supportive or non-supportive of participants' attitudes; in Study 2, we included a third condition in which the group norm was ambiguous. Level of conformity to the ingroup norm was the critical outcome measure; however, measures of willingness to work for the group (Study 1), change in self-concept uncertainty, and change in attitude certainty (Study 2) were also assessed.

Taken together, there was consistent evidence that ingroup norms influence willingness to engage in attitude-consistent behaviour—participants reported stronger attitude-consistent intentions when exposed to a supportive group norm than when exposed to a non-supportive group norm or an ambiguous group norm. However, as

predicted, level of conformity to ingroup norms varied as a function of level of self-relevant uncertainty. In Study 1, only high uncertainty participants responded to ingroup norm, displaying more willingness to engage in attitude-consistent behaviour and more willingness to work for the group when exposed to a supportive group norm. In Study 2, both low and high uncertainty participants responded to the type of ingroup norm presented. Low uncertainty participants responded to the non-supportive and ambiguous norms in a similar fashion, reducing their willingness to engage in attitude-consistent behaviour. In contrast, high uncertainty participants responded to the supportive and ambiguous norms in a similar way, displaying higher levels of attitude-consistent intentions compared to a non-supportive norm. Thus, the tendency for people to behave more in accordance with their attitudes when their attitudes are supported by their ingroup norm was strengthened when people felt generally uncertain about themselves.

Additional findings emerged on the measures of change in self-relevant uncertainty and change in attitude certainty. Overall, level of self-relevant uncertainty decreased for all participants in both studies. This was particularly true for the high uncertainty participants who, over time, reported a level of uncertainty comparable with the low uncertainty participants. Indeed, one of the key features of uncertainty is that it is aversive, such that people are motivated to reduce or resolve uncertainties. Our results suggest that uncertainty, as manipulated here, has a short "half-life" and is difficult to maintain over time. Alternatively, what these results might indicate is the successful reduction of uncertainty through conformity to the ingroup norm. Assessment of change in attitude certainty was incorporated into Study 2. Attitude certainty decreased only when participants were exposed to a non-supportive ingroup norm, but this did not vary as a function of self-relevant uncertainty. Exposure to a supportive group norm or an

ambiguous group norm did not influence participants' certainty or confidence in their own attitude position.

It is important to consider that there were multiple sources of uncertainty in our study: self-relevant uncertainty and the uncertainty created by disagreement with similar others (i.e., the incongruent norm). Indeed, results indicated that participants became more uncertain about their attitudes following the provision of an attitude-incongruent group norm. Thus, one might ask which source of uncertainty is central to these effects. Additional analyses in which change in attitude certainty was entered as a covariate enabled some light to be shed on this issue—even after controlling for changes in attitude certainty, level of conformity continued to vary as a function of self-relevant uncertainty and level of normative support. Thus, although disagreement with fellow group members certainly plays a role in social influence phenomena (see Abrams et al., 1990), it is important to acknowledge the role that self-relevant uncertainty plays in conformity to group norms.

In the current research, there was consistent evidence that uncertainty influences conformity to group norms and group behaviour However, a key contribution of the current research is the demonstration that uncertainty need not be linked directly to the task at hand to play a role in conformity to group norms. More generalised self-relevant uncertainty determines conformity to specific group norms in the context of the attitude-behaviour relationship. The uncertainties felt by the participants in the current study were disparate, ranging from academic uncertainty to relationship uncertainty to uncertainty about life decisions, yet the result was the same: increased conformity to ingroup norms, even if conformity to group norms involved responses that were inconsistent with participants' expressed attitudes. Thus, the present research goes further in demonstrating the impact of uncertainty on social influence processes. That is, when uncertain,

individuals do not only bring their behaviour into line with a group on trivial matters such as perceptual judgements, but are willing to behave in an attitude-inconsistent fashion if the norms of the group prescribe this. Thus, cleaving to dominant, positive, societal norms appears to provide a sense of purpose and direction and knowing that others share a set of norms helps to bolster these norms and the attitudes and beliefs associated with them.

In our research, we manipulated self-relevant uncertainty directly using a paradigm developed and tested by McGregor and colleagues (McGregor & Marigold, 2003; McGregor et al., 2001). There are, however, other established techniques to manipulate the salience of uncertainty. For example, van den Bos and colleagues (van den Bos, 2001; van den Bos et al., 2005) have manipulated uncertainty successfully by asking participants to focus on the emotions and physical sensations associated with being uncertain. In contrast, the manipulation used in our research primes individuals to focus on the inconsistencies among self-relevant cognitions, goals, values, and possible selves. Similarly, Hogg et al. (in press) ask participants to note three things about themselves, their lives, and their future that either make them feel certain or uncertain. Thus, researchers in this field are able to select from an increasingly diverse range of manipulations.

In sum, the present results are promising with respect to the role of self-relevant or subjective uncertainty in determining level of conformity to group norms and displays of group behaviour. Clearly the next step in this line of research is to investigate the potential mediating role of group identification. According to Hogg's (2000) uncertainty reduction theory, uncertainty motivates identification with social groups which, in turn, should motivate group behaviour (e.g., conformity, collective action, ingroup bias). To date, there is good evidence that uncertainty motivates identification with social groups (e.g., Hogg et al., in press; Reid & Hogg, 2005) and that uncertainty motivates group

behaviour, namely ingroup bias (e.g., Grieve & Hogg, 1999). In addition, research on the social identity approach to attitude-behaviour relations has indicated that identification plays an important role in determining conformity to group norms (e.g., Terry & Hogg, 1996). Future research should integrate these literatures more fully through an examination of the role of identification in uncertainty-related group-mediated attitude-behaviour consistency.

Uncertainty, and the resolution of uncertainty, is a driving force behind many social phenomena such as ingroup bias (e.g., Grieve & Hogg, 1999), responses to fairness procedures (e.g., van den Bos, 2001), and conformity to group norms (e.g., Abrams et al., 1993). The present study represents a first step in examining the role of self-relevant uncertainty in conformity to group norms against the background of established attitudes and beliefs, thereby extending the scope of research on uncertainty and its correlates. Further research that investigates the impact of uncertainty on group-mediated behaviour with a range of target behaviours and group memberships is needed to uncover the vast array of strategies available to individuals in their search for uncertainty reduction.

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Footnotes

1. In most Australian universities, student union membership, via the payment of union dues, is compulsory for all students. In return, the student union funds a number of services for students (e.g., childcare, legal services) and engages in political action to protect the rights of students. The introduction of voluntary student unionism, a position advocated by the current conservative government, would mean that students would have the right to choose whether they wish to join a student association and pay union fees. However, many believe that this would result in poorer services to students and would stifle political action.
2. The uncertainty manipulation used here has been used extensively in past research (see McGregor, 2003, 2004, for reviews). It can be argued, however, that the low uncertainty and high uncertainty conditions do not differ only in terms of the self-relevance of the uncertainty (i.e., self vs. friend), but also in terms of whether the uncertainty is resolved (i.e., the self dilemma is unsolved but the friend dilemma has a solution). Research by McGregor and Marigold (2003) sheds light on this issue. In their first study, these authors employed multiple control conditions (friend's dilemma vs. easy personal decisions vs. free association) and found that the effects of the high uncertainty condition were not due solely to the nature of the control condition. Thus, effects in the high uncertainty conditions are not due solely to the difference in the extent to which the dilemmas have been resolved.
3. A principal components factor analysis with varimax rotation on the self-concept clarity, self-esteem, and mood items revealed a three-factor solution, which accounted for 63% of the variance. The three mood items defined the first factor (eigenvalue = 4.59, 38% of the variance, all factor loadings exceeded .80), while the five self-concept clarity items defined the second factor (eigenvalue = 1.59, 13% of the

variance, all factor loadings exceeded .53). The final factor reflected the self-esteem items (eigenvalue = 1.48, 12% of the variance, all factor loadings exceeded .61). Thus, self-concept clarity, self-esteem, and mood reflect three distinct factors.

4. Studies of the attitude-behaviour relationship typically assess the relationship between attitudes and behaviour by means of a correlation. However, in experimental studies, this method is not appropriate because the sample sizes in each cell are not large enough to provide sufficient power to test for differences in the strength of the attitude-behaviour relationship across experimental conditions. Recoding behavioural responses in the way used in the present study allows participants' original attitude position to be reflected in the outcome measures. This recoding method has been used in past experimental research in the attitude-behaviour context (see Smith & Terry, 2003; Terry, Hogg, & McKimmie, 2000; Wellen et al., 1998).
5. We controlled for mood (and gender) in a series of preliminary analyses of covariance. Mood was not a significant covariate in these analyses and the inclusion of mood as a covariate did not alter the results.
6. A principal components factor analysis with varimax rotation on the self-concept clarity, felt uncertainty, self-esteem, and mood items revealed a four-factor solution, which accounted for 71% of the variance. The three mood items defined the first factor (eigenvalue = 2.99, 20% of the variance, all factor loadings exceeded .84), while the five felt uncertainty items defined the second factor (eigenvalue = 2.69, 18% of the variance, all factor loadings exceeded .42). The third factor was defined by the self-concept clarity items (eigenvalue = 2.61, 17% of the variance, all factor loadings exceeded .84). The final factor reflected the self-esteem items (eigenvalue = 2.44, 16% of the variance, all factor loadings exceeded .50). Thus, self-concept clarity, felt uncertainty, self-esteem, and mood reflect four distinct factors.

7. We controlled for gender and initial attitude in a series of preliminary analyses of covariance. The inclusion of these covariates did not alter the pattern of results; the results from the ANOVAs are presented.

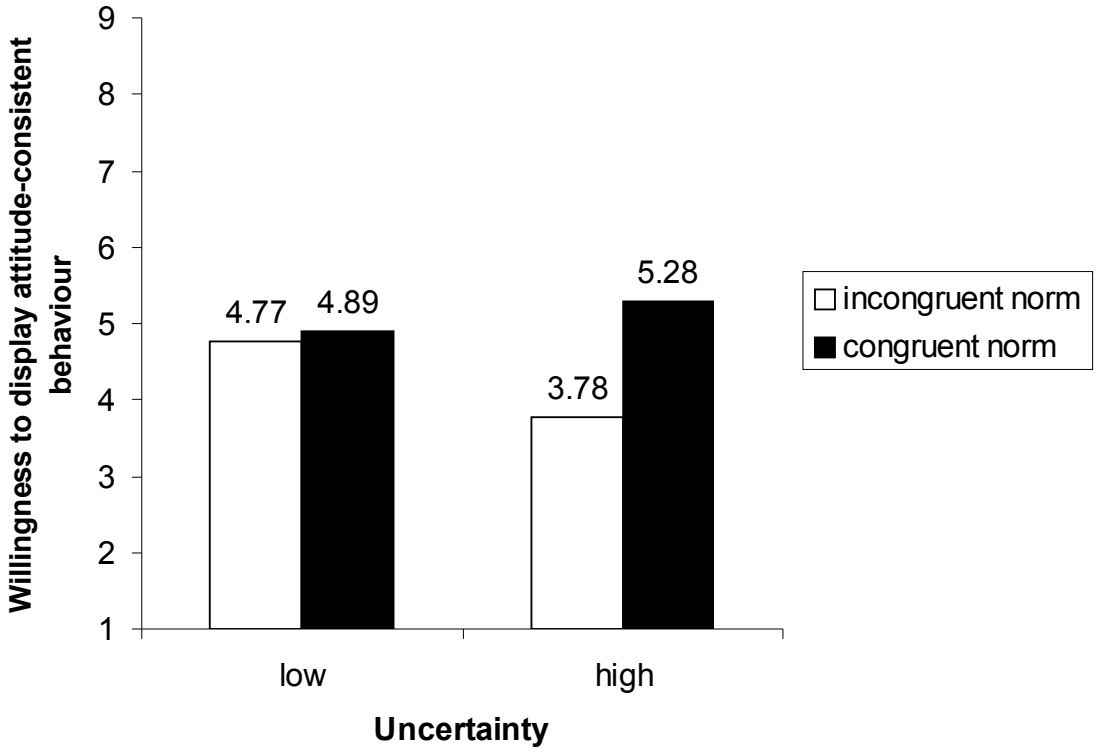

Figure 1. Interaction between uncertainty and normative support on willingness to display attitude-consistent behaviour (Study 1).

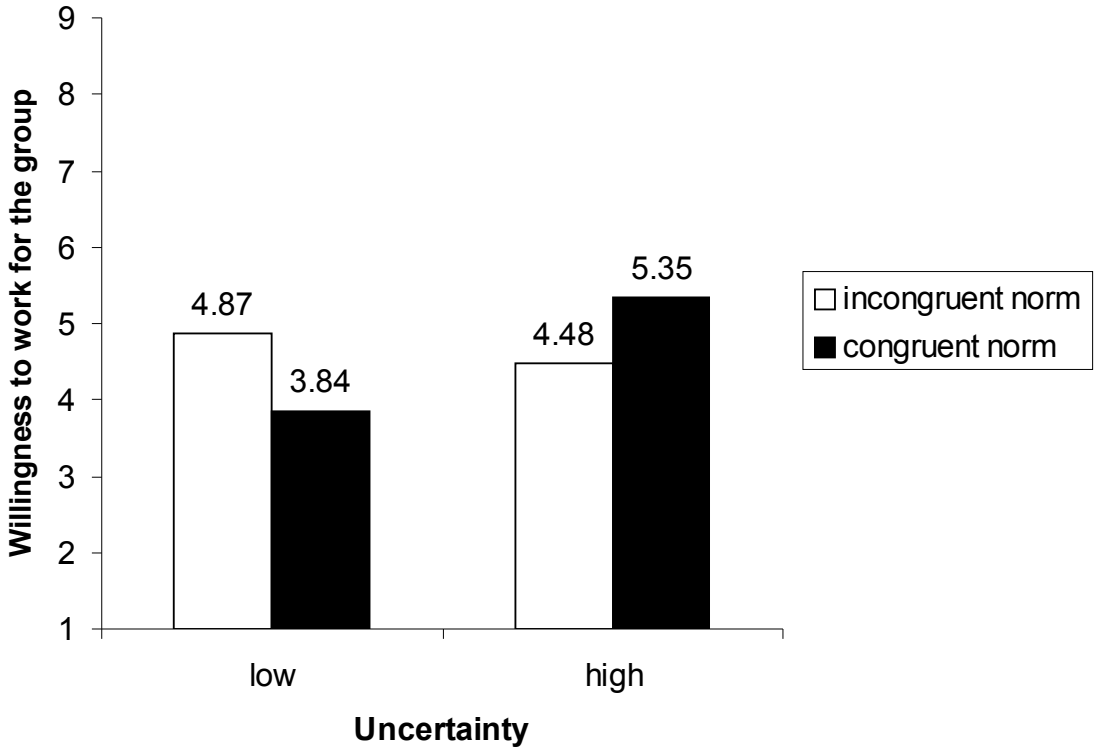

Figure 2. Interaction between uncertainty and normative support on willingness to work for the group (Study 1).

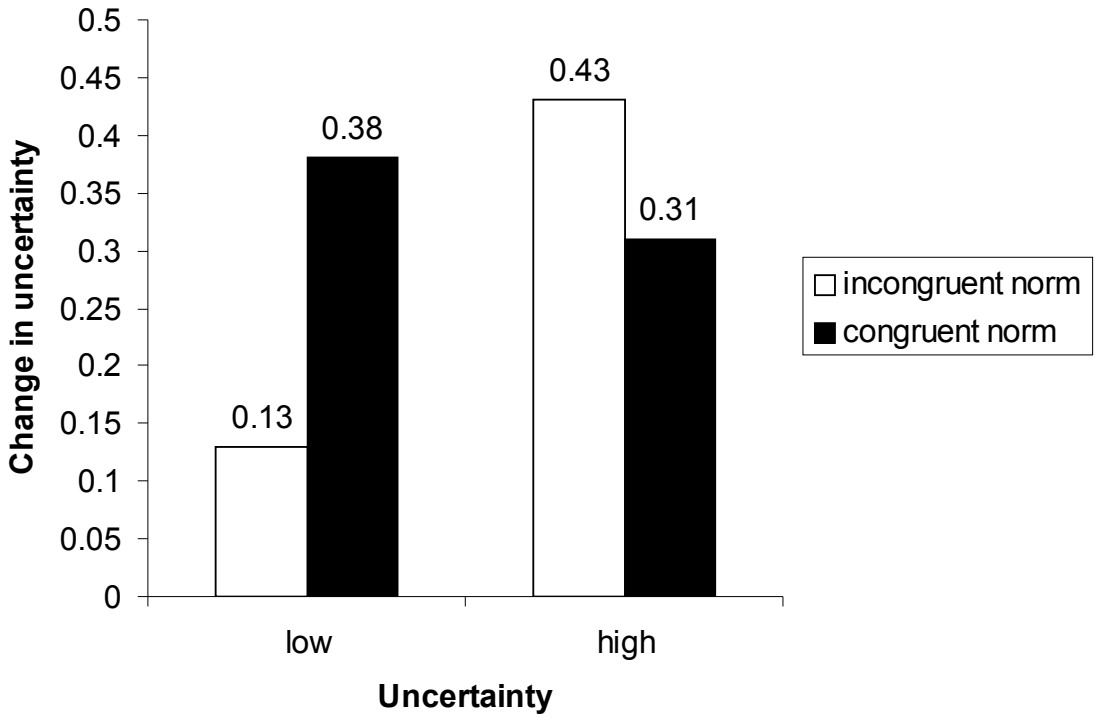

Figure 3. Interaction between uncertainty and normative support on change in uncertainty (positive scores reflect an increase in certainty; Study 1).

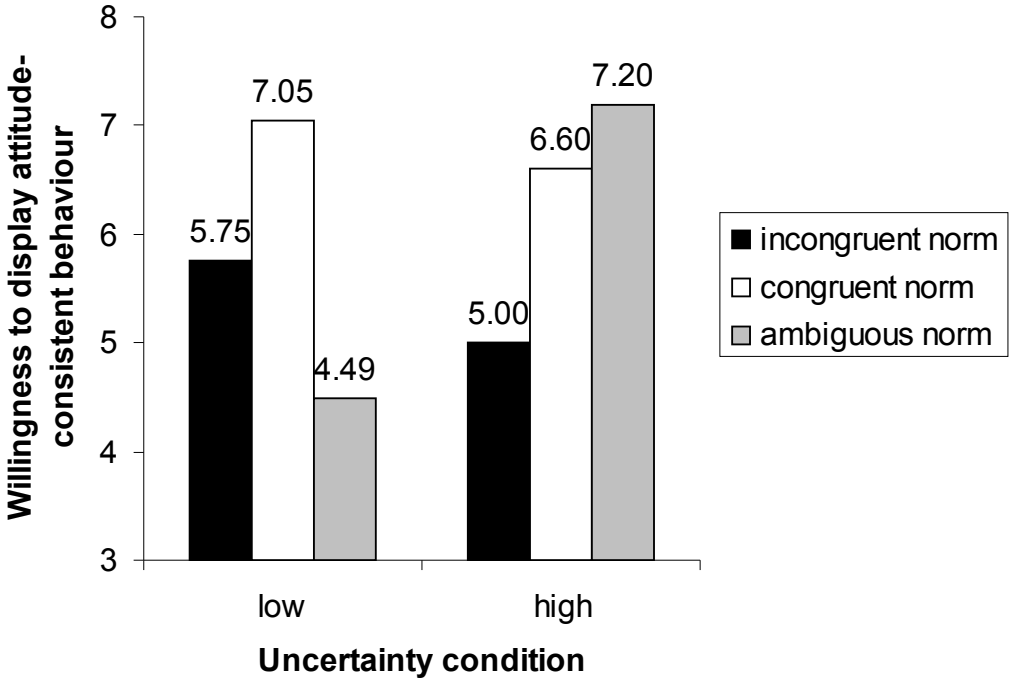

Figure 4. Interaction between uncertainty and normative support on willingness to display attitude-consistent behaviour (Study 2).