

People to Practice – How to Create Win-Win Situations

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ABSTRACT

Unacceptable waste management practices are the root cause of many problems in South Africa. Failing waste management services impact negatively on environmental and human health. Communication and awareness creation often fail to change people's mindsets that would allow them to act in ways that would benefit the environment. Research in the fields of psychology and social psychology has led to the development of many behavioural theories, which also has been extended into the environmental and waste fields. These social theories examine how to get people to perform a specific desired behaviour, in this case pro-environmental behaviour, in the absence of direct personal gain.

This paper explores behavioural theory and the application of such theory in international case studies related to environmental behaviour, attitudes and actions, and in particular recycling behaviour. This paper explores the opportunities that social theories present in finding solutions to South Africa's waste management problems, thereby creating win-win situations for government, society (as consumer) and the environment.

1. INTRODUCTION

Waste management is currently, and has been for the past decade, afforded a low priority within all spheres of government (Republic of South Africa 2000; Nhamo *et al.* 2009). This has resulted in failing waste management services in many municipalities, with the potential to impact negatively on human health and well-being (Oelofse and Godfrey 2008). Waste management services, and the way in which they are rendered and maintained, are fundamental to solving South Africa's water resource pollution problems (DWAF 2001). The obstacles that are preventing local municipalities from providing sustainable waste services are numerous and include budget restrictions, illegal dumping, service backlogs, lack of effective by-laws and insufficient skills development (Poswa 2004; DEAT 2007; Godfrey and Oelofse 2008). However, the absence of a waste collection service does not absolve the public from their legal responsibilities of responsibly disposing of their waste (Oelofse and Godfrey 2008). Illegal dumping, as observed in almost all municipalities in South Africa, is an example of a negative environmental behaviour with underlying social factors. Geller (1995:184) makes the following statement: "...*human behaviour contributes significantly to the degradation of our environment, and certain changes in human behaviour can contribute significantly to environmental protection.*" This is reconfirmed by Secrett (cited in Hambloch, 2004:693) who notes that "*there are no environmental solutions to environmental problems, only social, economic and political ones.*"

Communication and the use of appropriate communication tools, such as information sharing or awareness campaigns, is fundamental in transferring scientific information which may be useful to stakeholders, such as decision-makers and the public (Lubchenco *et al.* 1991; Lubchenco 1998; Dawson 2000; Christoffersen *et al.* 2000; Santi and Grenna 2003). In turn, one would assume that such information would raise a person's awareness and lead to an adaptation in their mindset, attitudes and actions (Denisov *et al.* 2005). The behavioural changes resulting from this raised awareness would potentially have positive impacts on the environment (Winter *et al.* 2005). However, this process of behaviour change through information and learning is not guaranteed, as it is easier to build knowledge than change attitude and behaviour (Hersey *et al.* 1996). Pfeffer & Sutton (2000) refer to this as the 'knowing-doing gap', where the gap between knowing and doing is seen as being more significant than the gap between ignorance and knowing (Godfrey & Scott, 2010).

Several social theories relating to individual behaviour have been developed and expanded since the 1950's. However, the application of psychological and sociological factors within the natural sciences, and particularly around understanding the growing environmental problems, is a fairly young phenomenon which has only started to gain momentum during the past two decades (Robinson 2006; Saunders *et al.* 2006).

Environmental psychology, for example which was established in the later part of the 20th century, focussed on explaining the interactions and relationships between people and their environments (McAndrew 1993). The theory behind behaviour change is crucial in understanding how to change peoples' behaviour towards, for example, waste management. What are the psychological powers or influences that drive human behaviour related to environmental change?

This paper provides a brief overview of a few key behavioural theories, which have applied within the environmental field and which are considered to add value towards understanding human behaviour towards waste management in South Africa. This is especially of importance in light of the newly promulgated Waste Act, 2008 (Republic of South Africa 2008) that requires significant changes in behaviour to meet the objective of moving up the waste management hierarchy, away from disposal towards waste minimisation, reuse and recycling.

2. BEHAVIOUR THEORY

According to the Theory of Reasoned Action (Figure 1), any behaviour is preceded by an intention to perform the specific behaviour (Fishbein and Ajzen 1975). The intention to act depends on two factors: firstly, the person's attitude towards the behaviour, and secondly, the person's perception of social pressures, or subjective norm, e.g. what other people expect of the person. It can thus be derived that although attitudes and intentions of an individual is important to determine a resultant behaviour, surrounding social pressures play an important role in behaviour being translated into an action.

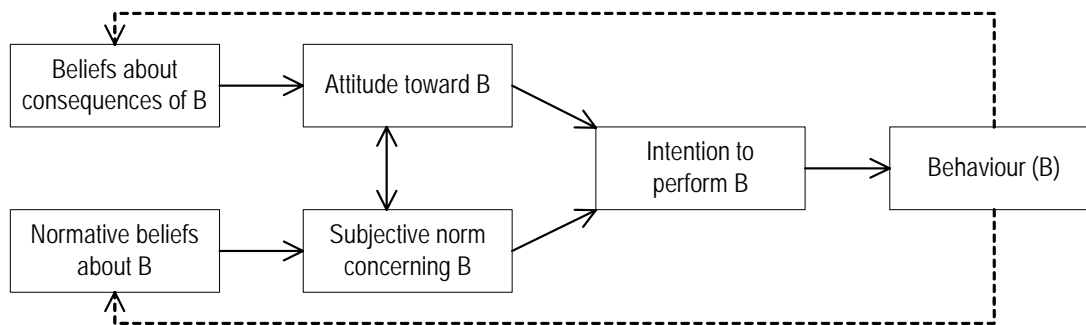


Figure 1. The Theory of Reasoned Action (adapted from Fishbein and Ajzen, 1975)

The role of personality factors (e.g. dominance, introversion, extroversion), demographic (e.g. age, gender, education, culture, income level) and social variables is acknowledged as external variables that do not influence behaviour directly, but rather influence the underlying beliefs of a person or social group (Figure 2) (Ajzen and Fishbein 1980). As shown in Figure 2, the external variables on the left side of Ajzen and Fishbein's 1980 model for determining a person's behaviour show the indirect effects these variables have on behaviour.

Improving on the earlier Theory of Reasoned Action, the Theory of Planned Behaviour (Figure 3) includes a third underlying belief, that of perceived behavioural control (Ajzen 1985). The intention of a person to act in a certain way is controlled by a person's belief of the ease or difficulty to perform the specific behaviour/action (Ajzen and Madden 1986). As shown in Figure 3, The Theory of Planned Behaviour (Ajzen and Madden 1986) includes a perceived behavioural control (control beliefs) which combines with a person's attitude (behavioural beliefs) and subjective norm (normative beliefs), thereby influencing a person's intention to behave and their resultant behaviour. Ultimately a person decides to act or not, but how easy or difficult it is to act is determined by external factors, such as the availability of resources (Ajzen and Madden 1986). A person is more likely to succeed at implementing a behaviour if they are confident in their ability to perform it or if strong barriers are removed (Ajzen, 1991).

Grob's model of environmental behaviour (Figure 4) explains the influence of emotions and environmental awareness on behaviour (Grob 1995). The environmental awareness factor recognises the role that factual knowledge about the environment, e.g. that environmental problems exist, play in determining people's behaviour. People also place an emotional value on certain aspects of the environment, e.g. the envisaged ideal environmental condition compared to the actual environmental condition.

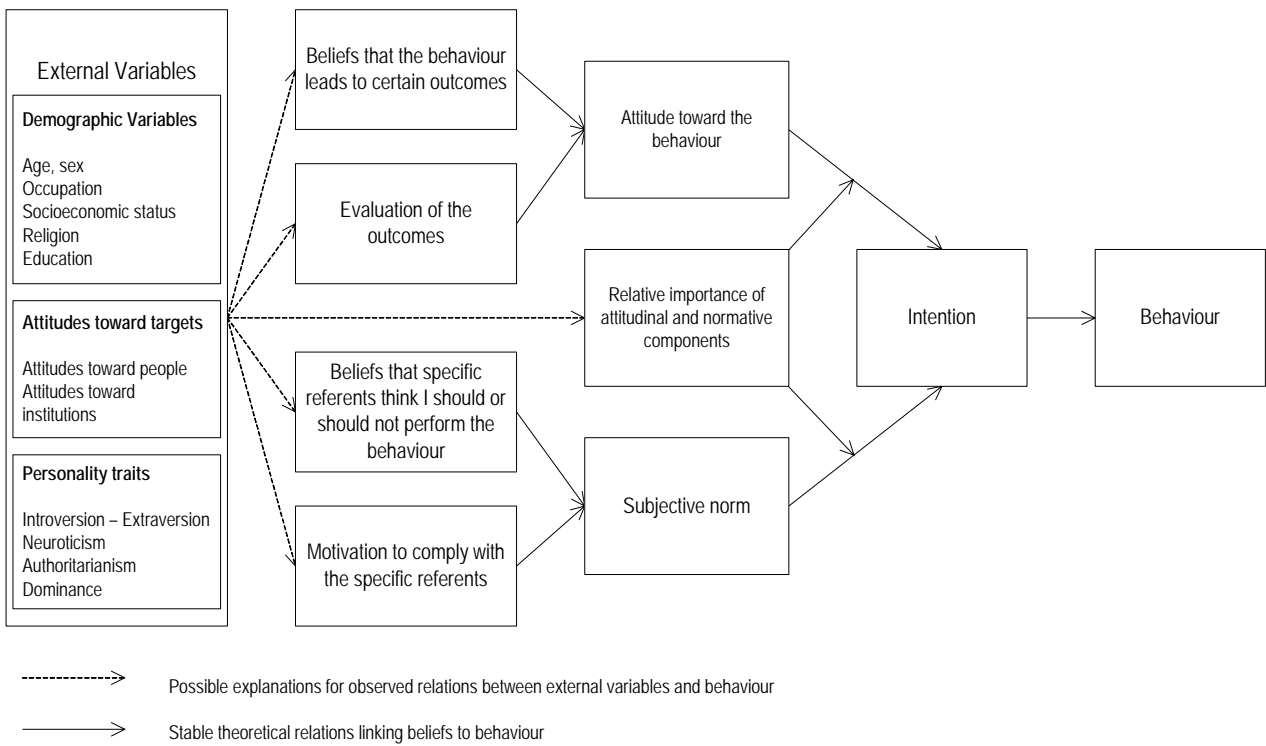


Figure 2. Ajzen and Fishbein's 1980 model for determining a person's behaviour

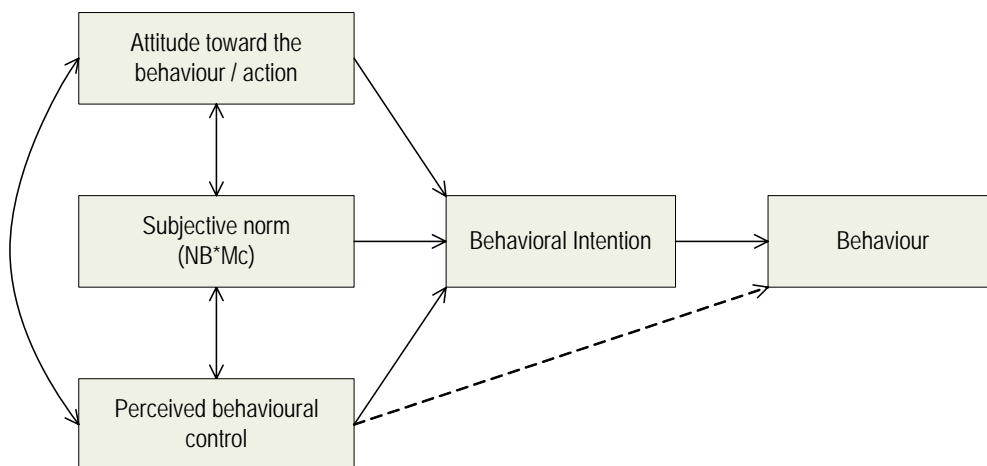


Figure 3. The Theory of Planned Behaviour (Ajzen and Madden 1986)

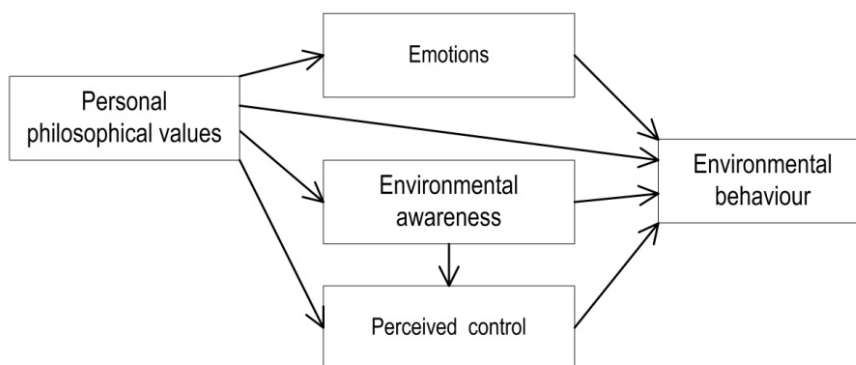


Figure 4. The model of environmental behaviour (Grob, 1995)

During the past two decades the Theory of Planned Behaviour has been extensively applied, and more models have been developed to try and explain and/or predict the further nuances of human behaviour. Further theoretical developments include, for example, the flow of behaviour change model (Geller 2002), and the goal-directed behaviour model. The latter building on the Theory of Planned Behaviour, distinguishing between desires and intentions (Perugini and Bagozzi 2001; Perugini and Bagozzi 2004; Carrus *et al.* 2008), includes positive and negative emotions, as well as past behaviour. Geller's flow of change model includes activators (information, advice and education) and consequences (Geller 2002). The activators are mediated by attitudinal change, and consequences are maintained and reinforced by external factors such as recognition and monetary reimbursements (Geller 2002). Therefore, Geller (2002) argues that all support for behaviour that harms the environment should be removed.

Thøgerson (2004) derived his model on recycling behaviour from the Theory of Reasoned Action (Figure 1), with "opportunity" and "ability" influencing the "intention-behaviour" relationship. "*A feedback loop ... allows for ability (habits and task knowledge) to influence the beliefs and evaluations which informs attitudes*" (Knussen *et al.* 2004:238).

The application of these behavioural theories within the field of waste management and waste recycling are discussed below in more detail.

3. ATTITUDES AND BEHAVIOUR TOWARDS RECYCLING

Studies from the 1980s and 1990s found no correlation between environmental behaviour and demographics such as age, gender, place of residence or social class (Krause 1993; Van Liere and Dunlap 1980; Neiman and Loveridge 1981). While Baldassare and Katz (1992) found that income, education levels and political convictions do not correlate with environmental attitudes and behaviour, Van Liere and Dunlap (1980) found a positive correlation between education and environmental concern.

Findings from studies focussing specifically on recycling behaviour showed similar conflicting results. Demographic variables were found not to predict behaviour (Oskamp *et al.* 1991; Gamba and Oskamp 1994; McDonald and Ball 1998). However, other studies showed that recycling behaviour was influenced by family size (number of household members) (Gamba and Oskamp 1994), as well as residence type (Oskamp *et al.* 1991). This is not supported by all surveys, e.g. McDonald and Ball (1998) found no correlation between the number of members per household or socio-demographics and recycling frequency. Oskamp *et al.* (1991) found that those families that recycle have a fairly good knowledge about conservation issues. Women, to a greater degree than men, have positive protective attitudes toward the environment (Steger and Witt 1988). It was also found that woman and older people are more likely to participate in environmental conservation practices (Baldassare and Katz 1992), including recycling projects (McDonald and Ball 1998; Knussen *et al.* 2004).

Recycling behaviour is likely to be influenced by convenience or ease of use, knowledge and access to a kerbside scheme (McDonald and Ball 1998; Barr *et al.* 2001; Davis *et al.* 2006; Perry and Williams 2006). Shorter distances to drop-off centres and having kerbside collections are linked to the convenience factor and favour recycling behaviour (Sidique *et al.* 2010). Similarly, beliefs of how convenient it is to recycle, also drives behaviour (Sidique *et al.* 2010). The knowledge factor includes awareness and a "familiarity with recycling infrastructure" (Barr *et al.* 2001; Sidique *et al.* 2010). Visibility of collection schemes (e.g. the recycling bins of a household collection scheme) and visibility of drop-off centres, as well as observing how others participate, increase awareness and thus recycling participation (McDonald and Ball 1998; Bolaane 2006). In general, all forms of "publicity" motivate and reinforce positive recycling behaviour (McDonald and Ball 1998). Factors that influence perceptions and discourage participation in recycling schemes include having to make a "special trip" to a drop-off centre (McDonald and Ball 1998) and a failing service, such as bins not collected or drop-off sites not maintained (Bolaane 2006).

Incentives to recycle are pointed out as motivational factors (Bolaane 2006; Perry and Williams 2006). Rewarding desired behaviour immediately has shown that such behaviour is more likely to continue even when no longer rewarded (Hersey *et al.* 1996). However, should some recyclables be linked to monetary reward, there is a possibility that recyclables that do not carry such a reward will be neglected (Bolaane 2006).

Some studies show that social pressure drives recycling behaviour (Sidique *et al.* 2010); that having friends and family who recycle encourages recycling behaviour (Oskamp *et al.* 1991). Another study ascribed their contradicting finding, the weak relationship between the subjective norm and behaviour intention, to a less established recycling scheme with the result that "*the level of social pressure to recycle at community level*

was not high" (Knussen *et al.* 2004:244). Staats *et al.* (1996) describe respondents' self-reported behaviour to match their expectations from other households and government sectors.

Past recycling behaviour, as well as "*concern for the community and the consequences of recycling*" also predicts recycling behaviour (Tonglet *et al.* 2004:27). Typically, people with stronger intentions to recycle have previous experience of recycling and thus "*a stronger perceived habit of recycling*" (Knussen:237). People's attitude towards recycling is a significant predictor of behaviour (Knussen *et al.* 2004). In general, non-recyclers do not participate in surveys, and thus complicate analysis of survey results (Gamba and Oskamp 1994).

The theories discussed above confirm that it is not easy to predict human behaviour, and adding environmental issues to the equation complicates it further. Geller (2002) explained this complexity by positing several reasons why the well-studied direct persuasion techniques to change market-related behaviour which is used in social marketing (advertising) is not applicable or relevant to changing people's behaviour that would have an effect on the environment. Posited reasons for why it is difficult for people to change their own behaviour include the following:

- The positive change in the environment that results from changed human behaviour is not immediately visible (Denisov and Christoffersen 2001; Geller 2002). There is also uncertainty about the consequences to the natural environment.
- A change in lifestyle is needed that could be considered as inconvenient (Geller 2002). The convenience factor is one of the barriers to recycling (McDonald and Ball 1998; Barr *et al.* 2001; Davis *et al.* 2006; Perry and Williams 2006)
- People should hold themselves accountable for the consequences of their behaviour on the environment. A sense of responsibility within each individual is needed. This is not acquired through direct persuasion of somebody else's idea.
- The changed behaviour does not act as a "contingency" and external contingencies do not encourage the desired behaviour (Geller 2002)
- People feel powerless to make a positive impact (Denisov *et al.* 2005).
- Persistent actions are required. The majority, if not all, individuals should participate to ensure a significant change. People feel that their individual changes in behaviour will not be followed by significantly enough others to form a significant combined effect (Staats *et al.* 1996).
- Social pressures – present day lifestyles, by default, do not favour environmentally friendly behaviour.

4. DISCUSSION AND CONCLUSIONS

Although several studies show a weak link between factual knowledge and pro-environmental behaviour, the role of knowledge in establishing a concern for the environment cannot be ignored and knowledge creation and awareness should thus not be neglected (Gamba and Oskamp 1994; Staats *et al.* 1996; Nilsson and Küller 2000). People should know which human activities have a detrimental effect on the natural environment, what cause these actions and how to change such behaviour (Gardner and Stern 1996). The role of economic considerations, traditions, culture and social issues which interact with both old and new knowledge and either strengthen or weaken the effect of environmental information should not be ignored (Denisov and Christoffersen 2001). Both concern for the community and concern for the environment influence recycling behaviour and should be taken into account when recycling is propagated (Tonglet *et al.* 2004; Davis *et al.* 2006).

It is difficult "*to change current cognitions and behaviour*" (Staats *et al.* 1996:189). Knowledge, as well as awareness of the problem, is a less important factor in changing attitudes and behaviour of people (Priest 2004; Staats *et al.* 1996). In turn, changing behaviour is more difficult to achieve than either the acquisition of knowledge or a change in attitude (Hersey *et al.* 1996).

Studies of the recycler and non-recycler are extensive (e.g. Oskamp *et al.* 1991, Gamba and Oskamp 1994, McDonald and Ball 1998). There are many recycling characteristics which cannot necessarily be compared to reuse and minimising behaviour (Barr *et al.* 2001). Mosler *et al.* (2008) pointed out that the sentiments for each of the behaviours (recycling, composting and reuse) differed significantly e.g. concern for the environment and the community seems to be a stronger driver for waste minimisation (Barr *et al.* 2001; Tonglet *et al.* 2004). Similar to recycling behaviour, inconvenience, and lack of space, time and knowledge inhibits waste minimisation (Tonglet *et al.* 2004).

Recycling without efforts to limit waste production is not the ultimate environmental solution (Gutbertlet 2008). However, once the driving forces behind recycling and waste minimisation attitudes and behaviour have been identified, efforts to change behaviour can be focussed to achieve maximum effect (Tonglet *et al.*, 2004).

Understanding people's attitudes and behaviour has far-reaching consequences. Research certainly has a role to play in understanding people's behaviour and the underlying social factors which drive such behaviour. However, research also has a role to play in providing the information necessary to raise people's awareness with regards to pro-environmental behaviour and in so doing, hopefully influence human behaviour. This interface is needed with both the public and with government that is responsible for policy making. These relationships and the potential resulting consequences on waste management and sustainable development in general cannot be ignored. However, having the best waste management policies and plans in place will not have the desired positive outcome if society does not respond by adapting their attitudes and behaviour accordingly.

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