ENVIRONMENTAL CONCERN AND ENVIRONMENTALLY RESPONSIBLE BEHAVIOUR: TOWARDS A MODEL

Vivien Willers & Fred van Staden

In this study, environmental concern has been conceptualised as the manifestation of attitudes that are directed at behavioural intentions of active personal involvement in caring about environmental matters. Based on a critique of theoretical approaches towards understanding the formation of environmental attitudes, a model has been developed where environmental concern acts as a precursor of responsible environmental behaviour. The emergence of environmentally concerned attitudes is depicted as a dynamic composition of transactions amongst individual subjective experiences, personal factors and structures at the socio-level. Attention is also paid to the temporal and situational embeddedness of environmentally concerned attitudes over time and space.

INTRODUCTION

It has been contended that psychology can make an important contribution to the understanding of human responses to environmental issues, and help change behaviour harmful to the environment in the direction of a more positive approach to environmental issues and into responsible behaviour. Stern & Oskamp (1987) pointed out that all environmental resource problems involve human attitudes and behaviour in a crucial way, and if development is to be sustained, then personal attitudes and practices need to be changed. For some environmental problems (e.g. overpopulation and deforestation) it is necessary to change the behaviour of millions of individuals. In certain instances, people must have the motivation and knowledge necessary to adopt new technologies, or change existing behaviour patterns. In other instances people need to acquire skills for identifying and resolving environmental problems. Clearly, the ultimate objective to ensure sustainable development is to cultivate an environmentally literate and responsible society.

ATTITUDES

Bell *et al.* (1990) noted that many environmental psychologists have avoided using the term 'attitude' because of the interpretative dispute about what exactly an attitude is. A common definition of attitudes, the tripartite conceptualisation, is that they are made up of three components or subsystems - cognitive, affective and behavioural (Borden & Schettino, 1979; Krech & Crutchfield, 1948; Krech, Crutchfield & Ballachey, 1962; Triandis, 1971, 1977, 1979). Cognition refers to thoughts and ideas, affect to feelings and emotion, and behaviour to behavioural intentions or overt actions. Eagly & Chaiken (1993) pointed out that this idea of viewing attitudes in terms of three components has generated a certain amount of confusion among social psychologists, and in their opinion, a fair share of non-productive research.

However, Zanna & Rempel (1988) provided an excellent conceptual analysis that clarifies the issues concerning the behavioural, affective and belief subsystems. They suggested that these distinguishable 'components' are merely three types of evaluative responses that may underlie attitudes. This puts a different slant on the old tripartic analysis of attitudes. Eagly & Chaiken's conceptualisation of attitudes formation is also tripartic. They refer to these components as "evaluative responses" (1993:10). Attitudes are formed on the basis of behavioural experience, affective experience, and beliefs acquired through informational sources, or a combination of these classes of experiences. These different classes of attitudinal experience exist in "a cooperative, synergistic relation" (Eagly & Chaiken, 1993:17).

Eagly & Chaiken's interactional perspective on attitude formation is particularly relevant in the study of correlates of environmental concern. In this paper conceptualisation will be integrated into a transactional model offered by means of defining environmentally responsible behaviour.

Eagly & Chaiken (1993) believe that an important structural property of attitudes is the degree of consistency between a person's overall evaluation of an attitude object and the evaluative content of that person's beliefs about it. People learn about an attitude object, and then ascribe to it attributes consistent with their existing attitudes (evaluative consistency). Nevertheless, as these authors suggested, although attitudes tend to be moderately consistent with associated evaluative beliefs, there are fairly wide

individual differences in the extent of this consistency. It seems that consistency of evaluation is a variable property of attitudes (Chaiken & Baldwin, 1981; Rosenberg, 1956).

According to the foregoing discussion, consistency of responses depends on the contribution of all three of the response classes to the initial formation of the attitude. Therefore it is not plausible to separate any of the components, as did Fishbein & Ajzen (1972, 1975) when equating evaluation with one component of response (affect). Eagly & Chaiken (1993) also pointed out the lack of criteria for distinguishing between cognitive and affective explanations for attitude formation. They argue that, considering the proposed transactions between different experiences, affective experience would then form the emotional component of assimilating knowledge (cognitive) and action skills (behaviour). An increase in one type of input, be it because of operant conditioning, classical conditioning or social learning, could well lead to a reciprocal increase in the other types of attitude experience. Therefore, this approach favours an interaction of learning processes in forming attitudes. It does not designate responsibility to any specific learning process.

ENVIRONMENTAL CONCERN

Given the present level of differentiation within the field of attitude theory, an operational definition of environmental concern as a discernable group of environmental attitudes can be formulated as follows:

> Environmental concern is a manifestation of attitudes directed at behavioural intentions of personal involvement in caring about environmental matters. As such it represents a psychological tendency that is expressed by evaluating issues relating to degradation of the environment and depletion of natural resources with feelings of distress or worry (Willers, 1996:39).

A complicating factor in the prediction of environmental concern is the view that it is a multi-dimensional construct. While researchers (e.g. Reynold, 1992; Stern, Dietz & Kalof, 1993; Schahn & Holtzer, 1990; Siann, 1994; Willers, 1996) have identified a wide range of factors that a play a role in the development of environmental concern, findings generally highlight the instability and inconsistencies in some of the relations, particularly ethnic grouping and gender (Cassidy, 1997; Fiedeldey *et al.*, 1998; Willers, 1996).

In fact it has been argued that environmental attitudes fragment into several specific components (Cottrell & Graefe, 1997). Two decades ago, Oskamp (1977) attributed instability amongst correlates of environmental concern to its multi-dimensionality. Buttel & Johnson (1977) also questioned the uni-dimensionality of the belief system underlying environmental concern. Their factor analysis of attitudinal items yielded two distinct factors, an ameliorative and a redirective (social redirection) dimension of environmental concern (Buttel & Johnson, 1977:56-57). People with an ameliorative style of environmental concern are likely to look for solutions within the institutional context, while those with a redirective style believe in environmental regulations that prohibit industry from polluting, regardless of economic repercussions. The two factors represent two extreme styles of thinking, like that of the technocrats and the Greens party! In the same study these researchers also found that correlates of environmental concern differed across the two modes of thinking. For example, there was a stronger association of education with redirective concern than with ameliorative concern.

Similarly, but in the field of sociology, Dunlap and colleagues (Catton & Dunlap, 1978, 1980; Dunlap, 1980a,1980b; Dunlap & Van Liere, 1978) investigated a new orientation towards the physical environment, an orientation prompted by a set of beliefs and values they called the 'New Environmental Paradigm' (Dunlap & Van Liere, 1978:10; Dunlap & Van Liere, 1984:1014). This 'new mode of thinking' favoured ecologically responsible lifestyles, in direct opposition to the older, traditional 'Dominant Social Paradigm' that favoured commitments to growth, resource exploitation and reliance on governmental regulations as the primary means of protecting environmental quality. More simply put, business and industry are the major causes of environmental problems, therefore it is leaders in these fields who should be primarily responsible for solving them (Dunlap, 1991b). It is clear that these two orientations are consistent with Buttel & Johnson's (1977) extreme styles of ameliorative and redirective concern.

Probably the best known-model of attitude-behaviour relationship is Ajzen's (1991) theory of planned behaviour. In Cassidy's (1997) opinion, this theory provides us with a model of the process which we need to follow in order to understand whether an attitude is likely to translate into behaviour. The extent to which a person's intentions to perform behaviours can be

carried out is thought to depend in part on the amount of perceived control that a person has over the behaviour. But, as Ajzen (1991) points out, perceived control in turn is determined by the control beliefs a person has about the likelihood of having the necessary resources and opportunities for carrying out the behaviour. From this perspective, control beliefs, as determinants of perceived control, must also play a role in determining the cognitive style which is adopted.

ENVIRONMENTALLY RESPONSIBLE BEHAVIOUR

Prior research on the prediction of environmentally responsible behaviour (Ajzen & Fisbein, 1973; Fishbein & Ajzen, 1975; Hines, 1985) was guided by the assumption that knowledge is linked to attitudes, and attitudes are linked to behaviour in a linear model (Cottrell & Graefe, 1997; Hines, Hungerford & Tomera, 1986/87). This thinking suggests that more knowledge about the environment leads to increased awareness of environmental problems and increased motivation to act in a more responsible way. Cottrell & Graefe (1997) on the other hand believe that the prediction of behaviour is extremely complex and should be based on a multitude of interacting factors.

Sia, Hungerford & Tomera (1985), Cottrell & Graefe (1997) and Willers (1996) propose that responsible behaviour is a learned response or action and is contingent upon several variables interacting with one another. This is of particular importance in terms of the present linear tripartite conceptualisation of attitudes (which suggests that attitudes may be grounded in behavioural experience, affective experience and beliefs acquired from informational sources). It also relates to the synergistic relationship that is assumed to exist between the three classes of attitudinal experience, mentioned before. An example would be when a person interacts behaviourally with an attitude object, that person gains information about it and may also experience emotions related to the nature of the interaction. More importantly, increased cognitive and behavioural input enhances attitude-behaviour correspondence, making it more likely that a person would engage in environmentally responsible behaviour. Hungerford & Volk (1990) also proposed that responsible environmental behaviour involved environmental literacy. Therefore, it seems likely that the variables that foster environmental literacy could very well also predict responsible environmental behaviour.

Stern's (1992) review identified a range of factors that were related to environmentally responsible behaviour. These included education, income, family size, government policy, personal norms, knowledge of skills in performing behaviour, and knowledge about which actions have the greatest effect. These variables are likely to combine and strengthen/weaken a person's initial concern for the environment.

ENVIRONMENTAL CONCERN AS A PRECURSOR OF ENVIRONMENTALLY RESPONSIBLE BEHAVIOUR

In line with the foregoing analysis, it can be argued that the prediction of environmental concern as a precursor of environmentally responsible behaviour involves a number of variables associated with structures at different levels of experience. In this regard the problem of reciprocal characteristics of environmental concern is best dealt with in terms of individual subjective experiences and in terms of collective structures within populations (Schultz, Oskamp & Mainieri, 1995). The characteristics of these experiences and the collective structures that support them have been integrated in an holistic perspective and visually represented (Figure 1).

On the one hand, the model conceptualises the emergence of environmental concern as a dynamic composition of individual subjective experience [C], personal factors [B], structures at the socio-level [A], and temporal and spatial (or territorial) structures [D].

On the other hand individual experiences aggregate and evolve into socio-levels, which in turn give rise to organisational structures, hence the multi-directional features of this model. In providing a transactional perspective of the development of environmental concern, however, it is recognised that individual and collective expressions of environmental concern occur as a function of the interface between time and space.

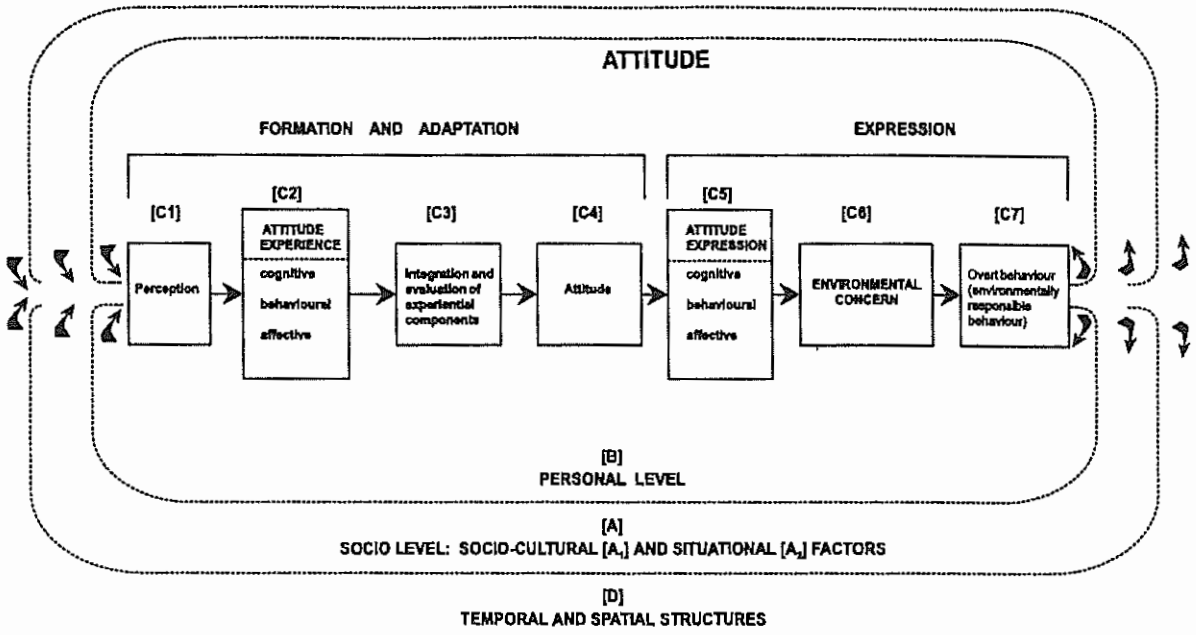
An outline of the structures and processes involved in developing environmentally concerned attitudes and behaviour patterns (depicted in Figure 1) will be detailed below.

Socio-level [A]

Socio-cultural structures [A1]

At the socio-level, some factors are organised according to cultural norms and lifestyles. For example, one could compare the effect of different socialisation patterns in urban and rural settings (Cassidy, 1997; Fiedeldey *et al.*, 1998; Schultz *et al.*, 1995; Siann, 1994), or different systems of language

Figure 1: **A holistic perspective of the development of environmental concern as a precursor of environmentally responsible behaviour**



(As explained in the text, there are recursive interactions among all these factors)

(Fiedeldey *et al.*, 1998) and communication that engender disparate expectations (as in different media interpretations of a specific environmental issue). Other factors relate to socio-demographic categories such as age, education, gender and ethnicity (Cassidy, 1997; Fiedeldey *et al.*, 1998; Hungerford & Volk, 1990; Synodinos, 1990; Willers, 1996). While there is evidence supporting the value of age and level of education as predictors of environmental concern (Veitch & Arkkelin, 1995), the influence of gender and ethnicity on the experiential base of attitude formation remains unclear (Fiedeldey *et al.*, 1998; Hungerford & Volk, 1990; Synodinos, 1990; Willers, 1996). With regard to ethnicity (and thus also home language as one indicator thereof), Preston-Whyte (1990) posits that ethnic group-values are affected by that group's specific needs and wants. In other words, individuals are socialised to perceive their environments selectively. He argues that ethnic background will influence how individuals transact with their environment, and how they cope with
environmental problems. Given this background, one would assume that values are central to a person's system of environmental attitudes and that clusters of attitudes organise around an ideology that represent the collective wisdom of an ethnic group at a particular point in time (Callan, Galois, Noller & Kashima, 1991; Cassidy, 1997; Rokeach, 1973).

Some evidence also suggest that factors other than ethnic values engender different value expectations of events in different settings, such as Tremblay & Dunlap's (1976) finding that farmers have a more utilitarian approach to the use of natural resources than non-farmers.

It must be pointed out, however, that socially relevant factors do not act in isolation, but contribute to transactional outcomes that are also related to individual, personal, demographic-situational and time as well as spatial characteristics (Schultz *et al.*, 1995; Van Staden, 1983; Willers, 1996).

Situational structures [A2]

Situational factors, such as economic constraints, social pressures and opportunities to choose different actions (Cassidy, 1997; Cottrell & Graefe, 1997; Hungerford & Volk, 1990) serve as variables at the socio-level. These variables influence the way in which environmental concern is experienced and

expressed. As Hines *et al.* (1986/87) suggest, if a person expresses concern and the desire to act against pollution by contributing to an anti-pollution fund (Schultz *et al.*, 1995), but simply cannot afford to do so, then the next constructive step will be to negotiate

('transact') another more realistic form of situationally relevant behaviour (Cassidy, 1997).

Personal level [B]

It is proposed that a personal level of factors exist that mediate individual expression of environmental concern. Evidence suggests the existence of two modes of cognitive style regarding concern for the environment: a passively orientated mode that sees others as being responsible for solving environmental problems, and another orientational model of personal responsibility or active concern. There is a similarity between this personal level variable and the 'control beliefs' of Ajzen's (1991) theory of planned behaviour. It is control beliefs (the beliefs a person holds about the likelihood of having the necessary resources and opportunities for carrying out the behaviour) that determine the extent to which his/her intentions to perform behaviours can be carried out.

But, an individual's perceptions about control may not be entirely accurate. Actual control would relate to situational variables such as social pressures and opportunities, economic constraints, availability of resources and opportunities that are preconditions for engaging in the behaviour (Hines *et al.*, 1986/87).

Attitude formation, adaptation and expression [C]

In summary, issues such as age, gender, level of education, place of residence, ethnicity and home language relate to the socio-level of functioning, and 'personal responsibility' is founded within a personal level of functioning. It is further proposed that, within this personal level of functioning yet another level of interdependent processes exist at the core of individual, subjective experience of the environment. Figure 1 depicts the first set of internally motivated factors, namely, a person's subjective perception [C1], unique attitudinal experience [C2], integration and evaluation of the attitude object [C3] and the establishment of the attitude [C4], as the process of attitude formation and adaptation. The second set of internally motivated factors is labelled attitude expression and has three interrelated components, namely, classes of attitude responses [C5], environmental concern [C6], and overt behaviour [C7].

Perception [C1]

People encounter the environment as attitude object through individual and collective transactions in their life worlds. These environmental encounters engender a state of arousal within the individual that is initiated by a situational awareness or perception (Cassidy, 1997; Cottrell & Graefe, 1997; Holahan, 1982; McAndrew, 1993). In order to understand and effectively transact with the physical environment, however, people must perceive it clearly and effectively. But their transactions in different environmental settings tailor their styles of perceiving their life-worlds (Ajzen, 1991; Holahan, 1982; Hines *et al.*, 1986/87). Therefore, it is proposed that perceptions are shaped and changed by socio-level [A] structures and again modified by personal [B] structures. Underlying this suggestion is the view that perception as a dynamic process functions in a continual state of change.

Research evidence tends to support the suggestion that recognition and differences in perceptions about the seriousness of environmental problems can be attributed to social factors related to the socio-level. For example, urban residents perceived air pollution to be more of a threat than their rural counterparts; poorer groups saw air pollution and litter in their immediate vicinity as pressing issues, as did black ethnic groups (Corder, 1991). White children appear more likely to be aware of local and global issues, while black children were more aware of issues that affect their daily lives (Cassidy, 1997; Corder, 1993; Dunlap & Van Liere, 1984; Hines *et al.* 1986/87; McAndrew,1993; Willers, 1996).

The second process [C2] relates to the source base(s) of attitude experience, followed by the subjective integration and evaluation of these sources [C3]. As a result of integrating and evaluating the experiential components of an environmental object, the attitude is established as an internal state [C4]. As mentioned earlier, the state of arousal initiated by initial awareness or perception [C1] is partly concluded by that person's immediate internal reaction or attitude response [C5].

Attitude experience [C2]

Although attitudes formed purely by affective mechanisms are only perceived as vague feeling states (Eagly & Chaiken, 1993), affective experience also forms the emotional component of assimilating knowledge (cognitive) and action skills (behaviour) - considering the proposed interactive co-operation between the different classes of emotional experiences.

Literature on attitude-behaviour correspondence

(Cassidy, 1997; Cottrell & Graefe, 1997; Doll & Ajzen, 1992; Eagly & Chaiken, 1993; Fazio *et al.*,1982) make it clear that attitudes formed through direct experience with the environment are held with more confidence and certainty, are clearer, stronger, more accessible and more stable than attitudes formed through indirect experience. Therefore variables such as exposure to environmental education, leisure-time activities, belonging to youth organisations and information from the mass media will all influence attitude quality, stability, strength and accessibility. These variables are also likely to involve an active interaction between cognitive, affective and behavioural processes in establishing the attitude experience.

The process of integration and evaluation of experiential components [C3]

An environmental attitude develops after a person has responded evaluatively with some degree of favour or disfavour. Having evaluated the entity, the person then assigns evaluative meaning to it [C3].

An important structural property of attitudes is the degree of consistency between a person's overall evaluation of an attitude object and the evaluative content of that person's beliefs about it (Bell *et al.*, 1996; Cassidy, 1997; Chaiken & Baldwin, 1981; Eagly & Chaiken, 1993). People get to know about an attitude object, and then ascribe attributes to the attitude object that are consistent with their existing attitudes (evaluative consistency). But, although attitudes tend to be moderately consistent with associated evaluative beliefs, there are fairly wide individual differences in the extent of consistency. Thus, when considering the dynamics of attitude formation, one must take into account that evaluative consistency is a variable property of attitudes (Chaiken & Baldwin, 1981; Rosenberg, 1956).

Attitude [C4]

Once the evaluative tendency is established, the person has formed an attitude towards the attitude object. The attitude exists as a hypothetical construct in a person's knowledge structures (Eagly & Chaiken, 1993). It is stored in memory and can be activated by the presence of the attitude object or cues related to it.

Attitude responses [C5]

After activation, an attitude is revealed or expressed through cognitive, affective, and overt behavioural or covert behavioural intentional responses. Responses of the cognitive type (beliefs) are thoughts and ideas people have about the attitude object, while affective responses consist of feelings, moods or emotions that people experience in relation to internalised attitude objects [C5]. These motivations integrate to form a 'state of concern' giving rise to appropriate behavioural intentions [C5 & C6] that can range from weak to strong, and from positive to negative. Pending on the strength of the behavioural intention, overt behavioural responses follow [C7].

The extent of consistency between the three classes of evaluative responses (with regard to its strength and direction for example) should also be considered. Eagly & Chaiken (1993) suggest that very high consistency between the classes would yield a one-dimensional statistical solution, while inconsistency between the classes would yield a multi-dimensional solution. Interestingly, Eiser (1987) is of the opinion that consistency of evaluation depends on the extent to which all three response classes contributed to the initial formation of the attitude. For example, when an individual encounters an attitude object directly, then, as Zanna & Rempel (1988) believe, attitude formation occurs by a combination of processes.

Direct experience with an attitude object also increases the likelihood that attitudinal responses will be triggered by the stimuli representing the attitude object. Clearly, attitude response relates to accessibility, stability and strength of the attitude experience. Indirect, remote experience (such as reading a newspaper article about environmental degradation) on the other hand, decreases the likelihood of triggering an attitudinal response. Yet, even if the quality of attitudes formed through indirect experience is poorer, the amount of knowledge one has about an attitude object is also associated with attitude accessibility and stability (Cottrell & Graefe, 1997; Eagly & Chaiken, 1993).

Environmental concern [C6]

Environmental concern is based on established attitude related experiences that underlie people's concern for protection of the natural environment and conservation of natural resources. But, an attitude is an abstract construct. It is not directly observable. A representation of the attitudinal experience is stored in a person's knowledge structures. It is only when that person encounters stimuli representing the attitude object (e.g. via a questionnaire about environmental issues), that the evaluative tendency to respond is elicited, and is then expressed as concern (through the fusion of

cognitive and affective responses into behavioural intentions) [C5].

Measuring environmental concern would involve designing cues relating to the relevant object(s) and combining the recorded responses to give a global quantitative index.

Overt behaviour [C7]

It has been argued that before a person can intentionally act on an environmental problem, the individual must show an awareness and sensitivity to the total environment, a basic understanding of and experience in the environment, feelings of concern and motivation for active participation in environmental improvement and protection, as well as the necessary skills to apply this knowledge and the desire to act (Cottrell & Graefe, 1997; Hines *et al.*, 1986/87; Hungerford & Volk, 1990; Willers, 1996).

Given the above contributions toward the impetus for overt action, attitudes are expressed in a range of different behaviours, intensities and directions. An attitude may even be too weak to be overtly expressed. An adequate measure of environmental concern should take these aspects into account.

Temporal and spatial structures [D]

The role of an enfolding time-space interaction [D] with individual subjective and collective experience, emphasises the temporal and situational character of environmental concern as a dynamic process which is formed, changed and adapted over time and space.

Factors such as age, socialisation and past experience in different settings may shape an individual's perception and experience of environmental concern. The shaping process is always subject to temporal, spatial (and physical) structures. Whereas temporal structures refer to the stability/instability of predictor variables over time, spatial structures relate to socio-organisational as well as personal expressions of spatial needs. Spatial structures would for example include the organisation of society into urban, suburban and rural areas, as well as relevant physical structures such as life-sustaining resources, climatic patterns and opportunities/constraints posed by the natural and built environments (Van Staden, 1983:133).
Figure 1 depicts the emergence of environmental concern and its overt behavioural expression as a combination of recursive transaction amongst individual subjective experiences, personal, social and situational characteristics. These responses and experiences are always embedded within (and expressed as) a function of time and space.

CONCLUSION AND DIRECTIONS FOR FUTURE RESEARCH

The major aim of psychology in the area of human resource management is to change attitudes and behaviours in the direction of a more positive approach to environmental issues and to develop responsible behaviour. Cassidy (1997:219) points out that in any society there will be '(driving) forces' towards positive change and '(restraining) forces' which oppose these changes. It is then a matter of designing interventions that reduce the restraining forces and enhance the driving forces. The suggested way to implement this would be through environmental education programmes (driving forces), This view is endorsed by Huntley, Siegfried & Sunter (1989) who underscore the importance of environmental education in the successful management of natural resources and environmental assets in South Africa. Although conservation action plans already include formal environmental education programmes in many schools, informal programmes/campaigns are needed urgently in South Africa to stimulate the development of a population that is more environmentally 'literate' (as suggested by Ballantyne & Tooth-Ashton, 1990).

Bonnes & Secchiaroli (1995) pointed out that the increasing use of transactionist paradigms in environmental psychology has made both theorists and researchers more aware of the dynamic interplay between people and their life worlds as a whole. A generation ago, environmental psychologists began to present transactionist perspectives of person-in-environment relations. For example, the environment primarily consists in a setting, that is an organised whole in space and time of physical aspects, social activities or meanings. Individuals as members of broad social groups are socialised not just to behave, but to behave appropriately to relevant physical settings; not simply to the immediate sensory stimuli of the setting, but to its symbolic qualities as well as the 'meanings' suggested by outward appearances (Ittelson *et al.* 1974:90-91). Clearly the transactional model is a move away from traditional approaches (Ajzen, 1991; Fishbein & Ajzen, 1972; Fishbein & Ajzen, 1975; Ramsey & Rickson, 1977) to attitude/behaviour correspondence which assume a linear link between attitudes and behaviour.

In heeding the call of Bonnes & Secchiaroli (1995) for a transactional approach, the model presented

presumes a transactional function between individual, personal, social and situational characteristics, and provides a mechanism (albeit incomplete) for moving towards a more differentiated understanding of the interdependent nature of human-environment relations. Further developments seem likely to deal more extensively with the temporal-spatial facet of environmental attitudes.

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