

THE RELATIONSHIP BETWEEN ATTITUDES AND BEHAVIOUR, AND CONDOM USE

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Introduction

Condom use increased as the preferred method of contraception from 6% (1975) to 36% (1999-2000) of contraceptives given out by English Family Planning Clinics (Kmieltowicz 2000). The contraceptive pill dropped from 70% to 43% in the same period. But does this mean that condoms are being used more today in actual sexual intercourse situations?

Condom use is not high among single heterosexuals if surveys are to be believed: eg 78% of US adults questioned admitted not always using one (Choi and Catania 1996). In Godin et al's (2005) Canadian study, 40.4% of single heterosexual women and 34.0% of men "did not use a condom during the last sexual intercourse".

Condom use is a prime example where individuals say one thing (attitude) and do another (behaviour). What is the link between attitudes and behaviour? Is there consistency between them?

ATTITUDES AND BEHAVIOUR

Bem (1979) defined attitudes simply as likes and dislikes. Zanna and Rempel (1988) preferred to use a more complex definition:

(T)he categorization of a stimulus object along an evaluative dimension based upon, or generated from, three general classes of information: (1) cognitive information, (2) affective/emotional information, and/or (3) information concerning past behaviours or behavioural intentions (p319).

A number of points can be drawn out from this technical definition (Potter 1996), and applied to condom use (table 1).

It seems from this definition that an attitude is a well thought out and complex thing, and most importantly should predict behaviour. Accurate prediction is a highly sort skill in psychology as well as being able to use the knowledge to change attitudes, whether for health reasons or related to consumerism.

McGuire (1986) distinguished three historical phases in the study of attitudes: the first being the focus on the relationship between attitudes and behaviour in the 1920s and 1930s. Subsequently other issues about attitudes have dominated research interests.

ASPECT OF DEFINITION	EXAMPLE WITH CONDOM USE
"categorization" - division of world into perceived categories	condom use/no condom/other contraceptives
"stimulus object" - focus of the attitude	condoms
"evaluative dimension" - judgment system as positive or negative	condom use is good or bad
"based upon, or generated from, information" - basis of attitude is information	medical information about contraceptives
"cognitive information" - "objective" beliefs about stimulus object	condoms are effective as a means of contraception
"affective/emotional information" - feelings about stimulus object	"I don't like using them"
"information concerning past behaviours or behavioural intentions" - past behaviour towards stimulus object	use of a condom at the last sexual intercourse

Table 1 - Definition of an attitude applied to condom use.

The problem is not that attitudes predict behaviour (and vice versa) only some of the time, but that many studies find little relationship between the two. A classic example of this situation is the oft quoted La Piere (1934) study.

EXAMPLE OF RESEARCH: LA PIERE (1934)

The researcher visited 251 hotels and restaurants in America with a Chinese couple (during a period of anti-Chinese feeling). On no occasion were the three visitors refused service.

La Piere then wrote to all the places six months later that were visited, asking if it was alright to bring the Chinese guests. Of the 128 replies, 92% refused. Similar refusal rates were found with hotels and restaurants that had not been visited (table 2).

La Piere also asked whether the same establishments would accept German, French or Japanese people as guests, and got similar results (table 3).

Replies to question: "Will you accept members of Chinese race as guests in your establishment?"

	Hotels and Restaurants:	
	Visited	Not Visited
Yes	1	0
No	60	66
Undecided	4	5

(After La Piere 1934)

Table 2 - Number of replies to questions about Chinese guests.

Replies to question: "Will you accept members of the German, French or Japanese race as guests in your establishment?"

	Hotels and Restaurants:	
	Visited	Not Visited
Yes	0	1
No	58	52
Undecided	5	4

(After La Piere 1934)

Table 3 - Number of replies to question about German, French and Japanese guests.

EVALUATION

i) Different people may have filled out the questionnaire as to who served the visitors. Campbell (1963) called this "pseudo-inconsistency" between attitudes and behaviour.

ii) What about the non-respondents to the questionnaire? What views might they have held?

iii) The Chinese couple spoke good English, had good social skills, and smiled a lot. La Piere noted that "even where some tension developed due to the strangeness of the Chinese it would evaporate immediately when they spoke in unaccented English" (p232).

iv) If the Chinese couple had been by themselves, the reaction may have been different, but they were with an American.

v) The embarrassment of turning away individuals standing in front of you, who did not fit the stereotype of Chinese people, outweighed any attitudes against

Chinese guests. There is also a conflict between "good service" and views on Chinese guests.

vi) This study is not completely controlled like an experiment, it is a quasi-experiment. In other words, there are confounding variables like whether the interactions with staff used the same language and were the same length each time.

Since this study, more controlled research has looked at the relationship between attitudes and behaviour. Wicker's (1971) classic study attempted to predict religious behaviours (eg: church attendance on Sundays) from attitudes about religion. None of the variables were significantly related.

Wicker (1971) also made a review of studies of attitudes and behaviour using strict criteria for each study:

- At least one attitude and one behaviour measure per person of the same stimulus object;
- The measurement of attitude and behaviour on separate occasions;
- The behaviour measure must not be the participant's own self report of past behaviour.

This gave 31 studies (and 15 studies from Wicker 1969) ⁽¹⁾. No correlation between attitude and behaviour was above 0.3. Wicker concluded unhappily that "these studies suggest that it is considerably more likely that attitudes will be unrelated or only slightly related to overt behaviours.." (p161). The question is why is this the case.

Applying this explanation to condom use, individuals are simply saying one thing (usually that they do use them) and doing another (not using them during intercourse). Inconsistency between the attitude and the behaviour is part of the question rather than an answer.

It could be looked at another way, which is why should people be consistent. It is an assumption that consistency between attitudes and behaviour is desirable, and a "normal" part of life. It goes hand in hand with the consistency of personality that is believed by most psychologists to exist.

From a social constructionist point of view, we are products of social interactions, society, and its discourses. The self is "distributed" (ie: it exists in more than one solitary place), and is multi-faceted (Brewer 2000). In other words, the concept of consistency is socially constructed.

According to this view, the use of a condom during sexual intercourse will be a product of the social interaction between the man and the woman, or between the men rather than an individual's decision to use it or not based on their attitude towards condoms.

2. Specific and general attitudes and behaviour

Attitude and behaviour are not related because researchers are focusing on general attitudes and general behaviour rather than specifics.

Davidson and Jaccard (1979) showed that general attitudes and general behaviour do not go together; eg: general attitude towards birth control and use of it (correlation of +0.08). But specific attitudes and specific behaviour are more predictable; eg: attitudes towards individual using contraceptive pill and actual use in following two years (correlation +0.57) (table 5).

ATTITUDE	ATTITUDE-BEHAVIOUR CORRELATION
contraceptives generally	+0.08
contraceptive pill	+0.32
using contraceptive pill generally	+0.53
using contraceptive pill in next two years	+0.57

(After Davidson and Jaccard 1979)

Table 5 - Correlation between different attitudes and use of the contraceptive pill (behaviour).

Weigel et al (1974) showed that a general pro-environment attitude did not predict assistance to the Sierra Club (an environmental campaign organisation) in the USA, but a positive attitude towards the Sierra Club did.

On the other hand, Weigel and Newman (1976) found a different relationship. They observed behaviour related to the environment (eg: recycling) while comparing attitudes towards the environment on a sixteen-item questionnaire. General attitudes did not predict specific behaviours, but it did predict general environmental behaviour ($r = +0.62$).

Ajzen and Fishbein (1977) found that 54 of 109 studies reviewed had tried to compare general attitudes with specific behaviour. The remainder, however, did not find consistency between attitudes and behaviour.

3. Influence of experience

Attitudes based on direct experience are more predictable of behaviour (Fazio and Zanna 1981). Direct experience produces attitudes that are clear, confident and stable as well as being more accessible. Students with direct experience of homelessness showed greater attitude-behaviour consistency to help to resolve the problem of homelessness for others (Regan and Fazio 1977).

In another experiment, Regan and Fazio (1977) used unusual puzzles with a group of students. Half were given the puzzles to look at and rate (direct experience condition), while the other participants were only told about them (indirect experience condition). Then the participants had chance to do the puzzles. The correlations between rating of liking and actually doing the puzzles were much higher for the direct experience compared to the indirect experience condition ($r = +0.51$ to $+0.54$ versus $+0.20$ to $+0.22$).

Direct experience will increase the likelihood of recalling certain attitudes. Fazio et al (1983) argued that the ease of recall of attitudes will influence an individual's perception of the stimulus object, and their whole understanding of attitudes and behaviour. For example, a positive attitude towards condoms will trigger only positive memories related to them, and this will influence behaviour.

On the other hand, a negative personal experience with a condom could lead to a negative attitude and refusal to use them. Negative experiences may be more powerful in discouraging their use than positive experiences in encouraging their use.

4. Attitudes and behaviour are separate

Eiser and van der Pligt (1988) argued that attitudes do not cause behaviour because attitudes and behaviour are "separate response systems". They are unlikely to be systematically related except for in two conditions: when attitudes and behaviour have a "common learning history", and the individual decides what attitudes and behaviour go together. In the latter case, we can reflect upon our attitudes and behaviour, and decide to be consistent.

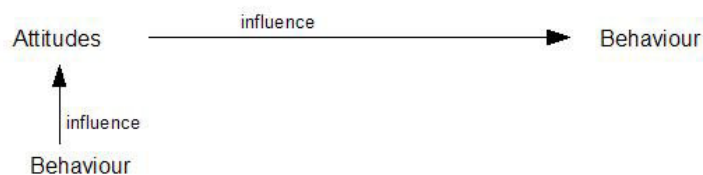
5. Attitudes and behaviour are indirectly related

It is assumed that attitudes cause behaviour, but there are other possible relationships (Bohner and Scharwz 2003) (figure 2).

TRADITIONAL VIEW



ALTERNATIVE VIEW 1



ALTERNATIVE VIEW 2

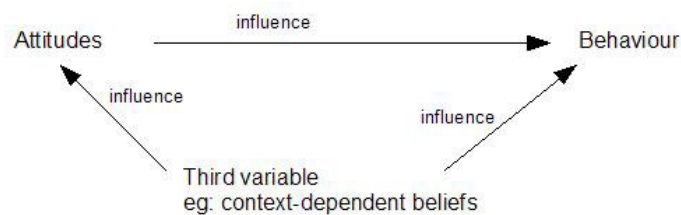


Figure 2 - Two other possible relationships between attitudes and behaviour.

Behaviour may not be influenced by attitudes, but by:

i) Values ("implicit organizers of judgements about the capacity of things, people, actions, and activities to satisfy requirements and desires"; Rohan and Zanna

2003 p467) and value systems;

ii) Worldviews (beliefs about how things in the world are and should be);

iii) Ideology ("set of associations between things, people, actions, or activities and satisfaction of requirements and desires"; Rohan and Zanna 2003 p469).

Moral Norms

Another possibility is something else that predicts behaviour like moral norms (an individual's personal standards of conduct) (Godin et al 2005b). The individual will perform the behaviour, in this case, because of moral obligation or conviction (according to the norm-activation theory; Schwartz 1977). Godin et al (2005b) preferred the idea of moral norms influencing intention to do the behaviour, which leads to the behaviour (figure 3).

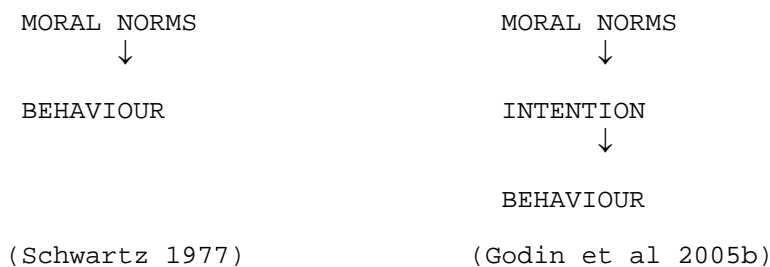


Figure 3 - Moral norms and behaviour.

Godin et al (2003) supported the indirect relationship in a study of regular condom use over a two-year period by single heterosexual adults.

Behaviour intention as predictive of behaviour is important in recent models of the relationship between attitudes and behaviour, and these are discussed later.

Motivational States

The relationship between attitudes and behaviour may be mediated by motivational states, or according to reversal theory (Apter 1997), "meta-motivational states". These are four pairs of states that motivate individuals. One pair is telic (serious-minded) versus paratelic (playful). Individuals can switch between the two versions.

Taking the example of a man who sees condom use as

positive. Whether he uses a condom will depend upon which "meta-motivational state" dominates at the time of the sexual encounter: telic (more likely to use it) or paratelic. In the telic state, individuals are more likely to perform the "healthy" behaviour.

B. NATURE OF ATTITUDES

1. What are attitudes

There are disagreements over what attitudes actually are in terms of their components. Thurstone (1931) saw attitudes as one component only, namely "the affect for and against a psychological object". Allport (1935) preferred two components - a "mental readiness to act" and an evaluative part. While Secord and Backman (1964) distinguished three components - cognitive, affective, and behavioural.

If there is no agreement over what attitudes are, then it is going to be difficult to relate them to behaviour.

For example, an individual knows that restaurant X provides better food than restaurant Y (cognitive component). But they like the atmosphere of Y better (affective component). Which component predicts the behaviour?

2. Function of attitudes

Attitudes fulfil a number of functions for the individual rather than being a statement for future behaviour (Katz 1960):

i) Adjustive (adaptive) - help in identifying aspects of the world; those to choose and avoid;

ii) Knowledge - helps in understanding of social world;

iii) Value-expressive (self expressive) - part of the expression of the self and of identity. Smith and Stasson (2002) noted how attitudes were related to an individual's identification with a particular group;

iv) Ego defensive - helps in the protection of the self.

Table 6 gives examples of the functions in relation to condom use.

FUNCTION	EXAMPLE WITH CONDOM USE
adjustive	condom use protects against HIV/AIDS
knowledge	condom use is not necessary with a regular partner
value-expressive	I do not like to wear condoms as they reduce sensitivity
ego defensive	I use condoms, so not using them is irresponsible

Table 6 - Examples of different functions of attitudes.

3. Attitudes are not individualised, objective beliefs

Potter (1996) was critical of the assumption that attitudes are individual possessions because many people share similar views and beliefs. Social representation theory argued that individual attitudes develop from shared social representations in the media and in society rather than directly from the stimulus object (Moscovici 1984).

Thus an individual's attitude towards condom use is not directly related to the condom, but to the social representations of condoms (eg: positive or negative) (figure 4). How the media represents condoms is key here.

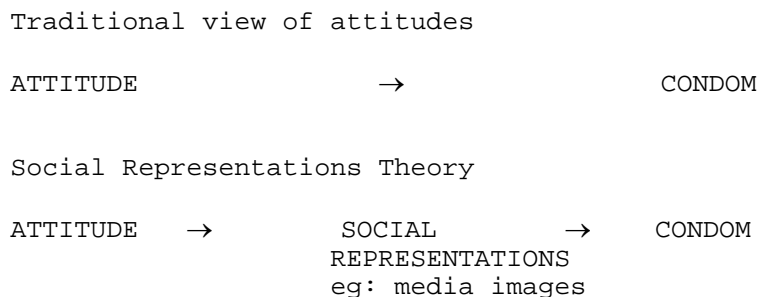


Figure 4 - Attitudes and social representations.

Moving away from individualised attitudes even further, in discursive psychology (Potter 1996), the expression of an attitude is seen as an action. An individual is trying to achieve something in the social world by expressing that opinion rather than an attitude being a statement of fact.

For example, after watching a film, person A meets friend X who says that the film was bad, and person A agrees. Then person A meets friend Y who praises the film, and person A again agrees. Within discursive psychology, person A is not being inconsistent, but is agreeing in order to bond with the friends. The

expression of the agreement is in order to achieve an action.

4. Problems of measuring attitudes

The discrepancy between attitudes and behaviour may be due to the problems in measuring attitudes. An individual's behaviour is not predictable from their attitudes because the attitudes are not measured accurately.

Attitudes can be measured in three different ways:

i) Direct measures - ask directly for judgement on the attitude object; eg: Likert Scale (Likert 1932).

The Likert Scale measures the cognitive component of attitudes. A series of statements about the attitude object, and participants choose their level of agreement or disagreement. It usually involves five choices (each with a score which added together produces the total).

Example:

"A condom should always be used during sexual intercourse"

STRONGLY AGREE	AGREE	UNSURE	DISAGREE	STRONGLY DISAGREE
5	4	3	2	1

ii) Quasi-direct measures - ask about related information to the attitude object; eg: Semantic Differential Scale (Osgood et al 1957).

This measures the affective part of attitudes using as little language as possible. The aim is to gain a more instant response than the Likert scale, so less risk of social desirability bias. The individual ticks the line that relates to their attitude.

Example:

CONDOMS					
good	—	—	—	—	bad
reduces pleasure	—	—	—	—	increases pleasure

c) Indirect measures - measure information relevant to the attitude without reference to the attitude object;

eg: projective tests like Rorschach Inkbot Test (Rorschach 1921).

The individual responds to a particular stimulus, like an Inkblot, and their answers are analysed and interpreted. What is reported is assumed to be a projection of unconscious motives and emotions. This technique has its origins in psychoanalysis, and is able to discover the non-verbal part of attitudes (ie: the affective component). It is more likely to write an essay with this technique, rather than give single answers as in the other methods.

Example:

Picture of couple walking hand in hand towards the bedroom. Write story about what happens next.

The direct and quasi-direct measures of attitudes make three basic assumptions (Hayes 1994):

- That attitudes can be expressed by verbal statements;
- That the same statements have the same meanings for all individuals;
- That the expressed statements can be measured and quantified.

Table 7 compares the problems of the three ways of measuring attitudes, and figure 5 shows who is interpreting the questions with each method.

DIRECT

- problems of honesty of replies, particularly for controversial topics
- vulnerable to "social desirability bias"; ie: telling the researcher the socially acceptable answer

QUASI-DIRECT

- time consuming to design
- "position response bias": tendency to tick the middle position

INDIRECT

- validity: does it measure what it claims to measure?
- problems of interpreting results

Table - Problems of three ways of measuring attitudes.

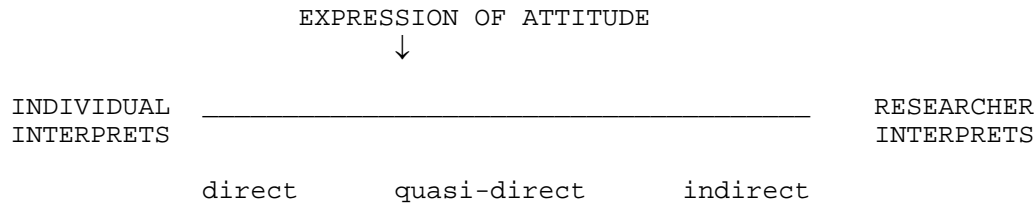


Figure 5 - Ways of measuring attitudes and interpretation.

C. TYPES OF ATTITUDES

1. Strength of particular attitudes

Not all attitudes are held with equal strength (or importance).

Fazio (1986) felt that attitude accessibility (ie ease with which an attitude can be recalled) will be linked to attitude strength. Accessibility of an attitude is enhanced by repeated expression of it.

Deaux et al (1993) believed that:

An understanding of the relationship between attitude and behaviour entails an understanding of the processes involved...The accessibility of an attitude is a major determinant of its ability to predict behaviour, and conditions that make attitudes accessible continue to be researched (p161).

Accessibility of Attitudes

The ease of recall will influence whether the individual is aware of their attitudes when performing a behaviour. Weaker attitudes will rarely come to mind when the individual is performing a behaviour. Fazio (1995) called this "object-evaluation associations" or the automatic activation model (figure 6).

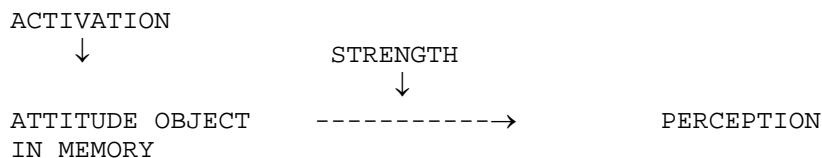


Figure 6 - Strength of attitude and perception.

Fazio et al (2000) showed that highly accessible attitudes can limit an individual's potential to detect change in a perceptual task more so than low accessible attitudes. The attitude recalled affects perception.

The task was to report if a computer picture of a face had changed from the original. Those with low attitude accessibility relevant to the face noticed any changes quicker.

Fazio et al (1986) argued that attitudes with a strong association between the attitude object and the evaluation of the object can be triggered automatically by the mere presence of the attitude object. In other words, strong attitudes will automatically come to mind with the attitude object in a way that is "both spontaneous and inescapable".

The strength of an attitude can be seen as a continuum along the lines of attitude/non-attitude (Converse 1970). At the non-attitude end of the continuum, individuals will answer an attitude questionnaire without ever having formed a definite attitude about an attitude object. While at the other end, the individual has a clear, strong attitude which is triggered automatically by the attitude object.

"If an attitude is activated automatically upon the individual's encountering the attitude object, it is far more likely to guide the individual's behaviour toward that object than if it is not" (Fazio et al 1986).

Automatic activation of attitudes is tested in laboratory experiments by measuring reaction times to certain combinations of words. Participants are shown attitude objects on a computer screen and must respond as quickly as possible by pressing a key designated for "good" or a key for "bad".

Fast responses are assumed to be strong associations. But researchers are concerned that this is not measuring the strength of the association only. So another layer is added to the experiment.

Participants learn a selection of words and associations (known as priming) in the first part of the experiment. Then these words are presented before the attitude objects being measured. Individuals should respond quicker to positively associated words followed by positive attitude objects or negative words and negative attitude objects than incongruent combinations (eg: positive words followed by negative attitude objects) (2). There are issues of validity related to such complex experiments, and if not validity, then applicability to real life attitudes.

Fazio (1990) developed the idea of automatic accessibility of attitudes in his MODE model (motivation, opportunity and determinants). Motivation and opportunity determine whether spontaneous or deliberate processing occurs. In other words, whether there is consideration of

the link between attitudes and behaviour depends on motivation (eg: cost of inconsistency) and opportunity (eg: immediate decision required).

Fazio (1990) quoted a complex laboratory experiment (by Sanbonmatsu and Fazio) to show this theory at work. Participants were told about two department stores, Smith's and Brown's. Most of the information about Smith's was positive, and most about Brown's was negative. But then participants were told about the camera department in each store using the opposite criteria (ie: mostly negative about Smith's and positive about Brown's). The task was to buy a camera.

Under spontaneous processing, the participants would choose Smith's because the general information was positive, and the individual does not think about their behaviour in detail here. But under deliberate processing, Brown's would be the choice because the individual is thinking about their behaviour more (table 8).

	BROWN'S	SMITH'S
General information	negative	positive
Camera department	positive	negative
Type of processing in choice	deliberate	spontaneous

Table 8 - Deliberate and spontaneous processing.

But the experiment also varied the motivation (had to explain decision to group or not) and opportunity (make immediate decision or time for reflection). Only in the condition which allowed deliberate processing did participants choose Brown's store to buy their camera (table 9).

	CONDITION 1	CONDITION 2
Motivation	high	low
Opportunity	reflection	immediate decision
Type of processing	deliberate	spontaneous
Decision	Brown's	Smith's

High motivation = explain decision to group; low = no explanation for decision

Table 9 - Different conditions in the experiment by Sanbonmatsu and Fazio.

Evaluation of Attitude Object

The strength of the attitude itself is not enough for Fishbein (1971), there needs to be an evaluation of the attitude object. Models have applied scores to different aspects of an attitude in order to predict behaviour, and the assumption is that individuals are performing this "cognitive algebra" (Hogg and Vaughan 2002).

Applied to an example of condom use by a young heterosexual male, there are two parts to the model:

i) Strength of the attitude - the degree to which the individual views condom use as positive (scored between 0 and 1);

ii) Evaluation (value) of the attitude object - this is whether condoms are a "good thing" (scored between -2 to +2) on criteria like reliability as a contraceptive and protection against sexual transmitted infections, or interfering with the sexual encounter.

Thus the same strength of attitude can lead to different behaviours depending on the evaluation of the attitude object.

PERSON A				PERSON B		
	STRENGTH	EVAL	RESULT	STRENGTH	EVAL	RESULT
R	0.6	x +2	+1.20	0.6	x -2	-1.20
I	1.0	x +2	+2.00	1.0	x -2	-2.00
		TOTAL	+3.20		TOTAL	-3.20
PERSON C				PERSON D		
	STRENGTH	EVAL	RESULT	STRENGTH	EVAL	RESULT
R	0.6	x +1	+0.60	0.6	x -2	-1.20
I	1.0	x -1	-1.00	0.1	x -2	-0.20
		TOTAL	-0.40		TOTAL	-1.40

(Strength = strength of attitude 0-1; eval = evaluation of attitude object -2 to +2; R = reliability as contraceptive; I = interferes with sexual intercourse)

Table 10 - Likelihood of using a condom based on strength of attitude and evaluation of attitude object.

In table 10, three of the individuals have the same strength of attitude about condoms on two criteria -

reasonable reliability as contraceptive (0.6), but definitely interferes with sexual intercourse (1.0). But person A sees condoms as a good thing, person B does not, and person C is undecided.

For person A, despite the strong belief that condoms interfere with sexual intercourse, he values condoms strongly such that he is most likely to use them. While person D, who has no problem with them interfering with sexual intercourse, but generally rates condoms as bad things, and thus will not use them in this example.

2. Conflict between attitudes

The inconsistency between attitudes and behaviour can be viewed as explicable if several different attitudes are all relevant to a particular behaviour (Ajzen 1988). Thus the individual may be consistent in their behaviour in relation to some attitudes and not others, particularly if there are competing attitudes involved.

The behaviour of using a condom is influenced by many attitudes, not just those about condoms, but also attitudes about appropriate masculine behaviour, for example (figure 7).



Figure 7 - Conflict of attitudes.

Sexual behaviour occurs within the context of specific norms of masculinity with sex as a loss of control which is "destroyed by the need to 'interrupt' intercourse to put on a condom" (Foreman 1999). While for Paiva (1993), "To wear a condom, to be rational, to control sexual drives or take a woman partner's needs into consideration, is to betray maleness".

Alternatively, Chavez (1999) noted how carrying a condom reflected masculinity and social status for adolescents in Mexico (irrelevant of their use).

3. Clustering of attitudes

It may be that there are a number of different attitudes related to a particular behaviour.

A general attitude towards the government, for example, can combine a number of "sub-categories" of attitudes towards specific policies. There may be a pro-government general attitude, but anti-specific policies. This is intra-attitude inconsistency. Being pro-specific policies and pro-government generally is intra-attitude consistency, or high evaluative-cognitive consistency (ECC) (Rosenberg 1968). It could be that this is related to behaviour.

Potter (1996) noted the belief that "attitudes are often assumed to be scattered around in people's heads, rather like currents in a fruitcake" (p135). But researchers are not necessarily able to explain how the attitudes relate together.

Research with mock juries in the USA have found that attitudes come in a "bundle". Death penalty supporters tend to show more trust in police practices and to be more sceptical of the defendant's case than those opposed to the death penalty (Ellsworth 1993).

So condom use may cluster to other attitudes about contraception, for example, including who is responsible for it in a sexual encounter.

4. Difference between public and private attitudes

Werner and DeFleur (1969) developed the experiment of DeFleur and Westie (1958) making the distinction between private and public expression of attitudes. Again white students were tested in relation to their attitudes towards black students and the willingness to do certain activities with them. But the participants either filled in an anonymous questionnaire with their rating of willingness or signed a public letter. There was more consistency between public attitudes and behaviour, which was not expected. This study did have a very low response rate, though, to letters inviting participation (Ajzen 1988).

Public expression of attitudes can be different to privately held views. MacDonald and Nail (2005) defined private attitudes as attitudes "that are consciously recognizable, controllable, and that the attitude holder believes are not directly accessible to anyone other than him or herself", while public attitudes are "made with the belief that one or more other people are able to learn of that expression and attribute it to the attitude

holder" (p17).

Expression of views take place in front of supportive, unsupportive or unknown audiences whose opinion may be valued, not valued, or disdained (MacDonald and Nail 2005). The fear of exclusion, particularly when an audience's opinion is valued, is a powerful motivator in public expressions of beliefs.

Studies in the public-private distinction have realised the problems in measuring the private side because the presence of a researcher exerts social influence: "Thus, social influence researchers, in many cases, may have misapplied the label of 'private' attitudes to participants who have modified reports of their attitudes because of an experiment's evaluation. As a result, some researchers have potentially drawn incorrect conclusions about the nature of public attitudes and the ways they differ from privately held attitudes" (MacDonald and Nail 2005 p17).

The only way to gain access to private attitudes is through complete anonymity. In their questionnaire research, MacDonald and Nail (2005) secured the feeling of complete anonymity by:

- Seating the participants far apart and not facing each other;
- Having the researcher faced away from the participants;
- Getting the participants to place their questionnaires in unidentifiable sealed envelopes placed randomly in a pile.

5. Implicit and explicit attitudes

Recent research has distinguished between explicit and implicit attitudes (Wilson et al 2000). Explicit attitudes are those that an individual expresses and is aware of, while implicit attitudes are automatic (and often outside of conscious awareness). One commonly used way of measuring the latter is the Implicit Association Test (IAT) (Greenwald et al 1998).

This is a computer-based test using response times to pressing certain keys when words appear on the screen. Pairs of words (which contrast like dog and spider) are presented on the screen, and the task is to press a right side key for dog or pleasant words and a left side key for spider or unpleasant words. The keys are then changed, so that right is for dog or unpleasant and left for spider and pleasant, and the same words are presented again.

If the participant is slower in their reaction time in the second version (ie: spider/pleasant and dog/unpleasant) compared to the first version, this is

taken as evidence of an implicit positive attitude towards dogs relative to spiders. There are issues about the validity of this method, the existence of separate attitude systems, and whether IAT can predict specific behaviours (Perugini 2005).

How do explicit and implicit attitudes relate together and to behaviour? There are three possible models (Perugini 2005):

i) Additive - implicit and explicit attitudes added together predict behaviour;

ii) Double dissociation - implicit attitudes predict spontaneous behaviour and explicit attitudes predict deliberate behaviour;

iii) Multiplicative - implicit and explicit attitudes interact together to predict behaviour.

Perugini (2005) performed two separate experiments to test implicit and explicit attitudes and behaviour.

Experiment 1

This involved measuring implicit and explicit attitudes towards smoking among twenty-five smokers and twenty-three non-smokers at the University of Essex. Explicit attitudes towards smoking and exercise were measured by a semantic differential scale containing eleven pairs of adjectives (eg: bad-good, calming-stressful, glamorous-ugly).

Implicit attitudes were measured by the IAT (using five steps - three being practice ones). In the first experimental step, the left key was used for words related to smoking (eg: ashtray, lighter) or pleasant (eg: rainbow, smile), and the right key for exercise (run, swim) or unpleasant (eg: pain, vomit) related words (figure 8).

In the final step, the right and left keys were switched. The IAT was calculated by taking the difference in reaction times between the two experimental steps, and the score showed an implicit positive attitude towards smoking compared to exercise.

Smokers had both more positive implicit and explicit attitudes towards smoking than non-smokers. But only explicit attitudes predicted whether the individual was a smoker or not (behaviour). This was especially true for non-smokers.

SMOKING RELATED WORDS	EXERCISE RELATED WORDS
press "q"	press "p"
PLEASANT ASSOCIATED WORDS	UNPLEASANT ASSOCIATED WORDS
press "z"	press "m"

Figure 8 - How computer screen looked in first experimental version of IAT.

Experiment 2

This focused upon eating snacks or fruit with 109 students. The method followed that of experiment 1, but also included a self-reported behaviour measure of how often individuals ate these two types of foods. Participants could also choose a snack or fruit as they left the experiment.

Implicit attitudes seemed to predict spontaneous behaviour like on-the-spot choice of snack or fruit and not deliberate behaviour, while explicit attitudes the opposite (table 11).

Attitudes:	IMPLICIT	EXPLICIT
Behaviour:		
SPONTANEOUS	.24*	.17
DELIBERATE	.14	.44*

(* = significant)

Table 11 - Relationships from structural equation model.

6. Miscellaneous factors and attitudes

i) Relevance/Personal Involvement

Attitudes formed and developed under conditions of high relevance are more predictable of behaviour than in low relevance conditions.

High-relevance attitudes are formed via the central processing route in the Elaboration Likelihood Model (ELM) (Petty and Cacioppo 1986) as opposed to the peripheral route.

The central route involves more reflection and consideration of information, and the peripheral route is

more superficial and spontaneous. The ELM is usually applied to persuasion and types of arguments to use.

Sivacek and Crano (1982) asked students for help in campaigning against a (fictitious) law that would increase the legal age of drinking alcohol by two years. Students of different ages (eg: 18, 21 years old) reported attitudes against the law, but only the younger students agreed to take part in campaigns (behaviour). They had the vested interest of being affected by the law, whereas older students would not (and their attitudes and behaviour were inconsistent).

ii) Confidence

The degree of confidence about a particular attitude also plays a role in predicting behaviour. Fazio and Zanna (1978) asked students to rate their liking for five types of puzzles while attached to a machine that measured physiology. The machine was used a cover to allow the researchers to give false feedback: half of the participants were told that they held their attitudes with high confidence, and the other half, low confidence.

Participants were then given the opportunity to do the puzzles. Behaviour was measured as which puzzles were tried and the time spent on them. Those in the high-confidence group had a significant correlation (+0.60) between the puzzles they said they liked and actually doing them. While the low-confidence group had a non-significant correlation of +0.44.

iii) Reflection/Reminding of Attitudes

Snyder and Swann (1976) measured the attitudes of male undergraduates towards sexual equality at work. Then two weeks later, the participants were asked to decide upon a fictitious lawsuit for sexual discrimination. Half of the participants were reminded of their answers to the attitude questionnaires, and they showed consistency in their behaviour ($r = +0.58$), irrelevant of whether they supported equality or not. Those participants not reminded were inconsistent in their response to the fictitious lawsuit ($r = +0.07$). However, this study is more about consistency in attitudes over time and situation rather than about attitudes and behaviour.

Encouraging participants to think about their attitudes does not necessarily lead to attitude-behaviour consistency. Wilson and Dunn (1986) asked female students about their attitudes towards a selection of beverages and observed their purchases.

The participants were divided into three conditions to fill out the attitude questionnaire - (i) simply filled out questions (control condition); (ii) told to analyse why they liked and disliked certain drinks (reflection condition); and (iii) told to think about how much they liked each drink (focus on feelings). The correlation between attitude and actual purchase was highest for condition (iii) ($r = +0.60$), followed by the control condition ($r = +0.55$), and condition (ii) last ($r = +0.40$).

Getting individuals to think about their attitudes in detail might make them realise how inconsistent (and irrational) they are. Inconsistency can be seen in the work of Leon Festinger and the theory of cognitive dissonance (appendix).

D. NATURE OF BEHAVIOUR

1. Behaviour influenced by many factors

An attitude can be private, but behaviour is public, and is tied to various consequences.

i) Immediate consequences of the behaviour

It is what is happening now that influences behaviour. For example, Corey (1937) was able to measure sixty-seven students' attitudes towards cheating in an examination, and then to see if they did actually cheat (without the students knowing). The latter was done by giving the students impossible problems to solve, but telling them that the answers were at the back of the book (which they should not look at).

Thus the only way they could solve the problems was by cheating. Corey noted that cheating (the behaviour) had little to do with views about honesty in examinations (the attitude) ($r = +0.02$). It was probably more related to how prepared the students were for the examination.

Behaviour is influenced by factors in the here and now. Longer term issues and concerns are not important. So condom use will relate to the situation of sexual intercourse at that moment, and factors influencing that event, like stopping to put one on or the reduction in pleasure or sensitivity from its use.

Foreman (1999) noted that "many men allege that male condoms reduce sensitivity. This may be true, but refusing to wear a condom on such grounds is to suggest that immediate pleasure is more important than the risk of illness and death" (pp22-23).

Sexual intercourse is so associated with immediate consequences of pleasure that this can outweigh all other concerns. For example, unsafe sex after heavy drinking was found in one in seven cases among 16-24 year-olds in a 1998 survey by the Health Education Authority in the UK (Brewer 2004).

ii) How we think others will evaluate our actions

Berkowitz (1975) pointed out that people "act in ways designed to please, or not affront, those around them - not because they are intrinsically phoney - but because they have learned that others are important to them".

Asking or demanding to use a condom by one partner in a sexual encounter can affect how that person is viewed by the other, and it also varies based on gender.

The structure of the sexual encounter makes it difficult for women to encourage the use of condoms by their sexual partners. Holland et al (1990) interviewed a number of young women and found a selection of strategies used:

We found embarrassment about every stage of condom use. When young women put their reputations first, then buying condoms, carrying them, and of course, asking for their use are all embarrassing. Having a condom on one's person indicates a lack of sexual innocence, an unfeminine identity, that of a woman actively seeking sex. The sexual woman, is then, easy, fair game, a slag and generally at men's disposal.

Refusing to use a condom by a woman in a heterosexual situation is less risky as traditionally men are the ones asking not to use them as shown by the regular request to have unprotected sex made to prostitutes (Brewer 2002).

iii) Habitual ways to behave in some situations

Habits are "learned sequences of actions that have become automatic responses to situations" (Sheeran et al 2005). A traditional Behaviourist view sees habits as frequently reinforced behaviour in a particular situation.

A recent understanding of habits (cognitive-motivational view) focuses upon the goal as the cause of the automatic behaviour to achieve that goal (Aarts and Dijksterhuis 2000). For example, the goal of getting

dressed in the morning activates the habitual behaviour involved in that process.

It is possible that environmental features can trigger goals which in turn trigger habitual behaviour outside of conscious awareness (Bargh 1990; auto-motive model). An experiment to support this idea comes from Bargh et al (2001). Participants performed a word-search task, which for half of them contained achievement-related words (eg: "succeed"). These words were the environmental trigger. Then there was a second task of word puzzles.

Those participants in the first task who received the achievement-related trigger performed better on the second task, and reported no conscious awareness of deliberately trying harder (figure 9).

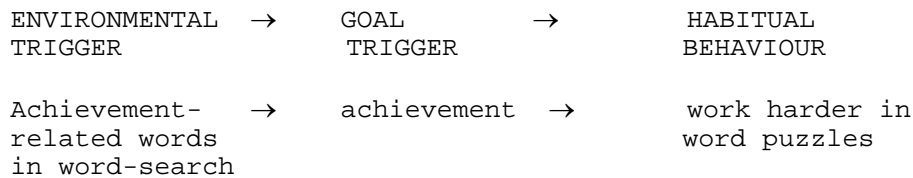


Figure 9 - Auto-motive model of habitual behaviour.

Sheeran et al (2005) investigated this relationship in alcohol drinking behaviour among UK university students. The environmental trigger is socialising which leads to the goal trigger of readiness to drink and the habit is alcohol consumption (figure 10).

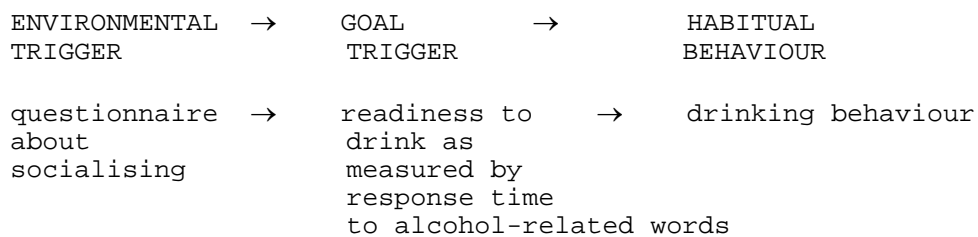


Figure 10 - Triggers in Sheeran et al (2005).

The mean response time to alcohol-related words was much quicker (568 msec) in habitual drinkers than non-habitual ones (877 msec). "Participants' readiness to drink was greatest when both a goal related to drinking was active and participants possessed relatively strong drinking habits" (Sheeran et al 2005 p53).

If condom use is not part of the process of sexual

intercourse based upon the above triggers, then it is unlikely to be the case in a specific situation.

iv) Situational factors

a) Norms and conformity/social influence

Experiments on conformity to the majority have shown that individuals will clearly agree publicly with the group in opposition to their private views. This is known as normative conformity, and is best shown by the studies of Solomon Asch (1951).

He showed that participants would agree with an obviously wrong answer given by the majority of the group to a simple line-matching task despite knowing the correct answer (in one-third of trials).

Minard (1952), in a field study, showed how white coal-miners in West Virginia responded differently depending on the situation. Down the pit, working with black miners, most (80%) reported friendships with blacks and worked with them without prejudice. In town, where racial prejudice was the norm, only 20% of white miners admitted to black friends (table 12).

But these figures may hide the strength of particular attitudes. Some miners will be strongly pro or anti-black, and others may be mildly so.

DOWN PIT	IN TOWN		% OF WHITE MINERS
yes	yes	consistent	20
yes	no	inconsistent	60
no	no	consistent	20
no	yes	inconsistent	0

Table 12 - Reports of having black friends by white miners in two different situations.

Organista et al (2000), in a study of 501 Mexican adult migrant labourers, found that actually carrying condoms (and the belief that they worked) were important for use with "occasional sex partners". But for "regular sex partners", social norms about their use were important. In other words, if everybody else doing it or perceived to be doing it.

In studying peer pressure and alcohol consumption, Prentice and Miller (1993) noted that students may have private reservations about heavy alcohol use, but kept them hidden because of public norms that supported such

drinking behaviour.

This can be an example of pluralistic ignorance. This is when individuals assume (wrongly) that others acting in a similar way are doing so for different reasons. Thus an individual who has negative private attitudes towards heavy alcohol consumption (but does the behaviour) assumes they are the only one because others drinking must have positive private attitudes towards heavy alcohol consumption. Everyone is making the same assumption and a behaviour continues despite no private support for it.

Social Response Context Model

The social response context model (SRCM) (Nail et al 2000; MacDonald et al 2004) was developed to take account of the different responses to social influence. It is based upon four questions (MacDonald and Nail 2005):

a) What is the person's public position before social influence (pre-exposure, public agreement/disagreement)?

b) What is the person's private position before social influence (pre-exposure, private agreement/disagreement)?

c) What is the person's public response after social influence (post-exposure, public agreement/disagreement)?

d) What is the person's private response after social influence (post-exposure, private agreement/disagreement)?

The answers to these four questions are worked through a flow-chart to give sixteen possible responses to social influence (eg: compliance, independence) (table 13).

NUMBER/NAME	BEFORE INFLUENCE:		AFTER INFLUENCE:	
	POSITION PUBLIC	PRIVATE	RESPONSE PUBLIC	PRIVATE
1. congruence	A	A	A	A
- individual agrees with the group before and after social influence, but maybe increased agreement after influence				
2. paradoxical compliance	A	A	A	D
- individual agrees before social influence, but afterwards agrees publicly despite privately disagreeing; eg: accepting "law of streets" despite private disagreement (conformity by moving away)				
3. anti-compliance	A	A	D	A
- individual agrees, but publicly disagrees after social influence despite privately agreeing; eg: distance themselves from dissimilar or disliked group (opposite of no.14)				
4. anti-conversion	A	A	D	D
- influence of the group changes the individual away from the desired direction; eg: reaction to group's behaviour (opposite of no. 13)				
5. compliance/ conversion	A	D	A	A
- publicly the individual appears not to change, but privately they are converted by the group's influence				
6. continued compliance	A	D	A	D
- individual does not change: publicly they continue to agree while privately disagreeing; strength of attitude may change				
7. reversed anti-compliance	A	D	D	A
- individual swaps their position as reaction to group's influence; eg: dislike for group's position				
8. disinhibitory anti-conversion	A	D	D	D
- individual becomes confident enough to express private disagreement publicly; eg: anonymous questionnaire				
9. disinhibitory contagion	D	A	A	A
- individual unable to publicly agree before social influence; eg: adolescent phones for date after observing friend's success *				

NUMBER/NAME	BEFORE INFLUENCE:		AFTER INFLUENCE:	
	POSITION PUBLIC	PRIVATE	RESPONSE PUBLIC	PRIVATE
10. reversed compliance	D	A	A	D
- individual changes position both publicly and privately				
11. inhibitory independence	D	A	D	A
- individual does not change privately and continues to publicly disagree				
12. anti-contagion	D	A	D	D
- group's influence changes individual's private position				
13. conversion	D	D	A	A
- genuine change in belief due to influence of group				
14. compliance	D	D	A	D
eg: Asch (1956) pure public conformity (or normative conformity)				
15. paradoxical anti-compliance	D	D	D	A
- individual privately swayed by group despite continuing to publicly disagree; eg: man in group of majority women				
16. independence	D	D	D	D
- not influenced by group pressure				
(A + agreement; D = disagreement)				
* Disinhibitory contagion "occurs when an individual who is in an approach-avoidance conflict experiences a reduction in restraints as a result of observing a model" (Nail et al 2000 p457)				
(After MacDonald et al 2004; MacDonald and Nail 2005)				

Table 13 - Sixteen responses to social influence in social response context model.

b) Media

The media plays a key role in the creation of norms and the perception that everybody is doing something or not. Very few mainstream films involving heterosexual love scenes included condom use, and rarely in pornographic material (3).

v) Personality variables

One relevant personality variable is self-monitoring (Snyder 1979) measured by the 25-item true or false Self-Monitoring Scale (table 14). Low self-monitors focus upon themselves, and will be more consistent between attitudes and behaviour, while high self-monitors, who are aware of social norms, are more influenced by situational factors in their behaviour. For them, fitting in and appropriate behaviour are key.

	SELF-MONITORS:	
	HIGH	LOW
I find it hard to imitate the behaviour of other people	false	true
I would probably make a good actor	true	false
I'm not always the person I appear to be	true	false

Table 14 - Examples of items from Self-Monitoring Scale and responses by high and low self-monitors.

High self-monitors can live with the discrepancy between their attitudes and behaviour as "a sort of 'cost of doing business' for successful self-presentation" (MacDonald and Nail 2005).

A similar personality variable is public self-consciousness (Fenigstein et al 1975). Individuals high in this characteristic are very aware of their social environment, and thus conform. The opposite characteristic is private self-consciousness where individuals are inwardly focused and concerned with autonomy and integrity. It is obvious that the former group will be more likely to behave as the situation requires irrelevant of their attitude, but the private self-consciousness individual may also not be consistent. They may behave in order to establish the image of being different to others (Schlenker and Weigold 1990).

vi) Availability of options

This is the practical point that the individual may not be able to perform the behaviour that goes with the attitude held. For example, being a vegetarian in a situation where meat is the only food available or believing in the use of condoms in a place where they are not obtainable. Realistically, very few people will refuse to have intercourse in this situation.

Gupta (2002) reported that women in sub-Saharan Africa have limited choices because the response of men to requests for condom use can be violence.

vii) Miscellaneous factors

There is also a difference between spontaneous behaviour (usually without conscious thought) and deliberate behaviour (based upon reflection and planning).

Spontaneous behaviour could be linked to psychodynamics (Sigmund Freud), and the idea that "human behaviour is largely determined by primitive motives which originate in the unconscious, and remain so deeply buried that we have no access to them, although we can sometimes gain partial access with the help of psychoanalysis" (Thomas 1996 p286).

Any understanding of behaviour must also be aware of the role of unforeseen extraneous events. In the case of condom use, the unexpected opportunity for sexual intercourse when least thinking about it and not prepared (ie: no condoms available).

2. Problems with measuring behaviour

In the same way that there are problems in measuring attitudes, there are problems with measuring behaviour, and this is why attitudes and behaviour appear unrelated. Behaviour is usually measured by the researcher watching the participant either in an experimental situation or in the participant's natural environment. This is looking from the outside and may miss certain things (ie: non-observable aspects of behaviour like thoughts and intentions).

Observers may only see certain things and miss others, and if individuals know they are being watched, this can change their behaviour. Are researchers actually measuring the "real" behaviour that goes with a particular attitude?

The research process itself changes what is being researched. This is seen in the Hawthorne effect. Based on the study by Mayo (1933) of the Hawthorne factory of the Western Electric Company in Chicago, and attempts to increase productivity. Whatever variables were manipulated (eg: lighting, working hours), productivity increased. Individuals were responding to being studied rather than the experimental variables.

In terms of single or multiple behaviour measures, Azjen (1988) reported consistency between an aggregation of behavioural tendencies across situations and verbal attitudes.

Fishbein and Ajzen (1974) constructed a study based on seventy religious behaviours (eg: praying before or

after meals). The attitudes were measured by five different types of attitude questionnaire, and compared to either self-reported single behavioural or multiple behavioural measures. The multiple measures of behaviour had higher correlations with all types of attitude questionnaire.

Conclusions

Despite the problems listed above, it is still possible to make some form of prediction of behaviour from knowledge of attitudes. For Myers (1993), there needs to be four factors:

i) Reduce the influence on attitude measurement - In other words, find ways to measure the individual's "real" attitude rather than socially desirable replies to attitude questionnaires;

ii) Reduce the influences on attitude-related behaviour - Measuring a single instance of the attitude-related behaviour may not be an accurate picture of that behaviour generally. On that one occasion, situational factors may have affected the behaviour. It is better to measure the behaviour on a number of occasions;

iii) Link specific attitudes to specific behaviours;

iv) Encourage individuals to reflect upon their attitudes before filling in attitude questionnaires - Hopefully this will avoid automatic responses or "standard scripts".

Stainton Rogers (2003) emphasised the specificity, strength and salience (relevance) of attitudes with behavioural opportunities and excluding social desirability in measurement as key in the prediction of attitudes and behaviour.

Schwarz and Bohner (2003) concluded that "In general, attitude-behaviour consistency will be higher when the attitude judgment and the behavioural decision are based on the same input information" (p451).

Input information refers to the stimulus to trigger the memory of the attitude or behaviour. For example, La Piere used different input information - namely the category "Chinese" in the questionnaire, and well-dressed Chinese guests at the hotel in the company of a white professor. This produced a mismatch between the information used to answer the questionnaire and the behaviour decision.

Schwarz and Bohner (2003) summarised a number of relevant points here:

a) The representation of the attitude object should be the same at the time of the attitude measurement and of the behaviour.

For example, Ramsey et al (1994) measured attitudes towards stereotypical pictures of drug users (category) two weeks before the participants actually met such individuals (exemplar). Attitude and behaviour were consistent when the drug users met were stereotypical (ie: matched pictures presented when attitudes measured). This only applies when the exemplar deviates from the category on easily observable features, not less obvious ones (Schwarz and Bohner 2003).

b) The respondent's mood at the time of attitude measurement should match their mood at behaviour measurement time (Schwarz and Clore 1988).

c) Some behaviours are for instrumental value (ie: to achieve a goal) and others for the pleasure. Attitude measurement should take account of this distinction (Millar and Tesser 1992).

d) Direct experience increases attitude-behaviour consistency.

e) Individuals need to consider the context in which the behaviour will be performed when stating their attitude towards it.

Table 15 summarises the main factors in establishing a clear relationship between attitudes and behaviour.

ATTITUDES	BOTH	BEHAVIOUR
- strength	- measure accurately	- types eg: spontaneous; instrumental
- relevance		
- direct experience	- specific (not general)	- opportunities to do behaviour eg: reduce group pressure
- time to reflect		
	- use same input in measuring	
	- same mood	

Table 15 - Summary of factors in the relationship between attitudes and behaviour.

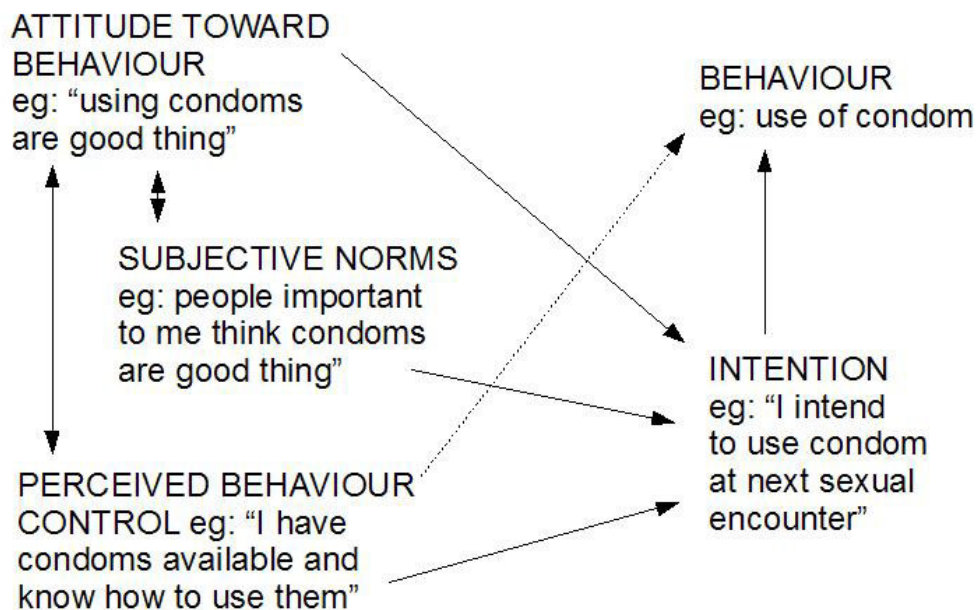
Much of the research on attitudes and behaviour uses correlations between them, but correlations do not establish causation. Predictive models called expectancy-value models estimate the probabilities of possible actions and attempt to establish causation.

A number of this type of model have been developed to build a more detailed picture of the relationship between attitudes and behaviour. One of the best known is the theory of reasoned action and later, the theory of planned behaviour (Fishbein and Ajzen 1975; Ajzen 1988; Ajzen 1991).

The key variable is intention to do the behaviour which will predict the actual behaviour, and attitudes play a part in the intention.

This model has three components which make up intention (figure 11):

- a) Attitude towards behaviour;
- b) Subjective norms (ie: what individual believes others want);
- c) Perceived behavioural control (ie: ability to do the behaviour).



(After Potter 1996)

Figure 11 - Theory of planned behaviour and condom use.

Generally then, it is possible to make some kind of prediction about behaviour based on attitudes (and vice

versa). On the other hand, a "post-modern" position is that little can ever really be known in psychology because the "terms and forms by which we achieve an understanding of the world and ourselves are social artefacts, products of historically and culturally situated interchanges among people" (Gergen 1994 p49).

A number of factors have emerged that relate to condom use from recent studies (table 16).

VARIABLE	RELATIONSHIP WITH CONDOM USE
Heterosexual *	
- behavioural intention to use condom	- positive correlation
- pregnancy	- pregnancy = less use
- having steady partner	- steady partner = less use
- beliefs	- eg: condoms interfere with sexual pleasure = less use
- skills in use	- increased skills = increased use
- perceived peer norms	- others using = more use
Homosexual men **	
- condom acceptability	- greater acceptability = more use
- social norms	- norms of use = more use
- personal efficacy	- belief that can use them = more use
- knowledge of risks	- increased knowledge = more use

(* = Koniak-Griffin et al 2003; ** = Janssen et al 2001)

Table 16 - Examples of factors associated with condom use.

Footnotes

1. Wicker (1969) included 32 studies and 1 review of 15 studies in the overview divided into three categories of studies (table 17).

CATEGORY OF STUDY	EXAMPLE	RANGE OF CORRELATIONS BETWEEN ATTITUDE AND BEHAVIOUR
Occupation (5 studies)	attitude to job and job performance	-0.07 to +0.68
Membership of minority group (16 studies)	attitude to blacks and willingness to be in picture with them	-0.21 to +0.61
Miscellaneous (11 studies)	cheating on exam and attitudes to exam cheating	-0.09 to +0.65

Table 17 - Summary of studies in review by Wicker (1969).

2. This is the actual procedure used by Fazio et al (1986) in such an experiment.

Part 1 - Participants pressed a key labelled "good" or "bad" as quickly as possible after presentation of an attitude object (seventy used; eg: animals, foods). Response time was measured between word appearance on screen and pressing key.

Part 2 - From the original list, 16 words were chosen to which the individual participant had responded quickest ("strong good", "strong bad") and slowest ("weak good", "weak bad"). Before the presentation of these words, either a positive or negative adjective was presented (eg: "delightful", "awful") (figure 12). Response times were again measured.

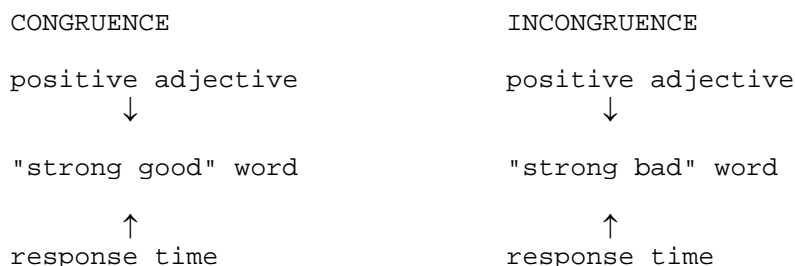


Figure 12 - Part 2 of Fazio et al (1986) experiment.

It is expected that response time will be faster in the situation of congruence than incongruence, which was the case (twice as fast of average). This is taken as

evidence of the automatic response to attitude objects.

3. I used a "free porn TGP" (accessed 24/10/06) to randomly find ten "gay porn" websites and ten "hardcore porn" heterosexual websites. Each website offered a few photographs to entice the viewers into the site. These photographs were used.

The focus was upon photographs that showed intercourse (oral, anal or vaginal) and whether a condom was being worn. None of the "gay porn" websites and only a few of the "hardcore porn" ones (8.4%) showed intercourse with a condom (table 18).

TYPE OF WEBSITE	NUMBER OF PHOTOS SHOWING INTERCOURSE	CONDOM USE: NUMBER (%)			
		ORAL	ANAL	VAGINAL	TOTAL
"gay porn"	56	0 (0)	0 (0)	/	0 (0)
"hardcore porn"	83	0 (0)	2/19 (10.5)	5/33 (15.2)	7 (8.4)

Table 18 - Number of photographs of intercourse showing a condom worn on two sets of porn websites.

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Appendix

COGNITIVE DISSONANCE

Cognitive dissonance is an explanation put forward by Festinger (1957) to account for attitude changes. When two "cognitions" are inconsistent, the individual is motivated to resolve this.

A well-known example is of a smoker who believes that "smoking causes cancer". This is a situation of inconsistency, which Festinger argued causes "psychological discomfort". The "sensible" option would be to stop smoking, but that is fixed, so the individual must change their attitudes about "smoking causes cancer".

This can be done in a number of ways:

- by belittling the evidence about smoking and cancer;
- convincing others to smoke;
- building an image around no fear of cancer;
- smoking low-tar cigarettes;
- associating with other smokers.

Another example of cognitive dissonance is the situation where individuals do something in order to gain a reward, but the reward is then not given after the individual has done that task. This causes inconsistency: the individual worked for the reward, but there was no reward.

The fact that the individual worked for the reward cannot be changed, so the motivation is what can be changed. The individual comes to believe that they worked for their own satisfaction, and so subsequently are more enthusiastic about the task now there is no reward. What this shows is that individuals are quite illogical in their behaviour.

Festinger et al (1956) first noted this phenomena of cognitive dissonance while studying a small group in USA who believed that the world would end, and they (the believers) would be saved and taken to the planet "Clarion".

The believers met at the appointed time (as set by "prophecies" given to the leader, Marion Keech), but no spaceships came to collect them. After this event, the individuals were told (by another "prophecy") that their "good works" had stopped the destruction of the world. The believers, then, became more enthusiastic to gain new members.

Logically if an event is proved to be untrue, individuals should lose interest. But a lot of effort was involved leading up to the "end of the world", and this is hard to deny. Thus it is easier to believe that they were right, and seek others to bolster their endangered beliefs. If lots of people believe the same thing, individuals feel that they cannot be wrong.

Aronson and Mills (1959) call this "effort justification". The more effort it takes to gain something, but that something is not as great as expected the more cognitive dissonance will exist. To resolve this, the individual will increase their liking for what they have gained.

In their experiment, Aronson and Mills led female students to believe that a particular class was worth joining. In order to join this class, the students had to go through an initiation task with varying degrees of embarrassment. But when they joined the class, it was really uninteresting. Those who had the most embarrassing initiation task, rated the class most interesting.

Cognitive dissonance has also been found in two other situations:

i) Post-decision

Following a decision for two equally desirable objects, and the individual is forced to choose one. Cognitive dissonance produces the situation where the individual highlights all good points of their object and all the bad points of the other objects.

Brehm (1956) found this change in a study on attitudes towards household appliances. For example, where two objects were equally desired, and only one could be chosen, the liking of this chosen appliance increased by a third on average following the choice, and for the appliance not chosen, the liking fell by half.

ii) Counter-attitudinal behaviour

If individuals voluntarily perform a behaviour that is opposite to the attitudes held, this also produces cognitive dissonance.

Festinger and Carlsmith (1959) had participants doing a boring task, and then convincing others that the task was interesting. The participants were paid either 1 or 20 dollars for convincing others. The group paid 1 dollar suffered cognitive dissonance. They had done the boring task then convinced others of its interest, therefore cognitive dissonance produced a change in their attitude; ie: they came to believe that the task was not that boring.

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