



Pro-environmental behaviors for thee but not for me: Green giants, green Gods, and external environmental locus of control[☆]



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ABSTRACT

Understanding consumers' allocation of environmental responsibility to external forces (i.e., those perceived to be beyond their direct control) is important yet under-researched. This paper examines how these external attributions affect consumers' pro-environmental behaviors (PEBs). A model of external environmental locus of control (i.e., external-ELOC) is tested, consisting of two superordinate dimensions: powerful-others (encapsulating corporate and government responsibility facets) and chance/fate (incorporating God/higher-power and natural earth-cycle facets). The two higher-order factors negatively associate; such that consumers ascribing environmental responsibility to powerful-others engage in PEBs; whereas those attributing environmental change to chance/fate typically do not. The results inform practical and public policy implications; pinpointing ways for corporations and governments to target their pro-environmental efforts and to sway consumers who share in the ecological burden.

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1. Introduction

The convergence of three trends – globalization (and the concomitant rapid expansion of middle-class consumer markets), burgeoning population growth, and widespread evidence of environmental degradation (Friedman, 2009) – has brought environmental issues to the very forefront of public, political, and academic discourse. A recent cover story in the *Economist* (2011) heralded the anthropocene epoch, from which the label describes how “humans have become a force of nature reshaping the planet on a geological scale” (p. 11). An extensive body of research exists on the topic; mostly conducted from the perspective of consumption, and mainly delving into the links between consumers' pro-environmental attitudes and behaviors (Cleveland, Kalamas, & Laroche, 2005; Leonidou & Leonidou, 2011; Sarigöllü, 2009; Urien & Kilbourne, 2011). Yet the findings have been mixed, contradictory, or trivial. The majority of consumers expresses concerns about the environment in general, and furthermore, admits to apprehension about the environmental impact of their own consumption behaviors. Notwithstanding public displays of recycling (often mandated by law) this concern has largely not been matched with behavioral

changes, as evidenced by the meager market shares achieved by environmentally-friendly alternatives and the growing ecological footprint occupied by the average consumer. Evidently, environmental concern is an indispensable but insufficient basis for sustainable consumption.

The predictive power of psychographics (attitudes, values, and lifestyle variables) in explaining PEBs is nevertheless considerably higher than that achieved by standard demographic variables (Cleveland et al., 2005; Guagnano, 1995). The most promising findings pertain to attitudinal constructs associated with perceptions and attributions of control over pro-environmental outcomes. To this end, most research focuses on notions associating with individual consumers' dispositions of personal (i.e., internal locus of) control. Few examine the role played by consumers' external loci of control.

Many individuals strive to be environmentally conscious; at the same time, perceiving external constraints on the effectiveness of individual consumer actions (Thøgersen, 2005). Recognizing that the sustainability of private consumption behavior is affected not only by the individual, this research examines consumers' perceptions regarding the roles played by governments and businesses (i.e., green giants), as well as perceptions regarding chance/fate factors (i.e., green Gods). The focus here is on external facets of environmental locus of control; a topic that has received scarce attention, when compared against the extensive body of research focusing on the relationship between internal environmental dispositions (e.g., self-efficacy, perceived consumer effectiveness, perceived environmental control, and internal environmental locus of control: Cleveland, Kalamas, & Laroche, 2012).

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While the current state of the ecology is ultimately the product of trillions of past and present aggregated individual behaviors, it is also the result of the activities of many thousands of corporations and institutions, all operating within the larger economic and regulatory frameworks constructed by the governmental bureaucracies of nation states and global bodies. As such, researchers aver that – to a greater or lesser extent, depending on individual and situational characteristics – internal and external dispositions coexist and often are in conflict within the same consumer (McDonald, Oates, Young, & Hwang, 2006). Cleveland et al. (2005, p. 200) state that “consumers’ interaction with the environment will have taught them whether and to what degree they can exert control over their surroundings.” The position taken here is that these dispositions manifest differentially according to the salience of the environmental context. Simply stated, external environmental locus of control (hereafter, external-ELOC) encapsulates the extent to which consumers attribute pro-environmental outcomes to external forces perceived beyond their personal control.

Operationalizing external-ELOC, comprehensively capturing the multidimensional qualities of the construct, is the first goal of this study. The second goal is to improve upon the consistently weak abilities of attitudes in explaining pro-environmental behaviors (hereafter, PEBs) cataloged in the literature; demonstrating that the relationship varies across pro-environmental contexts. The third goal is to identify market segments defined by the scores achieved on the powerful-others and chance/fate dimensions of external-ELOC, and to compare these scores along gender and religious faith.

2. Theoretical background and hypotheses

2.1. The pro-environmental attitude–behavior relationship

Undoubtedly, the most popular theory linking attitudes to behaviors is Ajzen’s (1985) theory of planned behavior (TPB), which – building upon Fishbein and Ajzen’s (1975) theory of reason action – is notable for the inclusion of perceived behavioral control; in other words, individuals’ perceptions of their *ability* to behave in a certain way. For example, the consumer may have a positive attitude towards the environmentally-benign alternative and this attitude could also be reinforced by the norms of their peer group, yet this alternative may not be selected due to a lack of immediate availability, because it is too expensive, not worth the extra cost/effort (e.g., due to the perceived futility of being green).

Perceived behavioral control has corresponding constructs in the environmental literature; including perceived environmental control (Smith-Sebasto, 1992), perceived consumer effectiveness (Roberts, 1996) and environmental locus of control (Allen & Ferrand, 1999). According to Cleveland et al. (2005, p. 198), the latter “stands between general, dispositional measures of locus of control (LOC) and transitory, situation-specific attitudes” and (compared to other control-related measures) effectively captures consumers’ tendency to engage in PEBs.

2.2. External-ELOC

Levenson’s (1974) work, refining the internal–external (I–E) locus of control (LOC) perspective proposed by Rotter (1966), finds many hundreds of citations across a wide range of disciplines. Rotter conceptualized LOC dichotomously along a single continuum, whereby individuals categorize as either internals or externals. Internals should be motivated to undertake PEBs because they believe that their behavior can bring about a desirable outcome; whereas externals should be little motivated to engage in the same because they feel they lack mastery over the situation; thus sensing disconnection between their behavior and a preferred end result.

Studies on Rotter’s scale have yielded mixed and often contradictory findings. Levenson (1974) argues that interpretations obscure because the I–E scale lacks consideration of the expectancy of control

by powerful others. She argues that it is critical to distinguish between individuals who believe in an unordered world (i.e., chance expectancies) from those having a powerful-others orientation. In the latter case, individuals believe in an ordered world because a potential for control exists. Levenson proposes a tripartite distinction, involving three scales for internal, powerful others, and chance (i.e., IPC) dimensions, thus differentiating between two classes of externals. This expanded conceptualization suggests several relationships between pro-environmental attitudes and behaviors. A consumer may lack motivation to engage in PEBs because they ascribe ecological responsibility to powerful others, specifically government and business decision makers. Alternatively, the consumer may be motivated (or not) to engage in PEBs, however, s/he may perceive that any personal efforts would be ineffectual (Sarigöllü, 2009)—especially if s/he believes that these powerful others are loath to act in kind. In this case, the costs of being environmentally responsible are borne by the consumer, yet the benefits to society at large are negligible. Finally, without economic inducements s/he will avoid PEBs altogether if s/he attributes environmental conditions to natural causes or subject to fate (the will of God or a Higher Power).

The subject of another paper by the current authors, internal-ELOC is defined as “consumers’ multifaceted attitudes pertaining to personal responsibility towards and ability to affect environmental outcomes” (Cleveland et al., 2012, p. 293). The external domain of ELOC encapsulates attitudes towards environmental outcomes that consumers believe are the result of extraneous forces beyond their volition. Two categories likely playing a role in the environmental A–B correspondence encapsulate those forces that remain subject to human control – albeit beyond that of most individuals – and those forces that are deemed truly beyond human control (i.e., powerful others and chance or fate aspects of IPC). These categories are fundamentally different. The former implies that the solutions for environmental degradation lie with humankind and the latter implies that humans are ipso facto powerless in regards to long-term environmental conditions.

2.3. External-ELOC: powerful-others

Alongside energy generation, transportation, agriculture, and consumer consumption (all interrelated with business activities), the economic activities of corporations collectively rank as one of the largest sources of pollution and other forms of environmental degradation (e.g., soil erosion, depletion of natural resources, destruction of biodiversity). Totalling \$2.15 trillion in 2008 (with greenhouse gas emissions accounting for most of the damage), “medium-to-large sized publicly listed companies cause over one-third (35%) of global externalities annually” (PRI & UNEP Finance Initiative, 2010, p. 4). Many individuals are thus likely to feel a sense that any environmentally-beneficial actions on their part would be mitigated by the sheer volume of the activities of huge corporations or that any benefits would be lost if other actors in society free ride on those personal efforts (Stern, 1992). The barriers to environmental action extend beyond the individual to include social and institutional forms. While industries can enact and abide by voluntary agreements regarding waste/pollution and resource use, only politicians and governments have the ability to impose binding standards (e.g., greenhouse gas emissions) and other legal restrictions (which might also include subsidies for purchasing environmentally-friendly alternatives or investing in environmentally-benign manufacturing technologies/processes) on the environmentally-harmful activities of individuals and companies. Through such actions, “governments can mitigate global change by imposing desired behavior on citizens” and firms alike (Stern, 1992, p. 292). Compared to individual consumers however, governments and corporations are two of the major powerbrokers in the environmental sphere—each wielding considerable influence. “Because the power to make a significant difference, one way or the other, to global or even local environmental change is immensely unevenly distributed[,]” the

powerful-others dimension of external-ELOC is therefore multifaceted (Redclift & Benton, 1994, pp. 7–8). As such,

H1. External-ELOC-PO is a higher-order construct; encapsulating perceptions of environmental control in the hands of powerful others.

2.4. External-ELOC: chance/fate

Despite the fact that most consumers belong to or identify with one of the major world religions, religion in the marketing sphere, is an under-researched topic. Broadly speaking, religion denotes adherence to a particular faith or creed (e.g., Muslim, Christian), or more narrowly, to a specific sect/denomination (e.g., Sunni, Catholic). Common across the major world religions are two interrelated issues relevant to inculcation and expression of pro-environmental attitudes and consumption behaviors, respectively. These are: (1) an emphasis on collectivism, and subordinating personal success to the betterment of others, and (2) renouncing material passions that clash with religious values; that is, demoting the importance of material possessions in favor of embracing spiritual aspirations (McDonald et al., 2006).

Religiosity concerns the centrality of religion, that is, how religion directs the individual's life in terms of adhering to religious role expectations (Weaver & Angel, 2002). Influencing individuals' values and attitudes, religiosity ultimately impacts behaviors. Individuals vary in the intensity to which they internalize and practice religious-relevant aspects (Cleveland & Chang, 2009). Furthermore, the salience of religious identity varies across contexts; here, identity-relevant pro-environmental attitudes/behaviors due to environmental cues.

The mores of Eastern religions (e.g., Buddhism, Hinduism) as well as those of indigenous cultures portray as more ecologically-friendly than Christianity (Taylor, 2008). The focus here is on the latter, given the North American sample frame and concomitant Christian heritage. Research depicts the individualist and predominately Christian North American culture as reflecting dominance over nature, when compared to say, the collectivist, Muslim perspective of harmony and submission (Sarigöllü, 2009). Judeo-Christian heritage, particularly the anthropocentric notion that humans possess dominion over the earth (as in *Genesis 1*), has long been a far-reaching explanation (Fowler, 1995; White, 1967) for human acceptance of environmental degradation. However, Christian religious beliefs are not incommensurable with pro-environmental attitudes and behaviors. Several studies report inverse relationships between belief in God and pro-environmentalism, whereas others report positive associations. The distinction lies between those individuals holding interpretive attitudes towards the Bible (espoused by Catholics) and those adhering to a strict doctrinal view of the Bible (championed by fundamentalist Protestants). Indeed, several researchers link convictions of a literal interpretation of religious texts to lower levels of environmental concern (Boyd, 1999; Eckberg & Blocker, 1989; Greeley, 1993).

From an ELOC perspective, these doctrinal religious convictions will take the form of fatalistic perspectives of the ecological landscape and biblical literalists will therefore ascribe current environmental conditions to God's will for the planet/humanity. "God willing" finds equivalent expressions in the (Catholic) Latin *Deus Vult* and with the (Islamic) Arabic *In šā' Allāh* (Bloom & Blair, 2002). Sarigöllü (2009) suggests that the emphasis on fate in Muslim cultures "would imply a more passive rather than a proactive stance" (p. 374) towards the environment. In the Buddhist tradition, fate is distinguishable from *karma*, and elucidation on this distinction clarifies the meaning of the former. Fate refers to the inevitability of the course of events, that is, due to the existence of a greater being that guides individual lives, according to some master plan of the universe. Whereas *karma* is not, strictly speaking, subject to control by a higher power; rather, it springs from intention (Chapple, 1986). In other words, *karma* is the result of the motives (good or bad) behind an action, and thus – utterly unlike fate – falls under volitional activities.

Most scientists believe in anthropogenic climate change; consumers are regrettably far from achieving consensus. Research suggests that in certain countries – including the United States – environmental skepticism is on the rise. The conservative, award-winning columnist Krauthammer (2008) derided the science of global warming in general and climate-change advocates like Al Gore in particular; and described global warming "as a religion", and himself as a "global warming agnostic." Pew Research (2009) found that a third of Americans deny evidence supporting global warming; and other research documents a sharp divide between Republicans and Democrats, with the majority of the former expressing skepticism (Schuldt, Konrath, & Schwarz, 2011). Alongside outright deniers of climate change are those individuals who contend that rather than being primarily anthropogenic, global warming is largely attributable to natural causes, most notably, to natural variations of the Earth's climate cycles (e.g., global warming/cooling, cyclical ocean currents like *El-Niño*, volcanism, variations in solar radiation, naturally-occurring greenhouse gases, orbital variations). Hence,

H2. External-ELOC-CF is a higher-order construct; encapsulating perceptions of environmental control attributable to chance factors or fate.

2.5. Interrelationships of external-ELOC dimensions

In regards to powerful others, Thøgersen (2005) states that "... governments and businesses are responsible for much of the external conditions limiting an individual consumer's freedom to choose and act, and therefore they also carry part of the responsibility for sustainable consumption" (p. 145). Holding a high level of internal control should therefore not preclude an individual from also ascribing responsibility (external control) to powerful others (Guagnano, 1995). On the one hand, both environmental activists and supporters (Stern, Dietz, Abel, Guagnano, & Kalof, 1999) are prone to make personal changes and encourage others to make similar lifestyle changes in order to behave in ways consistent with pro-environmental goals. They are also likely to believe that (and possibly, put pressure on) powerful others (e.g., politicians and corporate decision makers) must strive towards environmental sustainability (e.g., through environmental regulations and the reduction of ecologically-harmful manufacturing processes). On the other hand, by their very nature high external-ELOC-PO (vs. high ELOC-CF) individuals are unlikely to express beliefs that current global environmental changes are mainly the result of chance/fate factors. They recognize anthropogenic causes, but confer responsibility to the powerful societal actors as well as to themselves, partly blaming "others for environmental destruction (e.g., the industries, the multi-nationals, the political establishment...)" (Kollmuss & Agyeman, 2002, p. 255). Thus,

H3. The external-ELOC dimensions of PO and CF negatively associate.

2.6. External-ELOC and PEBS

Studies demonstrate that, like many behaviors, PEBS are context- or situation-specific (e.g., Balderjahn, 1988; Cleveland et al., 2005; Roberts & Bacon, 1997; Sarigöllü, 2009). Individuals "...do not behave in a consistently proecological manner" (Tanner, 1999, p. 154). The theory of planned behavior (Ajzen, 1985) posits that the role of attitudes on behavioral outcomes depends in part on the context and on the nature of the behavior itself. Relevant to the current study, these contexts entail the purchasing environment and associated cues (e.g., perceived choice/availability of alternatives [e.g., lack of public transit], perceived differences among alternatives along environmental and other product attributes, relative and actual price differences between alternatives), as well as the nature of the need being satisfied (utilitarian versus hedonic, public versus private

consumption, and so forth). Furthermore, the notion that the consumer's needs and priorities change considerably as s/he moves through different life stages has strong support in the literature. For example, the environmentally-conscious single student may choose public transport; an option that may be difficult to maintain later in life when juggling a career and family—here, s/he then engages more in energy conservation and recycling (McDonald et al., 2006). Thus the same individual takes part in some PEBs, but not others. Studies show that the pro-environmental A–B relationship is strongest “if both are assessed at the same level of specificity” (Sarigöllü, 2009, p. 373). The current research adopts the perspective that “... consumers, driven by egoistic and altruistic motives, will feel more or less powerful to act in a pro-environmental fashion and will thus internalize/externalize their share of responsibility, holding themselves and others more or less accountable” (Cleveland et al., 2005, p. 200), depending on the behavioral context. Subsequently,

H4. The influence of the two external-ELOC dimensions on behavior varies across PEBs.

Regarding the directional effect of the external dimensions of ELOC on PEBs, the literature is scarce. Guagnano (1995) states that those subjects who believe that life is determined by chance/luck had lower pro-environmental dispositions. Gould, Schnaiberg, and Weinberg (1997) report that support for government action on environmental issues was only weakly associated with general environmental attitudes. Drawing from these limited findings, the position taken here is that high external-ELOC-PO consumers are likely to engage in PEBs because they feel that any personal efforts will only matter if supported by the pro-environmental actions of powerful others, for those circumstances under which they feel their actions make a difference (Berger & Corbin, 1992). It is possible however for some of these individuals to evade responsibility and assume no pro-environmental action is required on their part (due to the involvement of more capable powerful others). The rationale here is that “people who delegate are unlikely to take any pro-environmental behavior that asks for personal sacrifices” (Kollmuss & Agyeman, 2002, p. 255). The delegation of responsibility is even more pronounced for high external-ELOC-CF persons, who ascribe current environmental conditions to non-anthropogenic causes or fate. Believing that any aggregate environmental consequences are due to the extraneous forces of a higher power (God's will) and/or the natural earth-cycle versus human activities (be they individual or collective), these individuals should be ill disposed to engage in environmentally-friendly behaviors. Thus,

H5. External-ELOC-PO positively or non-significantly predicts PEBs.

H6. External-ELOC-CF negatively or non-significantly predicts PEBs.

2.7. External-ELOC and gender

In terms of the predictive power of demographic variables, gender differences are among the few consistent findings reported. Women are generally more environmentally concerned than men (Tanner, 1999) and more apt to undertake green activities (Diamantopoulos, Schlegelmilch, Sinkovics, & Bohlen, 2003). Whether these differences are a function of the different socialization processes and traditional sex roles, different values and worldviews (Dietz, Kalof, & Stern, 2002), and/or physiological distinctions (Meyers-Levy & Maheswaran, 1991), the general argument is that since women (men) are communally- (agentically-) oriented and subsequently more (less) sensitive to the needs of others, to a greater (lesser) extent women (men) will consider the impact of their actions on others, and therefore be more (less) environmentally concerned and more (less) likely to avoid ecologically-harmful behaviors. This communal orientation should also make females more sensitive to (and expect more accountability from) the environmental impacts associated with the actions

of powerful others, specifically government officials and corporate leaders. Compared to women, the socialization experienced by men implies a more restricted – but more competitive – engagement with other individuals and groups, which manifests in lower mean levels of altruism—a value associated with higher levels of environmental concern (Dietz et al., 2002). Furthermore, studies reveal higher scores for females on the Chance and Powerful Others facets of the IPC locus of control (Brosschot, Gebhardt, & Godaert, 1994; Krampen, Effertz, Jostock, & Müller, 1990). Hence:

H7. Females (versus males) have higher external-ELOC-PO scores.

H8. Females (versus males) have higher external-ELOC-CF scores.

3. Method

3.1. Measures

Forming part of a larger project examining pro-environmental attitudes/actions, a self-report survey measures the independent and dependent variables. The first part contains 176 randomized Likert-scale items (1 = strongly disagree, 7 = strongly agree) designed to tap respondents broad and specific attitudes and beliefs regarding the environment, corresponding to the dimensions emerging from the environmental literature. Multiple items were generated for measuring the focal independent variables; specifically aspects associated with external-ELOC. The survey includes measures for internal environmental locus of control (internal-ELOC) and the sub-dimensions thereof. Internal-ELOC is the subject of a recent paper (Cleveland et al., 2012); only the correlations between Internal-ELOC and each facet of External-ELOC review here for nomological validity. Numerous items adapt from earlier work (Bradley & Sparks, 2002; Cleveland et al., 2005). However, due to the poor predictive power of extant attitudinal measures, and the lack of research on the external aspects of ELOC, the majority of items are novel. Item generation stems from a comprehensive review of the literature on environmentalism, locus of control, and related constructs; followed by administration of expert opinion surveys to senior faculty and graduate students. These surveys provided a working definition for ELOC, the postulated sub-dimensions, and several tentative items for each. Respondents suggested additional measures. This process compiled more than 300 measures independently evaluated and pruned by the authors to eliminate overly redundant, ambiguous, or awkwardly phrased items. These refinements yielded the final set of 176 measures.

The second part of the survey covers 50 friendly pro-environmental behavioral queries. Following other researchers (Chan & Lau, 2000; Cleveland et al., 2005; Schultz & Oskamp, 1996), these vary according to the amount of effort required; covering: recycling behaviors, energy/resource conservation, transportation choices, purchasing/avoiding environmentally-benign/damaging alternatives, and others aspects of environmental concern (donations to environmental causes, composting, etc.). Forty-two behaviors measure with Likert-type scales (1 = strongly disagree/never, 7 = strongly agree/always), the remaining eight entail dichotomous measurement (yes/no). The survey concludes with the demographics: sex, age, marital status, education, employment status, household income, and religious affiliation. Following a pretest (n = 15), minor survey modifications were made to improve clarity.

3.2. The sample

Data (n = 263 usable surveys, 290 distributed) draws from consumers in a major Canadian urban area, using a street intercept technique. Variables measured on nominal scales convert into dummy or ordinal variables. The majority of respondents are single (64%, with 30% married) females (60%). Many are full- or part-time students

(38% and 21%), although most are employed (44% and 33% part-time and full-time, respectively). The sample is youthful: 18–24 (45%), 25–34 (32%), 35–49 (13%), and 50+ years (10%). Household income (\$CAD) distributes as follows: <\$20 K (40%), \$20–39 K (26%), \$40–59 K (14%), and ≥\$60 K (20%). The majority (69%) are at least nominally religious (38% Catholic, 13% Protestant, 6% Muslim, 5% Jewish, with the remaining 7% spread over other faiths). Respondents report high levels of educational attainment: community/vocational/college diplomas (32%), undergraduate (46%) and graduate degrees (14%).

4. Analyses and results

4.1. Exploratory Factor Analyses (EFA)

Using SPSS, EFAs on the set of external-ELOC items (principal components extraction and oblique rotation) identifies items with poor psychometric properties (i.e., low- or substantial cross-loadings). The KMO sampling-adequacy measure (.90) and Bartlett's sphericity test ($\chi^2_{(4465)} = 15,764, p < .001$) confirms the data is suitable for factor analysis. The scree plot demarcates a slope change between 4 and 7 components. For each EFA iteration, poor items were dropped and the results scrutinized. A four-factor solution (eigenvalues > 1, accounting for 70% of the total variance) emerges after 11 iterations, corresponding to the external-ELOC dimensions articulated earlier: *CorpResp* (Corporate-Responsibility, 3 items, $\alpha = .715$), *GovResp* (Government-Responsibility, 4 items, $\alpha = .869$), *HPower* (God/Higher-Power, 6 items, $\alpha = .924$), and *EarCyc* (Natural Earth-Cycle, 4 items, $\alpha = .812$). Factor loadings are agreeable with all save one > .70 (Table 1). The facets associated with powerful-others (PO: *CorpResp* and *GovResp*) positively intercorrelate (Table 2), as do the facets associated with chance/fate (CF: *HPower* and *EarCyc*). Higher-order construct means consist of averaging constitutive dimensions. Scores (Table 3) are considerably higher for PO (5.68) than for CF (2.92). Confirming H3, the higher-order constructs inversely associate ($r = -.13, p = .03$).

4.2. Confirmatory Factor Analyses (CFA)

Using AMOS-18, CFA performs on the retained items, using the maximum likelihood fitting process (see Byrne, 2001). Following alternate model comparisons (Table 4), the second-order external-ELOC model is deemed most appropriate for parsimony (given numerous A–B relationships subsequently tested), although the fit is slightly inferior to the four-factor (correlated) model. Hu and Bentler's (1999) criteria indicate the model represents a good fit to the data ($\chi^2/df = 2.10, CFI = .946, RMSEA = .065$). Ranging .56–.89, standardized coefficients are all highly significant (Table 1). The robust parameter estimates provide strong support for H1–H2. Per H3, the second-order external-ELOC factors (PO and CF) negatively correlate ($r = -.25, p = .03$). Guagnano (1995) also reports negative PO–CF inter-correlations on Levenson's (1974) original items.

Confirming expectations and exceeding Fornell and Larcker's (1981) criteria for convergent and discriminant validity (Table 5), external-ELOC manifests in a double second-order factor structure, (Fig. 1). Powerful-others (PO), reflects the belief that humankind's activities are indeed detrimentally affecting the environment, although responsibilities and ultimate solutions largely lie with powerful others. High PO consumers expect the larger societal actors (corporations/governments) to strive towards environmental sustainability. Chance/fate (CF), encapsulates skepticism that environmental degradation is primarily anthropogenic. High CF consumers tend to attribute the current state of the environment (including global climate patterns) to God's will and/or the planet's geophysical cycle.

For nomological validity, correlations of external-ELOC dimensions to the internal-ELOC factor described in Cleveland et al. (2012) report here. Internal-ELOC is positively correlated to ELOC-PO ($r = .59, p < .001$) and negatively to ELOC-CF ($r = -.25, p = .028$). Employing

Table 1
External environmental locus of control (EXELOC).

	EFA ^a	CFA ^b
<i>Corporate responsibility (EXELOC-CorpResp)</i>	$\alpha = .715$	$r^2 = .554$
The responsibility for cleaner water lies with companies.	.861	.556
Multinational corporations should accept the responsibility for improving the state of the environment.	.703	.837
Companies need to take the lead in promoting environmental responsibility.	.698	.650
<i>Government responsibility (EXELOC-GovResp)</i>	$\alpha = .869$	$r^2 = .591$
Politicians can have an impact on the state of the environment.	.878	.892
Politicians have the power to deal with local environmental challenges (such as air quality in cities).	.853	.766
Political institutions have the power to control pollution levels (e.g., with anti-pollution laws).	.834	.753
Governments have the ability to solve global environmental challenges.	.796	.768
<i>God/higher power (EXELOC-HPower)</i>	$\alpha = .924$	$r^2 = .431$
The state of the environment is ultimately under God's control.	.918	.875
We can attribute most environmental patterns to God.	.882	.881
The state of our natural resources reflects God's plan for the planet.	.870	.834
God has a lot to do with what happens to the environment.	.839	.859
The current state in which we find the environment reflects God's will.	.784	.805
What will become of our environment tomorrow, only God can say.	.775	.687
<i>Natural earth-cycle (EXELOC-EarCyc)</i>	$\alpha = .812$	$r^2 = .438$
Some of the global climate changes we are witnessing are due, in part, to earth's normal cycles.	.846	.677
Earth's natural cycle is responsible for many environmental changes we are witnessing.	.801	.785
To some extent, the current state of the environment is determined by the earth's natural cycle.	.753	.737
Global warming has a lot to do with our planet's natural climate cycles.	.717	.634

^a Cronbach's alphas, loadings.

^b Explanatory power (squared-multiple-correlations), standardized-regression-weights ($p < .001$).

Levenson's (1974) scale in an environmental A–B context, Guagnano (1995) also reports a positive (negative) association between internal LOC and the powerful-others (chance) dimension. Discriminant validity exists between internal-ELOC and both external-ELOC dimensions, with squared correlations with PO (.35) and CF (.06); well below the average-variance-extracted for internal-ELOC (.68), PO (.76) and CF (.66). The high positive correspondence between internal-ELOC and PO underscores the insufficiency of conceptualizing individuals as primarily internal or external. Internal and external notions of environmental responsibility are clearly compatible: willing to do their part, but allocating shared responsibility to powerful others.

4.3. External-ELOC and PEBs

To assess the constructs' predictive ability, paths link the second-order external-ELOC dimensions to each behavior. Respectable fit indices exist for all models (specified for the seven groups in

Table 2
Factor correlation matrix.^a

	<i>CorpResp</i>	<i>GovResp</i>	<i>HPower</i>	<i>EarCyc</i>
<i>CorpResp</i>	1			
<i>GovResp</i>	.45* (.58*)	1		
<i>HPower</i>	-.22* (-.29*)	-.07 (-.09)	1	
<i>EarCyc</i>	-.06 (-.10)	-.03 (-.03)	.37* (.43*)	1

^a Pearson correlations; parentheses denote latent-factor correlations.

* $p < .01$ (2-tailed).

Table 3
Descriptives for gender and religion.^a

Construct	Mean (SD)	t-Test
Gender differences (T, F, M):		
EXELOC-PO	5.7 (.86), 5.6 (.89), 5.8 (.81)	– 1.51
CorpResp	5.6 (1.0), 5.6 (1.0), 5.6 (1.1)	– .12
GovResp	5.8 (1.0), 5.6 (1.0), 6.0 (.90)	– 2.52**
EXELOC-CF	2.9 (1.2), 2.8 (1.1), 3.2 (1.3)	– 2.85**
EarCyc	3.8 (1.5), 3.6 (1.4), 4.0 (1.5)	– 2.29*
HPower	2.1 (1.4), 1.9 (1.2), 2.3 (1.5)	– 2.44**
Religious differences ^b (T, N, C, P):		
EXELOC-PO	5.7 (.86), 5.8 (.86), 5.6 (.89), 5.7 (.64)	
CorpResp	5.6 (1.0), 5.8 (1.0), 5.6 (1.1), 5.7 (.82)	
GovResp	5.8 (.99), 5.7 (1.1), 5.7 (1.0), 5.8 (.69)	
EXELOC-CF	2.9 (1.2), 2.7 (1.0), 2.8 (1.1), 3.0 (1.1)	
EarCyc	3.8 (1.5), 3.7 (1.6), 3.7 (1.5), 3.5 (1.3)	
HPower	2.1 (1.4), 1.6 (1.0), 1.9 (1.2), 2.5 (1.3)	
		N-C (– 1.96*)
		N-P (– 3.81**)
		C-P (– 2.50**)

Independent-samples t-tests *p < .05, **p < .01. Bold data indicate significant findings.

^a T = total, F = female, M = male, N = non-religious, C = Catholic, P = Protestant.

^b Only significant pairwise-differences are reported for religion.

Table 6): CFIs .925–.950, RMSEAs < .60, and χ^2/df 1.60–1.86. As per H4, the direction/magnitude varies considerably across the various PEBs, corroborating the notion that people do not consistently behave in a pro-environmental manner. Out of 50 behaviors, PO was significant in 18 (one negative) compared to 11 instances for CF (nine negative). In only one case are both constructs jointly predictive.

Upholding H5/H6, when significant, PO almost always positively relates to PEBs, whereas CF mostly negatively associates. PO predicts environmental activism behaviors (positively for 5/7 cases: behaviors 26, 28, 29, 31, 32) as well as specific daily PEBs (positively for 9/10 cases: behaviors 34–40, 42–43). CF plays a role in 4/6 avoidance-purchasing behaviors (i.e., 21–23, 25); all negative, implying that these types of products are purchased *more* frequently among individuals with higher CF scores. CF also negatively predicts 4 recycling behaviors (i.e., 1, 4, 8, 9). These variable A–B findings also hold relevance for the related topics of organic foods and fair-trade products, due to the likelihood of varying loci of control among consumers regarding underlying needs and motivations.

4.4. External-ELOC, gender and religion

Sex differences (Table 3) emerge for CF but not PO: females report substantially lower and marginally lower respective scores on these dimensions, supporting H8 but not H7. Differences exist for several sub-facets. The literature asserts that women are generally more environmentally concerned (Zelezny, Chua, & Aldrich, 2000) and are more likely to engage in PEBs (Olli, Grendstad, & Wollebaek, 2001),

Table 4
Fit of alternative models.

Models	χ^2	df	χ^2/df	($\Delta\chi^2/df$) ^a	CFI	RMSEA
Independence	2508.06**	136	18.42	NA	NA	NA
One-factor	1208.63**	119	10.16	8.27*	.541	.187
Four-factor (uncorrelated)	355.56**	119	2.99	7.17*	.900	.087
Four-factor (correlated)	231.71**	113	2.05	0.94	.950	.063
Second-order factor	243.62**	116	2.10	–.05	.946	.065

χ^2/df : adjusted chi-square, CFI: comparative-fit-index, RMSEA: root-mean-squared-error-of-approximation.

** p < 0.01.

* p < 0.05.

^a Results following these consecutive model comparisons: (1) one-factor vs. independence, (2) four-factor-uncorrelated vs. one-factor, (3) four-factor-correlated vs. four-factor-uncorrelated, and (4) second-order-factor vs. four-factor-correlated.

Table 5
External-ELOC convergent and discriminant validity.

Convergent (AVE)		Discriminant (SC)	
CorpResp	.68	CorpResp/GovResp	.33
GovResp	.80	CorpResp/HPower	.09
HPower	.82	CorpResp/EarCyc	.01
EarCyc	.71	GovResp/HPower	.01
		GovResp/EarCyc	.01
		HPower/EarCyc	.19
EXECLOC-PO	.76		
EXELOC-CF	.66	EXELOC: PO/CF	.06

AVE: average-variance-extracted, SC: squared-correlation.

especially in the private (vs. public) domain (Hunter, Hatch, & Johnson, 2004). In corroboration, the results show that women are less apt to attribute environmental conditions to government responsibility, fate (God/higher power) or chance (natural earth-cycle). Women put less of the onus on external environmental factors, preferring instead more personal approaches to ecological problems, following Cleveland et al.'s (2012) finding of higher internal-ELOC scores for females. Differences across religious groups consist of contrasting the non-religious, Catholic, and Protestant respondents (other faith/sect sample sizes are too small). Discrepancies are most pronounced on the HPower facet; as expected, non-religious score below Catholics (1.6 vs. 1.9, p = .05), who in turn score below their Protestant counterparts (1.9 vs. 2.5, p = .01).

Post-hoc analyses on the other demographics did not reveal significant relationships to the focal constructs.

4.5. Clustering consumers along external-ELOC

To pinpoint consumer segments, k-means cluster analysis probes the interrelationships of the external-ELOC dimensions. From four iterations (imputing 2–5 clusters desired), the three-cluster solution is most interpretable (Fig. 2). Differences emerge along PO (F = 111, p < .01) and CF (F = 258, p < .01), as well as along all facets: CorpResp (F = 80, p < .01), GovResp (F = 52, p < .01), HPower (F = 81, p < .01), and EarCyc (F = 147, p < .01). Sex differences exist ($\chi^2_{(2)} = 6.6, p < .05$). With 32% (n = 84) of respondents, cluster one denotes high PO and moderate CF levels (means of 6.0 and 4.0, respectively). Adjusting for sample size, males are disproportionately overrepresented, Catholics and non-religious slightly underrepresented, Protestants roughly in proportion, and the other faiths variably overrepresented. Cluster two is the largest (n = 133; ~51% of respondents and disproportionately female), characterized by high PO and very low CF scores (5.9 and 2.0, respectively). The non-religious and Catholics are overrepresented; whereas Protestants, Muslims, Jews, and Eastern religions are underrepresented. The final, smallest cluster (n = 46, ~18%) denotes individuals with relatively low PO and moderate CF scores (4.4 and 3.7, respectively). Here, males are slightly overrepresented; with non-religious, Catholics, and Protestants roughly proportionate (small representation of the other religious groups precludes conclusions). These findings are in tune with the relative notions of the interpretive and the doctrinal views of the Bible upheld by Catholics and Protestants, respectively.

5. Discussion and implications

While changes in the lifestyles of individuals are indispensable to bring about positive environmental results, reproaching “consumers for unsustainable lifestyles” (Thøgersen, 2005, p. 144) is improper since “macro conditions exist which can be blamed for contributing to the problem or constraining the effectiveness of individual efforts (e.g., companies that do not provide ecologically friendly products, government inactivity)” (Roberts & Bacon, 1997, p. 89).

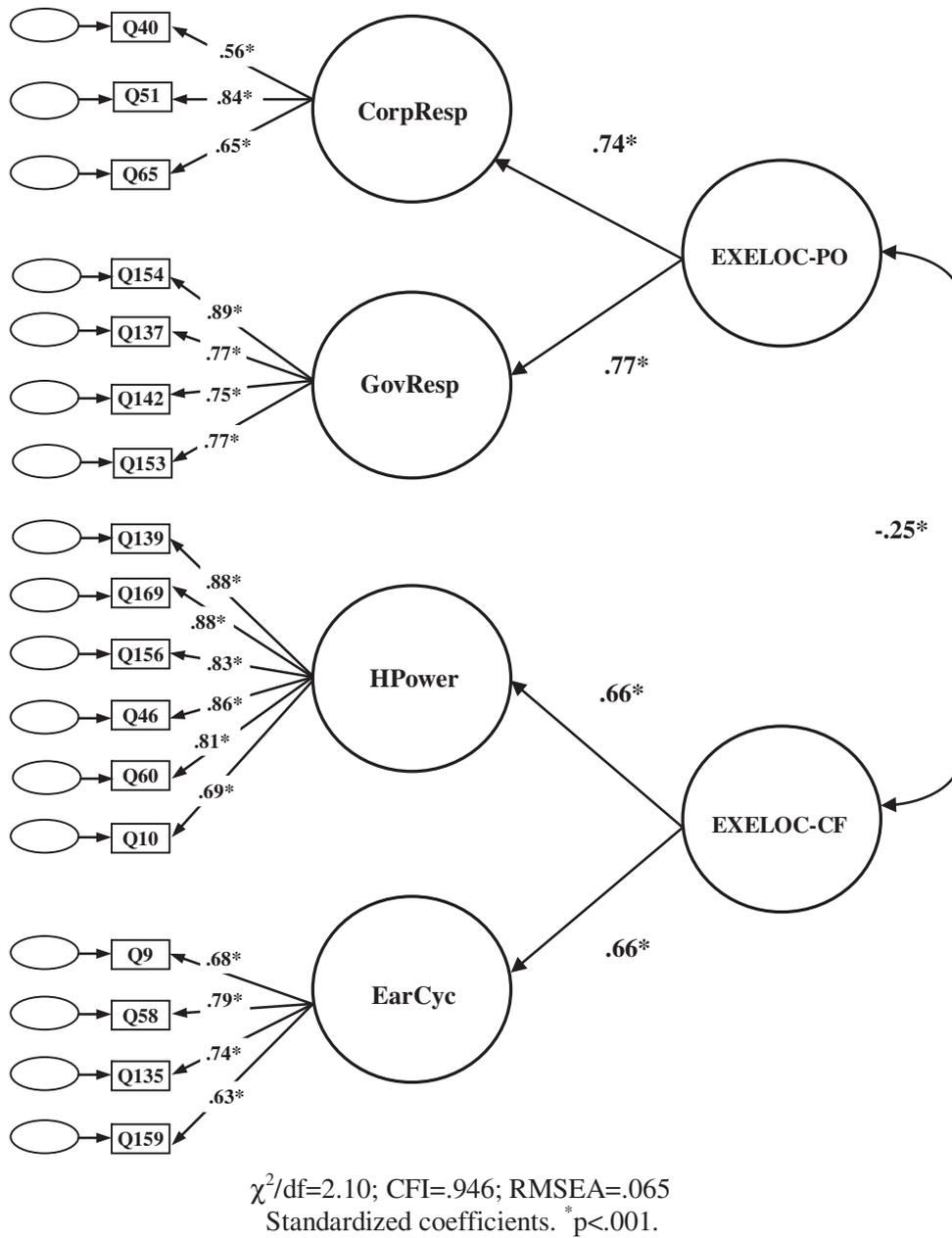


Fig. 1. External-ELOC.

Several marketing implications stem from the finding that corporate and government accountability for environmental sustainability is strong among consumers (indicated by the elevated PO levels expressed and the robust CorpResp–GovResp correlation), even if they are also willing to do their part as individuals to improve the state of the environment (indicated by the high correlation of PO to internal-ELOC). Consumers are demanding higher quality goods and increasingly insist that these products fit with their societal and environmental values. A firm’s superior reputation is a key marketplace advantage, affecting the corporation’s long-term ability to create value (Caves & Porter, 1977). Accordingly, in many product-categories, companies’ environmental credentials (i.e., reputational advantages of trustworthiness, credibility, and responsibility) can positively impact brand equity by way of: appealing to consumer segments (and thus, retailers/distributors), superior customer satisfaction/loyalty, and the potential for price premiums (Miles & Covin, 2000). However, studies show that consumers deem firms as environmentally irresponsible

and that many are wary of environmental labeling and advertising claims, which are perceived as exaggerated or phony (i.e., greenwashing). For example, in 2002 British Petroleum (BP) shed their familiar shield image in favor of a Helios symbol (green/yellow sunflower), with a new slogan: “Beyond Petroleum.” In light of perceived duplicity (greenwashing corporate image while maintaining environmentally unsound practices), Greenpeace (2008) bestowed the satirical “Emerald Paintbrush” award to BP.

Greenwashing also pertains to organic foods and fair-trade products, which cynical consumers view with distrust. The globalization of supply chains further complicates these issues (Martin & Johnson, 2010). Companies (and politicians and regulatory officials) can be held morally responsible and thus punished by consumers for environmental breaches committed by overseas suppliers, partners, or foreign affiliates (e.g., accusations against Coca-Cola’s bottlers contaminating groundwater and desiccating agricultural land in Kerala, India: Global Policy Forum, 2002).

Table 6
External-ELOC and PEBs.^a

Behaviors, fit-statistics	β_{PO}	β_{CF}
<i>How often do you make a special effort to... $\chi^2/df = 1.73$, CFI = .952, RMSEA = .053</i>		
1. Recycle paper and paper products?	.02	-.22**
2. Recycle cardboard?	.05	-.08
3. Recycle plastic bottles and containers?	.08	-.06
4. Recycle aluminum/tin cans and containers?	.12	-.18**
5. Recycle used glass bottles and containers?	-.02	-.14
6. Recycle used batteries?	.00	-.10
[...] $\chi^2/df = 1.77$, CFI = .946, RMSEA = .054		
7. Buy products that come in a refillable container?	.18**	.05
8. Sort trash for recycling purposes?	.11	-.18**
9. Use the blue/green recycling box?	-.07	-.20**
10. Buy products that are packaged in or made out of recycled materials?	.12	-.03
[...] $\chi^2/df = 1.60$, CFI = .949, RMSEA = .048		
11. Turn off all lights before leaving the house or when they are not needed?	-.02	-.08
12. Hang clothes to dry instead of using an electric dryer?	.02	.04
13. Buy products that are certified as being environmentally safe?	.15*	-.07
14. Turn down the heat a little in the winter?	.09	.05
15. Use energy-efficient light bulbs?	-.02	-.07
16. Buy food that is organically grown (without pesticides/chemicals)?	.11	-.05
17. Buy products that are biodegradable or that have biodegradable packaging?	.05	-.09
18. Buy products that are produced by environmentally-responsible companies?	.06	-.14
19. Use less air-conditioning in the summer months to save energy?	.06	.02
<i>In the last year or so, how often have you made a special effort to AVOID buying a product because... $\chi^2/df = 1.72$, CFI = .955, RMSEA = .052</i>		
20. It came in an aerosol container?	.09	-.09
21. It was tested on animals?	.02	-.23***
22. It used materials derived from threatened animal species?	-.01	-.23***
23. Because it causes damage to the environment?	.04	-.18**
24. It had environmental-harmful packaging?	-.02	-.06
25. It was treated with pesticides?	.13	-.15*
<i>Have you ever... $\chi^2/df = 1.61$, CFI = .944, RMSEA = .048</i>		
26. Donated money to charities involved in environmental causes (e.g., to protect wild animals)?	.16*	-.05
27. Purchased energy-efficient home appliances?	-.01	-.06
28. Boycotted products or companies based on their environmental record?	.21***	-.15
29. Joined a group that advocates environmental protection?	.16*	.08
30. Signed a petition about an environmental issue?	.08	-.22**
31. Taken part in a protest or demonstration about an environmental issue?	.17**	.18**
32. Volunteered your time for pro-environmental activities?	.16**	.06
33. Practiced composting at home?	.00	.05
<i>To what degree do you think the following statements represent you well? $\chi^2/df = 1.86$, CFI = .925, RMSEA = .057</i>		
34. I do not let the water faucet run unnecessarily.	.31***	-.09
35. I am careful not to waste electricity in my daily activities.	.14*	-.07
36. I use phosphate-free soaps and detergents.	.17**	.11
37. I try to save water when washing my dishes.	.18**	.10
38. I use biodegradable soaps/detergents at home.	.21**	.08
39. I reuse office paper (e.g., for notes/printing drafts).	.20**	-.02
40. I try to save water, when I take a bath/shower.	.25***	-.01
41. I use biodegradable plastic garbage bags at home.	.04	.08
42. I never use Styrofoam packaging.	.18**	-.05
43. I try to save water when I wash my hands.	.18**	.01
<i>How often do you use the following transportation modes? $\chi^2/df = 1.70$, CFI = .948, RMSEA = .052</i>		
44. Public transportation such as the bus	.13	-.09
45. Public transportation such as the metro/subway	.11	-.04
46. Public transportation such as the train	.09	.20**
47. Drive alone to work or school (reversed)	-.17**	.06

Table 6 (continued)

Behaviors, fit-statistics	β_{PO}	β_{CF}
<i>How often do you use the following transportation modes? $\chi^2/df = 1.70$, CFI = .948, RMSEA = .052</i>		
48. Ride your bicycle to work or school	.15*	.12
49. Walk to work or school	-.03	.01
50. Carpool (i.e., share a ride with others)	.04	.02

Bold data indicate significant findings.

^a Standardized-coefficients.

*** p < .01.

** p < .05.

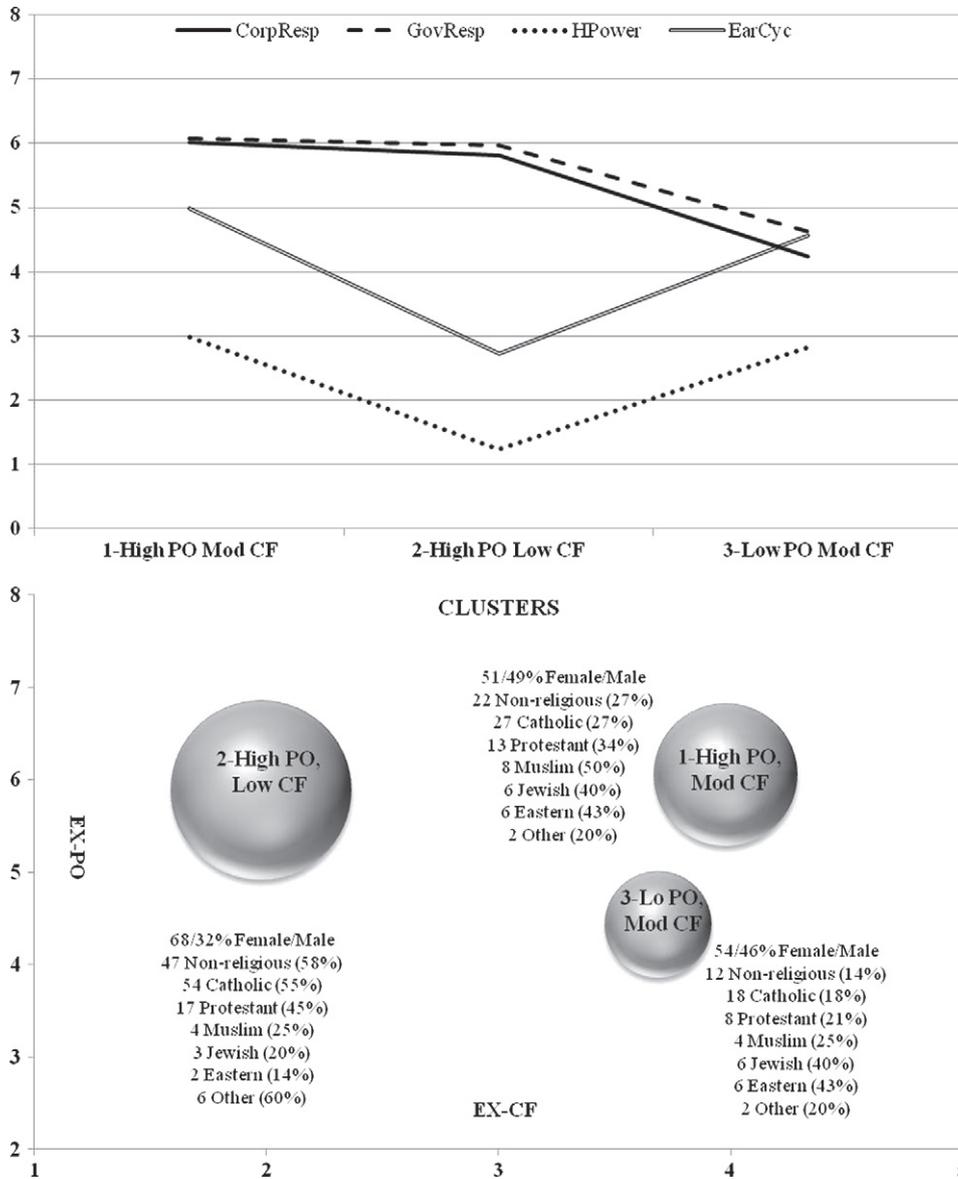
* p < .10 (2-tailed).

This clearly underscores the importance of recognizing consumers' external attributions to powerful others, from a public-relations perspective. Smith's *The Wealth of Nations* (1777/1776) popularized the notion that each person independently making decisions to maximize his/her own benefit will ultimately be the best option for society as a whole. Hardin's (1968) seminal piece attacks this logic as utterly unsustainable. Referring to environmental degradation and the motivation for freeloading, Hardin writes "...the air and waters surrounding us cannot readily be fenced, and so the tragedy of the commons as a cess-pool must be prevented by different means, by coercive laws or taxing devices that make it cheaper for the polluter to treat his pollutants than to discharge them untreated" (p. 1245).

The inverse relationship found between the external-ELOC dimensions supports applying a modified version of Levenson's IPC theory to pro-environmental research contexts. From a practical perspective, this finding (bolstered by the cluster analysis) underscores the deficiency of simply categorizing consumers as being generally internally- or externally-oriented regarding their perceived ability to effectuate environmental outcomes. Consumers scoring high on the PO dimension may manifest concerns by seeking to punish the powerful others deemed responsible for environmental degradation (e.g., boycotting a firm's products, voting against a particular politician or political party). For this reason, environmental communication appeals directed towards this group have a greater chance of effectiveness. Convincingly referencing corporate/brand efforts to minimize environmental impact/invest in sustainability empowers consumers when they choose the environmentally-friendly alternative. In contrast, such appeals directed at consumers scoring high on CF are likely pointless in effectuating behavioral change. Since "cueing of commonly performed environmental behaviors as *environmental* results in increased pro-environmental decision making," firms can influence those segments of the population who are more responsive to government/corporate environmental appeals (Cornelissen, Pandelaere, Warlop, & Dewitte, 2008, p. 54).

External-ELOC helps governments and corporations to segment and target consumers. Convincing those scoring high on the CF dimension to engage in environmentally-friendly behaviors will be difficult. However, those looking towards powerful others for green solutions are more receptive to government and corporate education/persuasion efforts. These include education programs targeting energy conservation and other related PEBs (e.g., refillable containers, environmentally-safe alternatives), general environmental literacy; as well as forms of green activism (petitions, demonstrations, boycotts, etc.). Perceptions of sustainable corporate performance (Collins, Steg, & Koning, 2007) also influence these consumers. This applies as well to government-sponsored environmental protection initiatives (e.g., legislation aimed at enhancing corporate accountability and stricter enforcement thereof).

The environment is a tough policy area for governments and businesses alike. In democratic countries, economic, political, and social efforts are advanced or thwarted by public opinion (Leiserowitz, 2005), and the priority placed upon ecological sustainability rises



^aBubble sizes proportionate to cluster membership. Male/Female % refer to cluster composition; religious number (%) refer to within-religious-group distributions. “Eastern” denotes Buddhists, Sikhs, Hindus.

Fig. 2. Clustering consumers along External-ELOC^a.

and falls according to economic conditions. Many corporations are aggressively promoting their green credentials to obtain favorable publicity; however, executives are reluctant to voluntarily undertake the costly steps of reengineering manufacturing processes if they believe that such activities will put them at a competitive disadvantage, particularly with firms operating in foreign jurisdictions where environmental sustainability is far down the list of national priorities. Populist politicians, special interest groups, and skeptics lobby hard against emissions caps and similar legislation, cogently arguing about employment losses and declines in living standards. Fortunately, even amongst traditional naysayers there is a growing realization that environmentalism is a moral issue that necessitates a “Call to Action” even if these initiatives are motivated out of self-preservation rather than altruism (Economist, 2007, p. 23).

The path towards environmental sustainability requires simultaneous and mutually-reinforcing top-down and bottom-up initiatives (Friedman, 2009) on the part of corporate and political decision

makers, respectively. If properly implemented, government policies might help to shift the hitherto private environmental behaviors of firms to the public eye, so that consumers can monitor their *actual* as opposed to their *claims* of behaviors (Olli et al., 2001). High scorers on PO likely consider politicians’ and executives’ ethical stance and track record vis-à-vis the environment; rewarding firms that engage in “enviropreneurial marketing” (Cronin, Smith, Gleim, Ramirez, & Martinez, 2011, p. 164) and punishing those that do not. In this regard, social responsibility offers a competitive advantage to firms engaging in “green innovation” (Hillestad, Xie, & Haugland, 2010, p. 440). The gas-guzzler Hummer brand proved to be a losing proposition for General Motors, whereas the halo effect provided by the Prius (Toyota’s fuel-efficient hybrid) lifted the parent brand’s entire portfolio and firmly established the company at the forefront of the green car movement. Government support for the green efforts of consumers (e.g., conservation rebates, carpooling incentives, hybrid/electric car tax credits, composting/recycling programs) and corporations

(e.g., LEED certification, emissions audits) are signals and rewards for reinforcing environmental commitment.

6. Limitations, future research, and conclusions

The methodology, sample, and subject matter invoke several research limitations. First, cross-sectional analysis precludes definitive cause-and-effect relationships. The youthful/educated sample implies that the pro-environmental attitudes and behaviors expressed are higher than the general population (Schuldt et al., 2011). Moreover, there is the possibility of a social desirability bias (Vinnings & Ebroe, 2002), such that deviant PEBs may be understated and benign ones overstated. Future studies could employ direct (vs. self-report) measures of PEBs, although this approach also has confounds. For example, consumers may choose organic products for reasons other than being pro-environmental per se, such as healthy eating, supporting local farms, etc. (McDonald et al., 2006). Researchers should also measure attitude certainty. Stronger attitudes are more prognostic across situations and also, more resistant to change. This latter point is particularly relevant in the wake of recent reports alleging the doctoring of some climate change data (Economist, 2009). Future research should also apply the construct measures to business and governmental decision makers (as powerful others, they are better placed to effectuate change). Another direction would be to delineate environmentally-conscious consumers with respect to their motivations to maintain vs. lower current consumption (Shaw & Newholm, 2002). Because those desiring to maintain consumption are apt to favor technological solutions, they look to powerful others for ways to reduce the impact of their personal activities (e.g., energy-saving innovations). Those seeking to lower consumption are apt to simplify their lives (e.g., foregoing unnecessary consumption, purchasing second-hand items, growing food).

Respondents possibly downplayed their HPower beliefs. Even among those professing to be pious, differences in their attribution of control to a divine power (vs. chance/fate) could depend on their religion/denomination. Leiserowitz (2005) uncovered groups of individuals sharing environmental opinions, cultural worldviews, and socio-demographic characteristics. These included the climate change-naysayers (predominantly Caucasian males, individualistic, and highly religious) who viewed climate change as normal (natural phenomenon), hype (overblown) or non-existent, and/or supported by dubious science. The role of spirituality warrants further study, for example, public vs. private domains of religiosity on environmental attitudes/behaviors. Cross-cultural differences in external-ELOC also merit attention. Values brought by immigrants are partly rooted in religious beliefs and experiences (Cleveland & Chang, 2009). Culture affects perceptions and priorities, while reinforcing behavioral expectations through social norms. Some researchers conjecture PEBs to be higher for individualists vs. collectivists (especially, when considering the perspective invoked by perceived behavioral control); others surmise the opposite (Chan & Lau, 2000; Collins et al., 2007; Sarigöllü, 2009). Europe is generally individualistic and its citizens pro-environmentally-oriented, whereas China is collectivistic and considerably less so—this may change as the ecological effects of China's economic expansion accumulate, and moreover, if economic liberalism is eventually accompanied by future-oriented social liberalism. Regardless of the nation state, sustainability entails a long-term perspective. Temporal orientation shapes environmental attitudes generally and locus issues specifically, such as the degree to which individuals believe their current behavioral consequences extend into the future, and their expectations regarding power, wealth, and influence (Urien & Kilbourne, 2011). As firms increasingly compete in global markets, the main challenge in designing an effective marketing mix is widespread cultural variability and the concomitant heterogeneity in consumer wants.

“Green marketing ...will ultimately determine the relationship between society and nature, and it will be reflective, not of what we want, but of who we are” (Kilbourne, 1998, p. 651). If green marketing is to make sense of green consumerism, the interchange between personal, societal, corporate, governmental, as well as non-anthropogenic ecological attributions requires further investigation. Economic globalization is accompanied by the globalization of the problems facing humanity. If all people share the Earth's bounties, then why are not all individuals held accountable for PEBs? To this end, it is vitally important to persuade those consumers and powerful others currently viewing the state of the environment as fate to instead see it as karma.

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