

From Attitudes to Behaviour: Basic and Applied Research on the Theory of Planned Behaviour

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The present article traces the development of the theory of planned behaviour, from early research on the attitude-behaviour relationship through the theory of reasoned action. In particular, it is argued that a perceived lack of correspondence between attitude and behaviour led to examination of variables that either *moderated* (e.g., attitude strength, measurement correspondence) or *mediated* (behavioural intention) the relationship between attitudes and behaviour. Several meta-analytic reviews provide strong empirical support for the theory of planned behaviour, yet several applied and basic issues need to be resolved. The six papers that make up the remainder of this special issue address several of these issues.

The social psychological study of attitudes has been one of the core areas of the discipline for decades, described by Allport (1935) as “probably the most distinctive and indispensable concept in contemporary American social psychology” (p. 798). Allport’s view was based on two observations. The first was an assessment of the social psychological literature of the time, which revealed that, “No other term appears more frequently in the experimental and theoretical literature” (p. 798, Allport, 1935). The second observation was perhaps more important: Allport (1935) argued that the number of functions that attitudes served made the concept indispensable.¹ Indeed, research into the myriad functions that attitudes serve continues to be, and is arguably the fastest-growing area of attitude research (see Maio & Olson, 2000). However, research into one function of attitudes accounts for the vast majority of the psychological literature in this area: that attitudes serve to guide people’s behaviour.

Historically attitudes had been assumed to be predictive of behaviour, although this assumption was often held in the face of compelling evidence to the contrary. Perhaps the most widely cited example of the discrepancy between attitudes and behaviour is LaPiere’s (1934) study. LaPiere (1934) took an extensive tour of the United States in the company of a young Chinese couple. At the time, there was much anti-Chinese sentiment and so (unknown to his companions) LaPiere (1934) made notes of the way

in which they were treated. During their travels, LaPiere and his companions visited 250 establishments, yet on only one occasion were they refused service. When LaPiere (1934) subsequently wrote to the same establishments, 118 (of the 128 replies) said they would *not* accept members of the Chinese race as guests at their establishment. LaPiere (1934) concluded that there was a large gap between attitudes and behaviour, and that questionnaire data could not always be trusted to be reliable. Corey (1937) also sought to address this issue directly and used a highly reliable measure to assess attitudes toward cheating, yet found a correlation of only ($r = .02$) between attitude and an objective measure of behaviour. In reviewing the literature in this area, Wicker (1969) examined forty-two studies, finding that attitudes generally correlated only $r = .15$ with behaviours, and that the correlations rarely exceeded $r = .30$. Wicker (1969) concluded: "taken as a whole, these studies suggest that it is considerably more likely that attitudes will be unrelated or only very slightly related to overt behaviours than that attitudes will be closely related to actions" (p. 64).

In our view, Wicker's (1969) review can be regarded as the point at which social psychologists lost interest in simply noting the relationship between attitudes and behaviour, and began examining in depth the circumstances under which attitudes were predictive of behaviour. Thus, social psychologists interested in attitude-behaviour relations responded to Wicker's (1969) review by looking at several "third-variable" explanations, namely whether there were as-yet-unmeasured variables that could explain why there was not a direct relationship between attitudes and behaviour. In other words, attitude-behaviour researchers began to investigate potential moderators and mediators of the attitude-behaviour relationship (see Baron & Kenny, 1986). The following section briefly considers potential moderators, before turning to consider *behavioural intention*, regarded as the key mediator of attitude-behaviour relations.

Moderators of the Attitude-Behaviour Relationship

One approach to understanding the circumstances under which attitudes do predict behaviour, has been to test potential *moderators* of the attitude-behaviour relationship. A moderator variable "partitions a focal independent variable into subgroups that establish its domains of maximal effectiveness in regard to a given dependent variable" (p. 1173, Baron & Kenny, 1986). In terms of the attitude-behaviour relationship, attitude strength is regarded as a key moderator variable: stronger attitudes are likely to be more predictive of people's behaviour than are weak attitudes. In recent years more than a dozen facets of attitude strength have been tested, several of which have been found to moderate the attitude-behaviour relationship. For example, attitudes are generally more predictive of subsequent behaviour if they are: univalent rather than ambivalent (e.g., Conner & Sparks, 2002), accessible in memory (e.g., Kokkinaki & Lunt, 1998), or are personally involving (e.g., Thomsen, Borgida, & Lavine, 1995).²

A related area has examined the moderating influence of measurement on attitude-behaviour relations. Most notable in this area is the work of Fishbein and Ajzen (1975) and their *principle of correspondence* (see also Ajzen & Fishbein, 1977). In an example we used earlier, Corey (1937) tried to address the issue of measurement reliabil-

ity by using an established and reliable attitude scale, yet found an attitude-behaviour correlation of only $r = .02$. Fishbein and Ajzen (1975) noted that unreliability of measurement was only one possible explanation for the discrepancy between the prediction of intention and that of behaviour. In particular, Fishbein and Ajzen (1975) noted that often, very global attitudes (e.g., attitude to religion) were used to predict very specific actions (e.g., attending church), and argued that wherever possible, measures of attitude and behaviour should match one another in terms of action, time, target and context. That is, an individual's attitude toward exercising (action), to get fit (target), in the gym (context), in the next week (time), should be more closely related to a measure of behaviour designed to tap exercising to get fit in the gym in the preceding week, than (say) an index of fitness. Consistent with this view, there are now numerous studies showing that when measures of attitude and behaviour correspond, the correlation between the two is greater. For example, Davidson and Jaccard (1979) found that general attitudes to contraception were poor predictors of birth control pill use ($r = .08$) compared with a more specific measure of attitude ($r = .57$). Moreover, in a meta-analysis of eight studies that manipulated level of correspondence, Kraus (1995) found that "specific attitudes were significantly better predictors of specific behaviours than were general attitudes (combined $p < .0000001$)" (p. 64).

In sum, a variety of moderators of the attitude-behaviour relationship have been tested. Both attitude strength and the way in which attitudes and behaviours are measured seem to affect the magnitude of the attitude-behaviour relationship. However, one problem with research into attitude strength is that there are many different measures of attitude strength, which seem to act independently of one another. For example, in three independent studies Krosnick, Boninger, Chuang, Berent, and Carnot (1993) tested as many as thirteen different indices of attitude strength, with the goal of determining a coherent structure. The authors concluded that, "we were unable to detect any stable structure underlying these correlations. Exploratory factor analyses did not produce reliable evidence of a relational framework underlying these dimensions" (Krosnick et al., 1993, p. 1143). The implication is that there is some way to go in understanding the effects of attitude strength on attitude-behaviour relations, and that further research is required. Alternatively, one could argue that to further understanding about attitude-behaviour relations, one should consider factors that might mediate the relationship between attitudes and behaviour. We address this issue in the following section.

"There's Only One Mediator, One Mediator":

The Role of Behavioural Intentions in the Attitude-Behaviour Relationship

The second approach to understanding attitude-behaviour relations is to examine variables that might mediate the attitude-behaviour relationship. By "mediator," we are referring to a variable "which represents the generative mechanism through which the focal independent variable is able to influence the dependent variable of interest" (Baron & Kenny, 1986, p. 1173). As far as we are aware, only one variable has been investigated in this regard, namely *behavioural intentions* (e.g., Fishbein & Ajzen,

1975). Behavioural intentions are regarded as a summary of the motivation required to perform a particular behaviour, reflecting an individual's decision to follow a course of action, as well as an index of how hard people are willing to try and perform the behaviour (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). The idea that behavioural intentions mediate the attitude-behaviour relationship represents a significant move away from the traditional view of attitudes: rather than attitudes being related directly to behaviour, attitudes only serve to direct behaviour to the extent that they influence intentions. Thus, Wicker's (1969) pessimistic review of the attitude-behaviour relationship might have reflected the fact that intentions are the principal proximal determinant of behaviour, not attitudes (for a review see Sheeran, 2002).

The Theory of Reasoned Action

Fishbein and Ajzen's (1975) view that the influence of attitude on behaviour is mediated through behavioural intentions is the cornerstone of their *theory of reasoned action*. The theory of reasoned action goes further than the inclusion of intention as a mediator of the attitude-behaviour relationship, it holds that attitude is only one determinant of intention and that social pressure is also likely to determine people's intentions. Thus, within this theory of reasoned action, behavioural intentions are determined by attitudes (overall positive/negative evaluations of behaviour) and the perceived social pressure from significant others, *subjective norms*.

Fishbein's (1967a, 1967b) work on the summative model of attitudes underpins the theory of reasoned action. Briefly, Fishbein's model holds that individuals may possess a large number of beliefs about a particular behaviour, but that only a subset are likely to be salient at any one time. Thus, both attitudes and subjective norms are determined by salient underlying beliefs. Salient behavioural beliefs are held to determine attitudes. Each behavioural belief consists of two components: an outcome belief and an outcome evaluation. The outcome belief concerns beliefs about the likelihood of particular outcomes occurring, for example the perceived likelihood that one will lose weight if one diets, or the likelihood that smoking causes cancer. Outcome beliefs are weighted (multiplied) by outcome evaluations to form each behavioural belief. This is based on the rationale that only outcomes that are valued are likely to impact upon one's attitudes.

Salient normative beliefs underpin subjective norms. Consistent with behavioural beliefs, normative beliefs consist of two components: referent beliefs and motivation to comply. Again the two components are multiplied, because one is only likely to experience social pressure from particular referents if one is motivated to comply with those particular referents. Consider the following example of the normative pressure underpinning Gary's intention to use a condom. Gary's mother might want her son to use a condom every time he has sex with a new partner, but Gary is only likely to do so to the extent that he is motivated to comply with his mother (very little in this case). Similarly, Gary's latest partner also wants Gary to use a condom every time he has sex with her; in this case, however, Gary is very motivated to comply with his new partner

and therefore is more likely to intend to use a condom. Within the theory of reasoned action, both behavioural and normative beliefs are summed to produce a global measure of attitude. More commonly, however, researchers simply use a global measure of attitude to provide a summary of the belief-forming process.

Several quantitative and narrative reviews provide support for the utility of the theory of reasoned action in predicting intentions and behaviour (e.g., Sheppard, Hartwick, & Warshaw, 1988; van den Putte, 1991). For the prediction of behavioural intention from attitude and subjective norm, Sheppard et al. (1988) found an average multiple correlation of $R = .66$ and an average intention-behaviour correlation of $r = .53$. Thus, the theory of reasoned action possesses adequate predictive validity. Interestingly, the behavioural intention construct is considered sufficiently predictive of behaviour that many researchers use it as a dependent variable, assuming that intentions consistently lead to behaviour (but see Sheeran, 2002).

The Theory of Planned Behaviour

Although the theory of reasoned action accounted for what Cohen (1992) would describe as a “large” proportion of the variance in behaviour, researchers noted that the theory of reasoned action was an effective predictor of certain classes of behaviour but not others. In fact, Ajzen (1988) himself conceded that, “The theory of reasoned action was developed explicitly to deal with purely volitional behaviours” (p. 127); in other words, relatively simple behaviours, where successful performance of the behaviour required only the formation of an intention. Thus, the theory of reasoned action implies that behaviour is solely dependent on personal agency (i.e., the formation of an intention), and that control over behaviour (e.g., personal resources or environmental determinants of behaviour) is relatively unimportant.

In order to address this issue, Ajzen (1988) proposed “a conceptual framework that addresses the problem of incomplete volitional control” (p. 132), namely the *theory of planned behaviour* (Ajzen, 1988, 1991). The theory of planned behaviour (see Figure 1) extended the theory of reasoned action by including *perceived behavioural control* as a determinant of both behavioural intention and behaviour. The inclusion of perceived behavioural control as a predictor of behaviour is based on the rationale that: holding intention constant, greater perceived control will increase the likelihood that enactment of the behaviour will be successful. Further, to the extent to which perceived control reflects actual control, perceived behavioural control will directly influence behaviour. Perceived behavioural control therefore acts as both a proxy measure of actual control and a measure of confidence in one’s ability. Within the theory of planned behaviour, perceived behavioural control is posited as a third determinant of intention: thus, the easier a behaviour is, the more likely one will intend to perform it.

As with the attitude and subjective norm constructs, Ajzen posited that *control beliefs* underpin perceived behavioural control. Control beliefs are the perceived frequency of facilitating or inhibiting factors multiplied by the power of those factors to inhibit/facilitate the behaviour in question. Congruent with the other belief compo-

nents in the theory of planned behaviour, it is the control beliefs that are salient at any one time which determine global perceptions of control.

There have been several meta-analytic reviews of the theory of planned behaviour, all of which have concluded that the augmentation of the theory of reasoned action with measures of perceived behavioural control has contributed significantly to the prediction of behavioural intentions and behaviour (see Ajzen, 1991; Armitage & Conner, 2001; Godin & Kok, 1996). The most recent of these meta-analyses (Armitage & Conner, 2001) reviewed 185 independent studies and found that the theory of planned behaviour accounted for 27 percent of the variance in subsequent behaviour, and 39 percent of the variance in behavioural intentions. As predicted, perceived behavioural control added significantly to the prediction of intention and behaviour, even after controlling for the effects of theory of reasoned action variables. In sum, the theory of planned behaviour extends the theory of reasoned action and accounts for considerable proportion of the variance in intention and behaviour. At present, the theory of planned behaviour is arguably the most dominant model of attitude-behaviour relations.

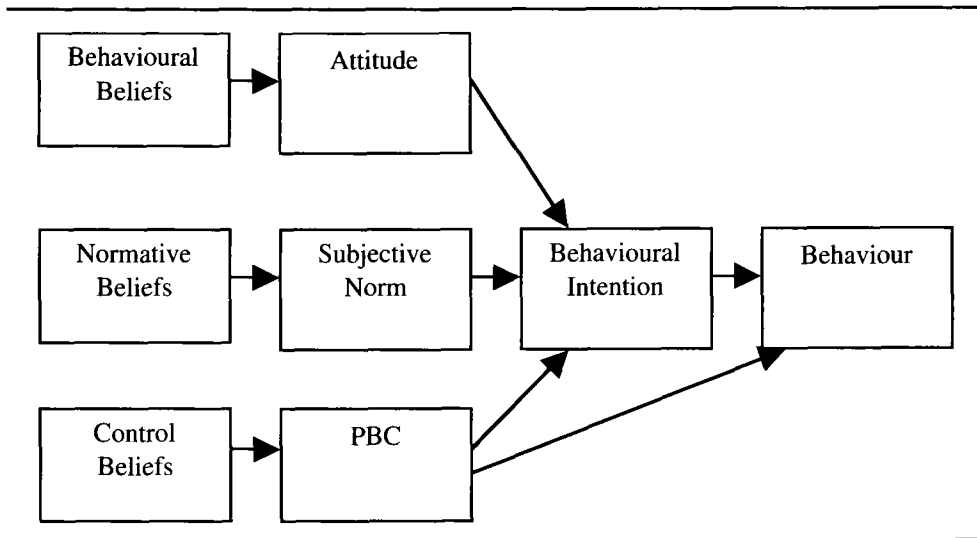
The Special Issue

Despite considerable empirical support for the theory of planned behaviour, there are still issues of debate with which researchers are currently engaged. Perhaps more so than many other theories in social psychology, research into the theory of planned behaviour can properly be regarded as "action research," in so far as many of the theoretical advances have been made in relation to applied areas (Lewin, 1951). Accordingly, the chapters in this volume deal with both applied and basic research questions.

Research in the applied domain has typically examined whether the theory of planned behaviour is truly a general model of social behaviour by (for example) sampling diverse populations (e.g., Christian & Armitage, 2002), or by using the model to develop effective behaviour change strategies (e.g., Armitage & Conner, 2002). More basic-oriented research, on the other hand has tended to focus on developing the theory of planned behaviour *per se*. This body of research has, for example, examined potential moderators of relationships between components (e.g., Conner, Sheeran, Norman, & Armitage, 2000), as well as the predictive validity of additional variables (Conner & Armitage, 1998). With respect to the latter, Ajzen (1991) encourages the exploration of additional variables and regards the theory of planned behaviour as, "open to the inclusion of additional predictors if it can be shown that they capture a significant proportion of the variance in intention or behaviour after the theory's current variables have been taken into account" (p. 199). Accordingly, most of the contributions within this special issue blend applied and basic issues to great effect. The following section provides an overview of the specific contributions that appear in this volume.

As we have already noted, one of the strengths of the theory of planned behaviour is its broad applicability: applications of the model can be found across numerous disci-

FIGURE 1
The Theory of Planned Behavior



plines, including nursing, information technology, social policy and sociology. Even within psychology, research has not been restricted to the domain of social psychology: the theory of planned behaviour is currently regarded as the dominant model in the field of health psychology (e.g., Armitage & Conner, 2000). Therefore, two chapters examine the generalizability of the model in two ways. First, O'Connor and Armitage report the application of an augmented theory of planned behaviour to parasuicide, an area that has been relatively neglected by social psychologists, yet might benefit from a theory of planned behaviour approach. O'Connor and Armitage's study provides support for the application of the theory of planned behaviour to parasuicide behaviour, for the inclusion of moral norm within the model, and suggests ways in which the model may be used to prevent parasuicidal behaviour.

Second, Christian, Armitage, and Abrams report an application of the theory of planned behaviour to homeless populations: whereas much research into the theory of planned behaviour has investigated university students, much less has focused on general population samples. The Christian et al. study introduces a further innovation by examining a much-stigmatised and under-researched group, namely homeless people. Among the challenges the study addresses is how to operationalize key constructs when the population may be unwilling or unable to complete standard measures. Moreover, the paper takes a lead from social group theorists to further examine the effects of social categorisation on norms within the theory of planned behaviour.

The third article, by Ravis and Sheeran is a meta-analysis of the role of descriptive norms within the theory of planned behaviour. Arguing that the subjective norm component accounts well for the effects of injunctive norms—but not descriptive norms—on individuals, Ravis and Sheeran review the effects of descriptive norms in the theory

of planned behaviour, finding that descriptive norms might usefully be included within the theory of planned behaviour framework.

In the fourth article, Sutton, French, Hennings, Wareham, Griffin, Hardeman, and Kinmonth deal with the issue of belief elicitation. As we noted above, a key aspect of the theories of reasoned action and planned behaviour is that salient underlying beliefs need to be measured. To date, very little research has addressed how this might actually be done. The Sutton et al. paper manipulates question wording and reports on the different kinds of beliefs that are elicited. The study also tests various decision-rules for determining which beliefs are actually "salient."

The fifth contribution, from Conner, Smith and McMillan, focuses on the effects of normative pressure within the theory of planned behaviour—specifically in relation to breaking the speed limit. An interesting aspect of this study is Conner et al.'s attempt to experimentally manipulate a key component of the theory of planned behaviour: it has often been noted that while there is ample correlational evidence in support of the theory of planned behaviour, there is actually very little experimental work in this regard (e.g., Armitage & Conner, 2001; Sutton, 1998). The researchers manipulate whether or not a passenger is present as well as the gender of the passenger, finding an interesting interaction between normative pressure, gender, and physical presence (i.e., a moderating effect).

The final article, by Abraham and Sheeran argues that the predictive validity of the theory of planned behaviour could be enhanced with reference to goal theory. At the root of their argument is the idea that where typical theory of planned behaviour studies stop (i.e., with a one-off behaviour), goal theory starts, and that conceptualising behaviour as part of a process that leads to higher-order goals will lead to improved intention-behaviour relations.

Thus, this special issue considers a full spectrum of important developments that all enhance our understanding of, and efforts to extend the theory of planned behaviour. From applications through to new avenues for research, the six papers in this edition address important issues surrounding theoretical and practical approaches to attenuating problems in attitude-intention-behaviour research.

NOTES

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1. This quotation has also become the bane of undergraduate students taking courses in social psychology the world over—the Allport (1954) quotation is often embellished with a *Discuss* at the end.
2. Readers who are interested in this area of research should consult Petty and Krosnick's (1995) volume, "Attitude strength: Antecedents and consequences."

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