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Theory of planned behaviour, identity and intentions to engage in environmental activism

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ABSTRACT

This study incorporated identity constructs into the theory of planned behaviour (TPB) to investigate intentions to engage in environmental activism. First year students and participants of a students of sustainability conference ($n = 169$) were administered a questionnaire survey that measured standard TPB constructs as well as environmental group membership and self-identity as an environmental activist. Consistent with predictions, environmental group membership and self-identity were positive predictors of intentions. Thus, greater involvement in environmental groups and a stronger sense of the self as an environmental activist were associated with stronger intentions to engage in environmental activism. There was also evidence that self-identity was a stronger predictor of intentions for participants with low rather than high environmental group membership. In accordance with the standard TPB model, participants with more positive attitudes toward and a greater sense of normative support for environmental activism also had greater intentions to engage in the behaviour. The implications for groups seeking to harness support for activities to protect the environment are discussed.

1. Introduction

Studies suggest that the majority of people in western society have an awareness of the consequences humans are having on the natural environment (Dunlap, Gallup, & Gallup, 1993), and often display concern for the problems that are occurring (Seguin, Pelletier, & Hunsley, 1998). Despite this, environmental organisations and grassroots campaigners often struggle to harness active support (Hinkle, Fox-Cardamone, Haseleu, Brown, & Irwin, 1996; Seguin et al., 1998). Some may speculate that this discrepancy arises simply because people feel as if they cannot make a difference, yet there exist countless examples across many nations of the success of people power in preventing environmental degradation.

The "Save Manapouri" campaign of the 1970s is one such example. In this campaign the longest petition in New Zealand history successfully stopped the government from giving in to pressure from a multinational energy corporation wishing to raise the level of Lake Manapouri by 8 m for the purpose of hydroelectricity generation (Royal Forest and Bird Protection Society of New Zealand, 2003). More recently, in a nationwide campaign to "Save Ningaloo", thousands of people attached bumper stickers to their cars, wrote letters and signed petitions, and 20,000 marched through the streets of Fremantle, Western Australia, to voice their opposition to a proposed development bordering the reef (Mackenzie, 2003). The campaign was a success, with the Western Australian government announcing that the development would not be permitted and that the government would seek world heritage status for the area. These are just two examples of successful campaigns against human activities that threaten the natural environment, and with the high media profile of these campaigns and their success, the belief that people cannot make a difference is unlikely to be the major reason for their failure to take action.

This raises a key question: What determines whether individuals engage in active attempts to protect the environment? The present research aims to answer this question by drawing on a well-established social–psychological model, the theory of planned behaviour (TPB; Ajzen, 1988, 1991), to identify psychosocial factors that determine individuals' decisions to engage in environmental activism. In addition, the research will extend this model by incorporating and examining the impact of identity on environmental activism decisions.

Although there is a great deal of literature examining activism more generally (e.g., Simon & Klandermans, 2001; Wright, 2001), to date, there is relatively little research focusing specifically on environmental activism. Only a small number of studies have tested theoretical models of environmental activism. For example,

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Seguin et al. (1998) proposed that perceptions of health risks are the proximal predictor of environmental activism with factors such as autonomy, perceived responsibility, importance of the environmental problem, and information, as antecedents to health risk perceptions. There was some support for the model, although it only explained a small amount of the variance in activism behaviour. Adopting a collective interest framework, Lubell (2002) investigated and found support for the influence of such variables as environmental threat, personal efficacy, and environmental knowledge on environmental activism intentions and behaviour. McFarlane and Boxall (2003) and McFarlane and Hunt (2006) tested a social–psychological model of environmental activism in the context of forest management in Canada. Their research supported the predicted relationships between values, attitudes to forest management and activism. Greater knowledge and environmental group membership were also factors related to activism.

This previous research gives some insight into the factors that influence environmental activism. Many of the variables identified within the past models are reflected in the TPB, a model that has demonstrated good explanatory power across a range of decision-making contexts (see Albarracin, Johnson, Fishbein, & Muellerleile, 2001; Armitage & Conner, 2001; Blue, 1995; Godin & Kok, 1996; Hagger, Chatzisarantis, & Biddle, 2002 for reviews and meta-analyses). It has also been used extensively to understand environmentally responsible behaviour. One of the strengths of the TPB is that it is a parsimonious model that also allows for the inclusion of additional variables relevant to a specific behavioural context (Manstead & Parker, 1995).

For the purposes of this research, environmental activism will be defined as purposeful and effortful engagement in behaviours aimed at preserving or improving the quality of the environment, and increasing public awareness of environmental issues (Seguin et al., 1998). These behaviours may include protesting, rallying, petitioning, educating the public, lobbying government and corporations, participating in direct actions such as blockades or participating in voluntary conservation or revegetation work. We do not include membership in environmental organisations as an activist behaviour as membership can be nominal with no guarantee that members take part in the activities of the group. Instead, a key aspect of the present research is to investigate the extent to which environmental group membership acts as a motivator of environmental activist behaviours.

2. Theory of planned behaviour

According to the TPB, the most proximal determinant of an individual's behaviour is his or her intentions to engage in the behaviour. In turn, behavioural intentions are predicted by three main components: attitudes, subjective norms and perceived behavioural control (PBC). Attitudes refer to the overall positive or negative evaluation of performing the behaviour. Subjective norms are based on individuals' perception of whether important other people in their life would want them to perform the behaviour, whereas PBC reflects the extent to which individuals perceive the behaviour to be under their volitional control. It is the inclusion of this latter component that distinguishes TPB from its predecessor: the theory of reasoned action (Fishbein & Ajzen, 1975). Thus, according to TPB, individuals who hold positive attitudes toward environmental activism, think that there is normative support for engaging in activism, and perceive that they can easily engage in activism, should have strong intentions to perform the behaviour. In addition to the extent that PBC is a proxy for actual control, it may also have a direct impact on behaviour.

To date, the TPB has been used successfully to understand a range of environmentally responsible behaviours such as recycling (e.g., Boldero, 1995; Cheung, Chan, & Wong, 1999; Taylor & Todd, 1995), composting (Taylor & Todd, 1995), energy use (Harland, Staats, & Wilke, 1999), water conservation (Harland et al., 1999; Kantola, Syme, & Campbell, 1982), and the adoption of sustainable agriculture practices (e.g., Beedell & Rehman, 1999, 2000; Carr & Tait, 1991; Fielding, Terry, Masser, & Hogg, 2008, 2005). The TPB has also been used as a framework to examine predictors of activism more generally (Fox-Cardamone, Hinkle, & Hogue, 2000; Kelly & Breinlinger, 1995).

3. TPB and identity

Although reviews and meta-analyses have demonstrated broad support for the TPB (e.g., Armitage & Conner, 2001), it is acknowledged that for some behaviour and contexts, the inclusion of other variables may increase the predictive utility of the model (e.g., Biddle, Bank, & Slavings, 1987; Conner & Armitage, 1998; Cook, Kerr, & Moore, 2002; Terry, Hogg, & White, 1999). There is mounting evidence for the inclusion of identity—self and social—in the TPB (e.g., Conner & Armitage, 1998; Terry et al., 1999). Theoretically, this development represents an integration of core concepts from social identity theory (e.g., Hogg & Abrams, 1988; Tajfel & Turner, 1979, Turner, 1982) and identity theory (Stryker, 1968, 1980) into the TPB.

From a social identity perspective, when the salient basis for self-conception is a specific social identity, an individual's behaviour will become group-based and guided by the norms of that social category or group. The process of categorising oneself in terms of a particular social identity results in an accentuation of similarities between the self and other ingroup members and differences between the self and outgroup members. Thus, the behaviour and expectations of other group members will act as a guide for appropriate behaviour, especially when that social identity is central to the self-concept. Previous research has shown that the norms of behaviourally relevant groups significantly predict safe sex behaviour, regular exercise, sun protective behaviour and household recycling above and beyond TPB variables (Terry & Hogg, 1996; Terry et al., 1999; White, Terry, & Hogg, 1994).

This past research has investigated the extent to which group identification and group norms influence behavioural decisions, whereas in the current study we take a step back and ask the basic question of whether simply being a member of an environmental group (or groups) impacts behavioural decisions. As McGarty and Turner (1992) argue, social groups and categories are implicit social norms. Membership in an environmental group can be a nominal activity in which an initial membership fee is paid and, perhaps, some monetary contribution is made. However, most environmental groups promote and are engaged in more active attempts to protect the environment, sending clear messages to their members on expected and appropriate behaviour. It is likely then, that membership in one or more environmental groups will create a sense, prescriptively and descriptively, that environmental activism is a desirable behaviour to engage in. Consistent with this proposition, research by McFarlane and Boxall (2003) and McFarlane and Hunt (2006) showed increased activism for environmental group members. Other research has also shown higher levels of collective action for group members compared to non-members (Hornsey et al., 2006). The inclusion of both non-members and members of environmental groups in the study also allows an investigation of whether factors influencing decisions to engage in environmental activism differs according to group membership.

There is also a growing body of research demonstrating that self-identity is an important predictor of behavioural intentions (Armitage & Conner, 1999; Biddle et al., 1987; Callero, Howard, & Piliavin, 1987; Charng, Piliavin, & Callero, 1988; Conner & Armitage, 1998; Cook et al., 2002; Mannetti, Pierro, & Livi, 2004; Pierro, Mannetti, & Livi, 2003; Sparks & Guthrie, 1998; Sparks & Shepherd, 1992; Sparks, Shepherd, Wieringa, & Zimmermanns, 1995; Terry et al., 1999). Although, theoretically, Sparks and Shepherd (1992) argued that self-identity should influence intentions via attitudes, instead, they found that self-identity as a green consumer was an independent predictor of intentions to buy organic produce. Other recent research has also shown that perceived self-similarity to the typical recycler predicted recycling intentions (Mannetti et al., 2004). The logic for the relationship between self-identity and behaviour comes from identity theory (Stryker, 1968, 1980): identity (e.g., as an environmental activist) motivates action, and to not engage in role-appropriate behaviour (e.g., environmental activism) may create a state of internal tension due to conflict between identity and actions. In contrast, engaging in role-appropriate behaviour validates individuals' role, and therefore their self-identity (Callero, 1985). Moreover, the more important and salient an identity is, the greater the probability of role-consistent action. Based on the strong correlations found between intentions and self-identity in past research, Conner and Armitage (1998) argue that self-identity is likely to be an important predictor of intentions for some behaviours. In the current study we assess whether this is the case for environmental activism.

4. General environmental attitudes

Although the TPB allows for the inclusion of additional variables such as identity into the model, Ajzen and Fishbein (1977) clearly outline the ways in which central model variables are to be measured. They argue that specific attitudes to a given behaviour such as environmental activism will be a better predictor of intention to engage in that behaviour than will more general attitudes such as a pro-environmental orientation. In contrast to the compatibility principle proposed by Ajzen and Fishbein (1977), Dunlap, Van Liere, Mertig, and Jones (2000) argue that the new ecological paradigm (NEP), a measure of general pro-environmental attitudes and an ecological worldview, reliably differentiates between environmentalists and non-environmentalists. This very general measure is certainly not compatible in target, action, context and time to a specific measure of engaging in environmental activism (or intention to do so). In light of Dunlap et al.'s (2000) findings, we propose general environmental attitudes will predict activism intentions; however, their influence will be mediated by identity. That is, more positive general attitudes to the environment are likely to motivate membership in environmental groups and/or self-identity as an environmental activist which in turn motivates greater intentions to engage in environmental activism. The inclusion of the NEP in the current study allows an investigation of the influence of general environmental attitudes on environmental activism intentions, either directly or via identity.

5. Current study

To assess the revised TPB model as a framework for understanding and predicting environmental activism intentions, a questionnaire study was conducted with a sample of individuals with no affiliation with environmental groups and those with membership in one or more environmental groups. The questionnaire assessed the standard TPB constructs of attitudes, subjective norms and PBC—all in relation to environmental activism. Membership in environmental groups and self-identification as an environmental activist were included to assess social and self-identity. General environmental attitudes were also included in the questionnaire to assess their importance for motivating environmental activism relative to the TPB and identity variables.

This study makes an important theoretical and applied contribution to the literature. To our knowledge there has been no research employing the TPB to understand the determinants of environmental activism decisions. This is surprising in light of the application of the TPB to other environmentally significant behaviours. The incorporation of social and self-identity constructs in the present research is consistent with recent research acknowledging the influence of identity on behavioural decisions. Theoretically, the integration of these variables recognises that identity can be an important influence on intentions by shaping expectations about role and social category consistent behaviour. From an applied perspective, the findings of the research have utility for groups and organisations seeking to harness support for environmental activism. An understanding of the factors motivating decisions to engage in activism can help tailor effective recruitment strategies.

Consistent with the TPB, attitudes, subjective norms, and PBC will account for a significant proportion of the variance in intentions, and these variables should emerge as positive predictors (H1). The identity variables of environmental group membership and self-identity should explain additional variance over and above the standard TPB model and they should also emerge as significant positive predictors (H2). Following our reasoning above, we argue that general environmental attitudes will predict intentions; however, this effect will be fully mediated by the identity variables (H3).

In the current study we examine whether the model variables are moderated by environmental group membership. Consistent with the social identity perspective and previous research (Kelly & Breinlinger, 1995; Terry & Hogg, 1996; Terry et al., 1999), a basic prediction is that when social identity is salient, intentions will be more influenced by group-related, social variables than personal-level variables. Following this logic, participants with higher levels of environmental group membership relative to those with lower levels will be more influenced by subjective norms and less influenced by attitudes and PBC (H4).

Self-identity, considered a role identity, falls somewhere between personal and social identity (Tajfel, 1981; Thoits & Virshup, 1997) and it is likely that people can have a strong sense of being an environmental activist whether or not they are aligned with an environmental group. However, group members will be influenced by the norms of their group, and presumably more influenced the more groups they belong to, whereas, those with no affiliation or lower involvement are likely to be more influenced by their sense of themselves as an environmental activist. Therefore, self-identity should be a stronger predictor of intentions for those with lower rather than higher levels of group membership (H5).

6. Method

6.1. Participants

Participants were 70 males and 99 females aged from 16 to 57, with a mean age of 22.46 years ($SD = 7.38$). The majority of participants (79.3%) were tertiary students from all major Australian universities and many regional universities.

Seventy-one participants identified as environmental group members and were affiliated with 46 local, national and international environmental groups and organisations. Ninety-six participants were not members of any environmental group or organisation. In terms of highest education level, 1.2% of participants had completed primary school, 64.5% had completed secondary school, 8.9% had completed a trade or certificate course, 19.5% had completed a diploma or degree and 5.9% had a postgraduate tertiary qualification. Participants' political affiliation was coded as left or right, the majority, 71% of participants, indicated left-wing political support.

6.2. Procedure and measures

Participants were drawn from a number of sources. First year students participated in exchange for course credit ($n = 83$) and a small number of students ($n = 15$) participated in exchange for compensation (approximately USD7.00). These participants signed up for a study on environmental activism and were tested in groups. Participants were also recruited through local environmental groups and attendees of a Students of Sustainability Conference ($n = 71$). Surveys were mailed to representatives of the environmental groups for distribution to members and returned to the researcher by mail. Participants recruited at the Students of Sustainability conference were approached directly by a researcher and asked to volunteer to participate after reading the participant information sheet.

The questionnaire first asked participants to read the definition of environmental activism and then to complete the questions about this behaviour. All TPB constructs were measured according to the recommendations of Ajzen and Fishbein (1980) and Ajzen (1985). Where constructs have been measured with multiple items, scales have been created by averaging the items used to measure each of the constructs.

First, participants' *attitudes* to environmental activism were assessed using six semantic differentials. Participants responded to the following question: "I think that engaging in environmental activism is" (bad/good, foolish/wise, harmful/beneficial, unpleasant/pleasant, unsatisfying/satisfying, unfavourable/favourable). Responses were made on 7-point scales (e.g., −3, *extremely bad*; 0 *neither*; +3, *extremely good*).

Next, participants responded to three items assessing *subjective norms.* Participants were asked: "If I engaged in environmental activism people who are important to me would" (−3, *completely disapprove*; +3, *completely approve*); "Most people who are important to me think that engaging in environmental activism is(e.g., −3, *completely undesirable*; +3, *completely desirable*); "Most people who are important to me think that" (−3, *I should not*; +3, *I should*) engage in environmental activism.

PBC was next assessed with five items. Participants were asked: "How much control do you have over whether you engage in environmental activism?" (1, *very little control*; 7, *a great deal of control*); "For me to engage in environmental activism is (1, *very difficult*; 7, *very easy*)"; "If I wanted to I could easily engage in environmental activism" (1, *strongly disagree*; 7, *strongly agree*); It is mostly up to me whether I engage in environmental activism" (1, *strongly disagree*; 7, *strongly agree*); "How difficult would it be for you to engage in environmental activism?" (e.g., 1, *very difficult*; 7, *very easy*).

Behavioural intentions were measured with three items: "I intend to engage in environmental activism during the next 6 months" (1 *extremely unlikely*, 7 *extremely likely*); "Do you intend to engage in environmental activism in the next six months?" (1 *definitely intend not to*, 7 *definitely intend to*); "I (1 *do not intend*, 7 *do intend*) to engage in environmental activism over the next 6 months". These items were interspersed throughout the questionnaire.

Self-identity was assessed with three items that closely follow the measurement of this construct used in past studies (Biddle et al., 1987; Callero et al., 1987; Charng et al., 1988; Sparks & Shepherd, 1992; Sparks et al., 1995). Participants were asked to rate their agreement (1, *disagree*, 7, *agree*), with the following statements: (1) "I think of myself as an environmental activist", (2) "To engage in environmental activism is an important part of who I am" and (3) "I am not the type of person who would be involved in environmental activism". The third item was reverse scored.

The NEP (Dunlap et al., 2000) was used to assess *general environmental attitudes*. The measure consists of 15 items designed to assess pro-environmental orientation. Participants were asked how much they agree (1, *strongly disagree*; 5, *strongly agree*) with statements such as: "humans are severely abusing the environment", "plants and animals have as much right as humans to exist" and "humans were meant to rule over the rest of nature". Seven of the items are reverse scored so that higher agreement indicates more pro-environmental attitudes. Results of a study by Dunlap et al. (2000) indicate that the scale is internally consistent and predicts environmentalism. *Group membership* was assessed by asking participants if they were currently a member of an environmental group and, if so, to nominate the group/s they belong to. Responses were coded in terms of the number of groups they belonged to with scores ranging from 0 to 4 (the maximum number of groups nominated). Finally, the questionnaire collected demographic information including age, gender, education level and voting preference.

7. Results

7.1. Overview of analyses

Table 1 displays the means, standard deviations and correlations among regression variables. As expected all zero order correlations were positive. Of particular note is the strong correlation between self-identity and intention. As a precaution, the discriminant validity of the self-identity and intention measures was tested with a hierarchically nested confirmatory factor analysis within the SEM approach using AMOS 6.0. Specifically, the three intention items and the three self-identity items were either all linked to a single latent factor, or to two correlated latent factors: intentions and self-identity. A high correlation between latent intentions and self-identity was observed in the two-factor model, $r = 0.88$, $p < 0.001$. Nevertheless, a two factor model was a significantly better fit to the data than a single factor model in which identity and intentions were forced to load onto one construct, $\chi^2\ ch\ (1) = 76.73$, $p < 0.001$. For this reason, and because of the clear theoretical distinction in the existing research literature between identity and intentions, we judged it appropriate to maintain these variables as separate constructs in the analyses reported below.

Two sets of analyses were performed: (1) a hierarchical multiple regression analysis testing the revised TPB framework and (2) a moderated regression analysis testing for interactive effects of group membership with all other variables included in the model. Preliminary hierarchical regression analyses checking for effects of demographics and political orientation revealed that political orientation was a significant predictor of intentions at the first step of the regression; however, it did not remain significant after inclusion of the revised TPB variables. None of the other demographic variables were significant predictors of intentions. For this reason, none of the demographic variables are presented in the analyses below.

Table 1
Descriptive data for measures included in regression analyses (means, standard deviations, Cronbach's alpha coefficients and bivariate correlations).

Variable	M ($n = 169$)	SD	1	2	3	4	5	6	7
1. General attitudes (NEP)	3.89	0.56	(0.80)						
2. Attitude	1.82	1.08	0.39***	(0.90)					
3. Subjective norm	1.08	1.29	0.27***	0.52***	(0.88)				
4. Perceived behavioural control	5.42	1.05	0.17*	0.33***	0.21**	(0.80)			
5. Self-identity	4.12	1.93	0.56***	0.52***	0.50***	0.36**	(0.90)		
6. Group membership	0.68	0.95	0.31**	0.37***	0.30***	0.33***	0.64***	[a]	
7. Intention	4.41	2.13	0.44***	0.61***	0.54***	0.37***	0.86***	0.68***	(0.98)

*$p<05$; **$p<0.01$; ***$p<0.001$.
Note: Cronbach's alpha coefficients shown along main diagonal. Perceived behavioural control, self-identity and intentions measured on 1–7 scales. Attitude and subjective norms measured on −3 to +3 scales. NEP measured on 1–5 scale. Group membership values range from 0 to 4.
[a] Cronbach's alpha not computed; single item measure.

Table 2
Hierarchical multiple regression analysis predicting behavioural intention.

Step	Predictor	R^2	R^2 change	F change	df	Sig.	Step 1β	Step 2β	Step 3β
1	General attitudes (NEP)	0.19	0.19	37.86	1164	$p<0.001$	0.43***	0.20***	0.01
2	Attitudes	0.50	0.32	34.28	3161	$p<0.001$		0.34***	0.18***
	Subjective norms							0.28***	0.10*
	PBC							0.16**	0.01
3	Group membership	0.81	0.31	127.34	2159	$p<0.001$			0.20***
	Self-identity								0.59***

*$p<0.05$; **$p<0.01$; ***$p<0.001$.

7.2. Main analyses

A hierarchical multiple regression analysis was performed in which intentions to engage in environmental activism was regressed onto the revised TPB variables. Results of this analysis are presented in Table 2. The general environmental attitudes (NEP) were entered at the first step, the standard TPB variables of attitudes, subjective norms and PBC were entered at the second step, and self-identity and group membership were entered at Step 3. The NEP accounted for a significant proportion of variance in intention at Step 1. The addition of the standard TPB constructs significantly increased the proportion of variance explained at Step 2, with an additional 32% of variance in intention explained. The addition of the identity variables resulted in a further significant increase in variance explained, accounting for an additional 31% of variance in intentions.

There was partial support for H1 in that attitudes and subjective norms were significant predictors of intentions to engage in environmental activism. Contrary to the TPB, when all variables were included in the analyses, PBC was not a significant independent predictor of intentions. Both group membership and self-identity emerged as strong and significant predictors of intentions, providing support for H2. Thus, stronger intentions to engage in environmental activism were associated with higher levels of group membership, a stronger sense of the self as an environmental activist as well as more positive attitudes and a greater sense of normative support for the behaviour.

Although general environmental attitudes emerged as a significant predictor of intentions at Step 1 and remained significant at Step 2, their effect became non-significant at Step 3, indicating mediation by the identity variables. Consistent with the recommendations of Baron and Kenny (1986), controlling for the other variables, general environmental attitudes predicted the proposed mediator, self-identity ($\beta = 0.19$, $p = 0.001$). The regression analyses also demonstrate that general environmental attitudes significantly predicts intentions, and that the inclusion of the mediator renders the relationship between general attitudes and intentions non-significant. Moreover, the Sobel (1982) test demonstrated significant mediation of general attitudes by self-identity ($z = 3.17$, $p = 0.001$). Following the same procedure for group membership, general environmental attitudes did not significantly predict group membership ($\beta = 0.03$, $p = 0.118$) and, thus, a key requirement for mediation was not met. Furthermore, the results of the Sobel test showed no significant mediation of general attitudes by group membership ($z = 0.29$, *ns*).

7.3. Moderating effects of group membership

To test for the moderating effects of group membership, a hierarchical multiple regression analysis was conducted.[1] Interaction terms were computed by multiplying group membership by each of the revised TPB variables (e.g., group membership × attitudes, group membership × self-identity). To ensure that multicollinearity between predictors and interaction terms did not affect the results, each variable was first mean-centred and the interaction terms were based on the centred scores (see Aiken & West, 1991). The main effects were controlled by entering general environmental attitudes, attitude, subjective norms, PBC, group membership and self-identity at the first step. The interaction terms (group membership × general environmental attitudes; group membership × attitudes, group

[1] To ensure that the skewness of the group membership variable did not impact on the results, we conducted the analyses with the group membership variable categorically coded as 0 (non-member) or 1 (member). The analyses revealed that there was no substantive change to the results. Therefore, as we think that the continuous group membership variable better reflects the full range of group membership involvement, we retained the variable in this form in the reported analyses.

Table 3
Hierarchical multiple regression analysis predicting behavioural intention: interactive effects of group membership.

Step	Predictor	R^2	R^2 change	F change	df	p	β
1	General attitudes (NEP)	0.81	0.81	112.57	6159	$p<0.001$	−0.01
	Attitudes						0.19***
	Subjective norms						0.10*
	Perceived behavioural control						−0.01
	Group membership						0.30***
	Self-identity						0.57***
2	Group membership × general attitudes	0.83	0.02	2.68	5155	$p<0.05$	0.00
	Group membership × attitude						0.10
	Group membership × subjective norms						−0.01
	Group membership × control						−0.04
	Group membership × self-identity						0.15**

*$p<0.05$; **$p<0.01$; ***$p<0.001$.
Note: Beta coefficients for the main effects were computed after the interaction terms were entered into the equation.

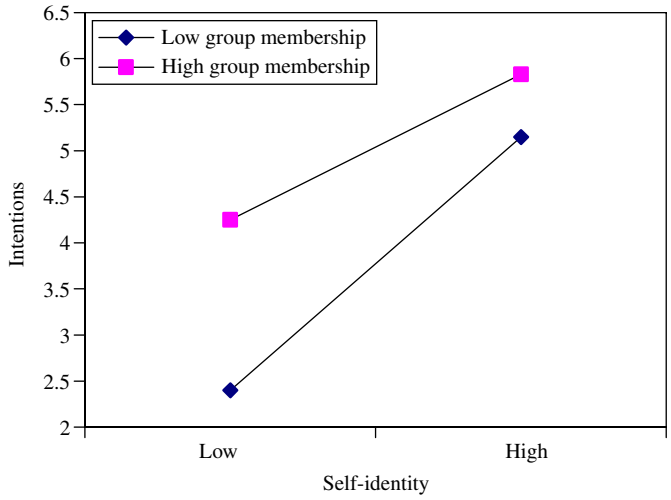

Fig. 1. Interaction between self-identity and group membership on behavioural intention.

membership × subjective norms, group membership × PBC, group membership × self-identity) were then entered at the second step. From Table 3 it can be seen that the addition of the interaction terms significantly increased the proportion of variance explained at Step 2. Of the interaction terms, only the interaction between group membership and self-identity emerged as a significant predictor of intention.

As shown in Fig. 1, simple slope analyses to investigate the interaction revealed that the effect of self-identity on intentions was stronger at low levels of group membership ($\beta = 0.76$, $p<0.001$) than at high levels of group membership ($\beta = 0.29$, $p<0.05$), providing support for H5.

8. Discussion

The current study drew on a well-established social–psychological model to examine decisions to engage in environmental activism. Moreover, in keeping with recent theoretical developments of the model, the model incorporated measures of social and self-identity. The addition of the identity constructs to the TPB significantly increased the explanatory power of the basic model. Overall, the revised model successfully accounted for environmental activism intentions, explaining a total of 81% of the variance.

In the current study social identity, operationalised as membership in an environmental group, was a strong predictor of environmental activism intentions. Similarly, previous research has shown that group membership motivated activist intentions and behaviour (e.g., Hornsey et al., 2006; McFarlane & Boxall, 2003; McFarlane & Hunt, 2006). The core business of most environmental groups is to promote activities that help protect the environment, a message that is presumably communicated to their members. Moreover, environmental groups tend to promote public sphere activist behaviours such as signing petitions, sending letters and postcards to government ministers, and taking part in public demonstrations. Individuals who belong to one or more groups should, therefore, be getting clear normative messages from a range of sources, thus impacting on their motivation to engage in behaviours—including activist behaviours—that help to protect the environment. Thus, consistent with the argument of McGarty and Turner (1992) social groups embody social norms.

Self-identity also emerged as an independent predictor of environmental activism intentions indicating that the stronger participants' sense of themselves as environmental activists, the greater their intentions to engage in this behaviour. This finding is fully consistent with the logic of identity theory (Stryker, 1968, 1980) and with past research that has incorporated self-identity into the TPB (Armitage & Conner, 1999; Biddle et al., 1987; Charng et al., 1988; Conner & Armitage, 1998; Cook et al., 2002; Mannetti et al., 2004; Pierro et al., 2003; Sparks & Guthrie, 1998; Sparks & Shepherd, 1992; Terry et al., 1999). An environmental activist engages in environmental activism—to do so affirms this identity and to not do so results in identity-related discomfort.

Although this finding contributes to a growing body of literature implicating self-identity in behavioural decision-making, criticisms of this construct should be acknowledged. In particular, Fishbein (1997) argues that self-identity may be an alternative measure of behavioural intentions. In the current study the correlation of self-identity and intentions was very high lending weight to this argument. Consistent with previous research (e.g., Sparks & Shepherd, 1992; Terry et al., 1999), however, our analyses showed support for the empirical distinction between self-identity and intentions. Moreover, as Conner and Armitage (1998) noted in their review of TPB, correlations between intentions and self-identity ranged from weak to strong, indicating that there is great variation in the strength of the relationship between these two constructs. The present study indicates that in the case of environmental activism, the relationship between identity and intentions is strong. A possible solution to this issue is the use of more subtle and indirect measures of

self-identity such as the identity–similarity measures used in recent research (Mannetti et al., 2004; Pierro et al., 2003).

We also investigated whether group membership moderated the influence of the revised TPB variables. As predicted, group membership moderated the impact of self-identity such that self-identity was a stronger predictor of intentions at low levels of group membership than at high levels. We argue that this is because for those with high levels of group membership, it is one's social identity as a member of an environmental group (or groups) and the concomitant norms of the group (or groups) that are the strongest influence on behavioural decisions. For those with low levels of group membership, however, the norms of environmental groups may have little or no impact on behavioural decisions and, instead, it is the extent to which one thinks of oneself as an environmental activist that guides intentions. In the current study we did not measure group norms. However, we argue that group membership is a proxy measure as membership in groups brings an awareness of and adherence to the norms of the group (e.g., Terry & Hogg, 1996; Terry et al., 1999; White et al., 1994). In a similar vein, Terry et al. (1999) found that the correlation between group norms and self-identity was stronger for high group identifiers than low identifiers demonstrating that self-identity is a construct distinct from group norms for those individuals who have little or no alignment with the group. The present finding also resonates with research from the social dilemma literature that shows that social identification moderates the impact of individual difference variables (e.g., value orientation) on individuals' motivation to cooperate (e.g., De Cremer & Van Vugt, 1999).

We did not find support for the hypothesis that participants with higher levels of group membership would be more influenced by group-level variables (subjective norms), whereas those with lower levels of group membership would be more influenced by individual-level variables (attitudes, PBC). This is somewhat puzzling as research by Terry and Hogg (1996) and Terry et al. (1999) has provided evidence that attitudes and PBC were stronger predictors for low than high group identifiers. One point of difference is that Terry and colleagues were assessing the moderating effects of level of group identification, thus, they showed within-group differences in the predictive strength of TPB variables. In contrast, our study examined moderation on the basis of participants' level of group membership, that is, no group membership, member of one group, member of two groups, etc. This global measure of group membership may not have been as sensitive as the group identification measures used in past studies. Thus, the predicted moderation of TPB variables did not emerge, and instead the present study indicates similar effects of the standard TPB variables whether or not participants are members of an environmental group or groups.

Consistent with the TPB, attitudes and subjective norms emerged as significant positive predictors. Thus, individuals who had more positive attitudes toward environmental activism, and perceived greater normative support for this activity, also had greater intentions to engage in the behaviour. In contrast to TPB predictions, PBC was not a significant predictor of intentions. Although contrary to TPB predictions, the finding is consistent with previous TPB research examining activism intentions. Kelly and Breinlinger's (1995) study of participation in the women's movement showed that PBC added little to the model's explanatory power, and, moreover, in a study of anti-nuclear activism, Fox-Cardamone et al. (2000) found that only attitudes were a significant predictor of activism intentions. Taken together, this evidence suggest that activism is a set of behaviours individuals perceive to be within their volitional control (Ajzen, 1991). In the current study, the mean of 5.42 for PBC (on a 7-point scale), indicating that participants felt a relatively high sense of control, provides further support for this conclusion.

As predicted, general environmental attitudes had their effect on intentions via identity. More specifically, our results demonstrate that general attitudes are fully mediated through self-identity. Although the findings from the present study do not allow us to establish causal relationships, it is likely that higher levels of environmental concern motivate individuals to take action (cf. Deci & Ryan, 1985, 1991). This may be in the form of engaging in activist behaviours that result in the development of an activist identity. In this way, it is identity that becomes the strongest and most proximal determinant of intentions.

8.1. Limitations

Despite clear support for the revised TPB model, there are a number of limitations of the study that must be acknowledged. The most important of these is that the study measured intentions but not behaviour. A meta-analysis of 185 TPB studies demonstrated that, on average, intentions accounted for 27% of the variance in behaviour with the relationship being stronger for self-report than objective measures of behaviour (Armitage & Conner, 2001). This provides some indication that intentions are likely to be a good predictor of future environmental activism behaviour. Nevertheless, there is a need for future research to measure behaviour as well as intentions when assessing the utility of the TPB for predicting engagement in environmental activism.

A second important limitation of the study is the use of a predominantly student sample. This raises questions about the extent to which the current results can be generalised to more diverse, community-based samples. It should be noted, however, that the results obtained in the current study accord with theoretical predictions and the findings of previous TPB studies utilising student and non-student samples. This consistency lends weight to the external validity of the findings of the current study.

8.2. Implications and conclusions

Despite many examples of environmental activism resulting in positive outcomes, researchers note the gap between environmental concern and action (Hinkle et al., 1996; Seguin et al., 1998). The findings of the current study provide clear evidence of factors that motivate individuals to engage in environmental activism and can therefore provide suggestions to groups and individuals seeking to harness support for environmental change. Clearly, getting people to join an environmental group or groups is one important way to motivate activism. To this end, environmental groups may have to overcome negative beliefs about the type of people who engage in activism. Profiling popular, "mainstream", members may be one way to overcome these types of beliefs. Moreover, convincingly demonstrating the benefits of activism may also help to change attitudes (see Fielding et al., 2005) to environmental activism and motivate people to join environmental groups or at the very least motivate individually based activism such as voting for green candidates or signing petitions. As results showed, having a sense of the self as an environmental activist is strongly associated with activist intentions and one way to develop this self-identity may be through repetition of the behaviour (Conner & Armitage, 1998; but cf. Terry et al., 1999). As other researchers have noted, more research is needed to fully understand the processes by which self-identity influences intentions (e.g., Pierro et al., 2003).

In conclusion, the current study gives insight into the factors influencing environmental activism, a set of behaviours that has

received relatively little attention in the research literature, despite the potential for activist behaviour to bring about significant positive change. Moreover, just as the TPB has been used to understand other environmental behaviours, the current research demonstrates its utility in understanding environmental activist behaviours. Thus, whether considering private-sphere or public-sphere environmental actions (Stern, 2000), the TPB is an effective model for identifying the predictors of these types of behaviours.

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