



ARTICLE

How much is too much? A public opinion research perspective

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Climate-change research suggests that civilization and its ecological underpinnings may face catastrophe without profound changes in our collective cultural behavior. Yet, meaningful policy responses seem largely insufficient. This article describes a body of original research from the state of Oregon in the United States aimed at uncovering alternative pathways around the current stalemate. Drawing from sixteen studies conducted from 2008 to 2012, I find evidence of strong grassroots attitudinal support for reducing consumption, with agreement in the 70–88% range. Broad cultural agreement about excess consumption bridges ideological divisions regarding climate change. Seeing climate change as a symptom of the underlying problem—consumption—may reveal new solutions. The studies find deconsumption policy support to be marginal and at odds with policy-leadership views favoring economic growth. However, this work observes evidence of grassroots, consume-less attitudes and behavior despite ongoing policy to stimulate growth. The article discusses motivations, barriers, dissonance, and behavior about lowering consumption.

KEYWORDS: climatic change, attitude measures, social behavior, surveys, resource consumption

Introduction

Public sentiment is everything. With public sentiment nothing can fail. Without it nothing can succeed.

—Abraham Lincoln, in debate with Steven Douglas, 1858

Accumulating evidence suggests that the ecological underpinnings of civilization may face irrevocable catastrophe unless we change our present carbon-emitting behavior (Pachauri & Reisinger, 2007; Methmann, 2011; Huntington et al. 2012). Many people consider climate change to be the overarching indicator for human sustainability. Despite some 97% of qualified climate scientists believing human activities are responsible for global warming (Anderegg et al. 2010), constructive responses from policy makers seem largely absent.

To address this “science-policy gap,” this article reports on original public opinion research mostly conducted in the state of Oregon in the United States. Using a methodology that we at PolicyInteractive, and our associates, have applied to other culturally divisive issues, the project was designed to explore attitudes and values that transcend the deep social divisions around climate change. Rather than focus on cultural sector differences toward global warming often observed in public opinion research, our approach has been to discover shared values supportive of constructive change. The purpose of the underly-

ing research is to inform Oregon policy makers about alternatives to the climate change-policy stalemate.

As the inquiry began in 2008, an early finding of some surprise from a statistically representative sampling of Oregonians was 88% agreement that “our country would be better off if we all consumed less.” Such high agreement naturally implies considerable shared values, compared to climate change concern, making it worthwhile to examine the particular finding in greater detail.

Why Consumption Matters

Within the last decade, two competing solutions to the complex problems of human environmental impact, notably global warming, have emerged (Princen, 2001; Bluhdorn & Walsh, 2007; Knight & Rosa, 2009; Rees, 2009). The first and dominant version proposes an efficient and “green” technology overlay on the contemporary economic model of mass consumption and infinite economic growth. This version offers that we “grow” our way out of recession by dramatically redirecting growth and change toward “green” economic investments. Organizations and officials that promote ecological “sustainability” endorse this model because of a deeply embedded worldview that “growth is good” and that the modern economic model can effectively address environmental harm through technological change and cosmetic behavioral change. An early expectation of this approach was that science, technology, renewable energy, and regulations folded together would yield a wholesale decoupling of car-

bon emissions from consumption-based products and behaviors. However, these strategies are not spurring change at the pace climate science suggests is necessary and evidence is mounting that they may be counterproductive. Using metadata, Dietz et al. (2012) extend their prior critique of the environmental modification of Simon Kuznets' theory that higher affluence eventually yields lower ecological impact (York et al. 2003; 2007). Their 2012 examination of evidence from 58 nations finds a decrease in overall environmental well-being as affluence and consumption is increased. Another view comes from Ted Trainer (2010) who uses thermodynamic analysis to show that the potential of renewable energy to supplant carbon-based energy is economically unfeasible without a decrease in ecological impact.

Maria Csutora (2012) contributes to Dietz et al.'s (2012) macro-level analysis with micro-level data from survey research in Hungary. She finds pro-environmental (green) attitude-driven behaviors lead to little reduction (and sometimes a worsening) of per capita ecological footprints (EF). Aptly naming the behavior-impact gap to be "The BIG Problem," Csutora then asks "if a workable conception of 'effective environmental behavior' exists at all. If not, we may be focusing on marginal action, while missing the real targets." Both Dietz et al. (2012) and Csutora (2012) provide evidence that higher incomes produce higher ecological impact regardless of environmental consciousness or attitudinal intent. As seems intuitive, money earned is typically money spent (even if invested), causing downstream carbon emissions or other impacts along the way. This research suggests that decoupling affluent spending from environmental impact is not likely, contrary to conventional pro-environmental neoliberal economic policy.

Alongside the green growth model, a second solution to ecological sustainability has emerged in recent years. This version proposes that changes in our way of life—our material expectations—are necessary and posits that the present material standard of living in the United States is simply unsustainable, even when accounting for projected improved efficiency or green consumption practices (Herring, 2006; Alcott, 2008; Jackson, 2009; Rees, 2009; Heuting, 2010; Owen, 2012). However, reducing consumption presents a problem for policy-driven, top-down solutions. Others have observed—as our own research will show—that the political and economic leadership that accepts the urgency of climate change embraces the "green growth" approach and rejects the "consume-less" approach for a variety of

social and political reasons (Markowitz & Bowerman, 2011). By contrast, our work finds that the general public is favorably disposed to lowering consumption. Using a series of surveys employing multiple methods (described below), we find support for reduced consumption rates consistently ranging between 70–88% in representative sampling of the Oregon and American public. To the extent that lowering consumption is deemed necessary to avoid climate catastrophe, a nuanced understanding of the general public disposition to attenuate consumption may be critically relevant. This article describes a research method and findings that contribute to the understudied aspect of consumption related to climate-change attitudes and behavior.

Methodology in Brief

The project methods include a variety of evidence-gathering techniques, including statistical sample surveying, qualitative interview surveys, focus groups, and experimental quantitative surveys. Multiple inquiry methodology helps compensate for inherent weakness in any single method and offsets certain method biases (Greene, 2007). Quantitative surveying permits statistical representations of a large population, while qualitative interviews and focus groups permit respondents to provide personalized nuanced insights not possible in large numerical sample surveying. Beginning in 2008, surveying to date covers sixteen original studies (summarized in Appendix 1). Several studies are joint collaborations with other researchers pursuing different objectives while sharing data gathering.

Most of these surveys traverse four information domains: 1) worldviews and values, 2) climate-change issues, 3) social issues of current topical interest, and 4) demographic profiles. These domains are intended to allow correlation analysis between values, motivations, behaviors, personal life circumstances, and prevailing social concerns. Multiple facets within each individual survey help preclude single-issue priming and put our climate focus within the milieu of daily cultural issues. Consequently, climate issues are frequently a minor part of the instruments. Surveys are peer reviewed by outside experts, pretested for comprehension and bias, and vetted for representativeness and standard-error problems. Statistical samples are conventional random dial telephone interviews conducted by professional contractors, fielded to not less than 400 respondents with an error margin below 5% at a 95% confidence level.

Table 1 Three results from nine statistical sample surveys (Result shown in % of respondents).

Statement Text (Rotates to eliminate order influence)	Strongly Disagree	Somewhat Disagree	In-between	Somewhat Agree	Strongly Agree
<i>PolicyInteractive, November 2008 / Telephone-random sample all-Oregon (N = 400, MOE = 4.9%)</i>					
Our country would be better off if we all consumed less.	6%	7%	12%	26%	48%
We need to buy goods for the good of the economy.	15%	21%	17%	29%	16%
<i>PolicyInteractive, December 2010 / Telephone-random sample all-Oregon (N = 400, MOE = 4.9%)</i>					
Our country would be better off if we all consumed less.	8%	16%	N/A	24%	46%
We need to buy things to support a strong economy.	12%	22%	N/A	39%	19%
					Total Agreement
<i>DHM Research and PolicyInteractive, November 2011 / Telephone-random sample Eugene (Oregon) (N = 300, MOE = 5.7%)</i>					
We'll be better off by consuming less and living more simply.					65%
We need to get the economy growing by consuming more goods and services.					27%
Both / Neither / Can't Decide / Don't Know					8%

NOTE: Percentages do not total 100% because "don't know" or "other" responses have been removed for table simplification.

Because our research is designed to inform Oregon policy makers, the surveying is mostly based within the state. Our studies include, however, evidence from larger regional and national investigations. We employ a relatively larger number of statistical surveys with fewer respondents rather than the commonly practiced few specialized surveys with many respondents. This procedure allows greater triangulation and extensions of research in a truly exploratory and test-retest manner. Survey records are maintained and available to qualified reviewers.¹

Research Findings

Our first Oregon-wide statistical sample survey (Study 1) in 2008 included a range of statements intended to explore a theoretical conception of human values. One value statement stood out: "Our country would be better off if we all consumed less" and yielded an unexpectedly high 88% overall agreement with 47% strongly agreeing. The question itself was ad-hoc design but drawn from a body of consumption and materialism research including Inglehart (1990), Richins & Dawson (1992), Schor (1999), and Richins (2004). The question was intended to measure a value for frugality and thrift in a social context. The unexpectedly high response raised concern over survey error, causing both literature search and triangulation with further surveying. A literature search found similar evidence of negative views of consumption levels within public opinion surveys (Harwood Group, 1994; Schor, 1999; Stafford et al. 2001; CNAD, 2004; CAP, 2008). However, each of these

examples appears as a one-off survey without in-depth examination or extension. With affluent consumption significantly affecting ecological stability (Dietz et al. 2007), the high consume-less agreement motivated a line of inquiry toward consumption in greater detail than seen elsewhere. Across numerous studies, we have validated this early finding through replication and triangulation as well as qualitative interviewing, focus groups, and experimental analyses.

To control for acquiescence and desirability responding bias, we initiated counterpoint paired items with rotating order to eliminate order influence. Using language for each pair judged equivalent in tone, directionality, and level of efficacy, we tested competing personal and cultural socio-economic world views as well as other cultural concerns and behavior choices for correlation purposes. Three examples in Table 1 from nine statistical sample surveys are typical.

The high level of cultural support for consuming less differed substantially from global warming ideological polarization observed within our own survey results and that of others. Cultural sectors disinclined toward climate change-concern (political and religious conservatives) showed high consume-less agreement. Republicans shifted from 34% climate concern to 76% consumption concern while Christian conservatives shifted 45% to 67% respectively (PolicyInteractive, N = 400, November 2008). Sectors previously concerned with climate change (Democrats and environmentalists) showed modestly higher concern about consumption than climate. This finding indicates that unease about consumption levels is a culturally shared perception, unlike that of global warming.

¹ Expanded descriptions of methodologies are available at <http://www.policyinteractive.org>.

It would be a mistake to regard Oregon as unique thereby discounting broader geographic implications of these findings. In 2009, the Yale Cultural Cognition Project (YCCP) included our consume-less question in a national survey (N = 1500), finding a similar 79% total response agreement.² As with our own results, Republican and conservative agreement was strong (above 70%), as was Democratic and liberal (above 80%). A Center for American Progress (CAP) (2009) national survey (N = 1400) called “The Forty Ideas Which Frame American Politics” (N = 1400) found that the highest level of agreement from 40 propositional statements was “Americans should adopt a more sustainable lifestyle by conserving energy and consuming fewer goods” (80% agreement, 47% strongly agree).³ Similarly to our results, this CAP item also showed the strongest agreement across traditional ideological divisions of the 40 items tested.

Qualitative Inquiry: What Does “Consume Less” Really Mean?

Policy-maker recipients of our findings offered tempered responses, concerned that we might not be capturing respondents’ crystallized meaning of “consumption” or a personalized conception of what actually implemented notions of consume less might mean to self or society. To address this criticism, in late 2008 we implemented two discrete in-depth, one-on-one qualitative interviews. The purpose was to listen to respondents describe consumption details in their own words, responding to open-ended questions.

Two cultural sectors of meaningful interest were interviewed: 1) self-identified conservatives and 2) policy leaders (Studies 2 and 3 respectively). Both sets of interviews used a semi-structured instrument designed to last 30 minutes. Each interview moved through inquiries of: “What does ‘consume less’ mean to you?” “How would our country be better off if we all consumed less?” “Should you consume less, too,” and if so, “how much less?”; “What kinds of actions have you taken to consume less?”; and “If we all consumed less, how would this affect the economy?”⁴

² See <http://www.culturalcognition.net>.

³ The “double-barrel” question framing leaves open whether respondents may be more agreeable to “conserving energy” or “consuming fewer goods.” However, the third highest level of agreement in the CAP survey (76% agreement or 4% lower) is a question specific to fuel and energy efficiency, suggesting that consuming fewer goods was an equal or stronger issue to conserving energy (CAP, 2009).

⁴ Report available at <http://www.policyinteractive.org>. See in particular qualitative interviews 3a and 3b. The raw interview or summarized data are available to qualified researchers upon request.

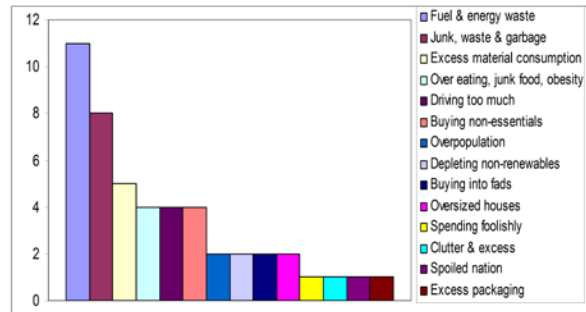


Figure 1 “What does consume less mean to you?” (Key indicates simplified categories of open-end responses, scale indicates number of responses)

The views of politically conservative respondents are worthy, in part because of a stereotypical perception that they are unfavorable to climate or ecological protection actions. This interviewee group (N = 35) was procured from a previous quantitative Oregon phone-based sample (April 2008, N = 402) in which we had obtained over 80% of respondent permissions to call back. The original survey was screen-sorted to aggregate those who had disagreed that climate change was a concern and viewed environmentalists as “extremists,” but still responded that our country would be better off if we all consumed less, yielding 80 potential respondents.

Nine months after the original quantitative survey, the qualitative interview began, with two neutral non-priming “direction of the State” (Oregon) questions as a warm up. The interview immediately went to the benchmark-question item, “Our country would be better off if we all consumed less.” All of these interviewees agreed with the statement with little opportunity for priming. We then asked an open-ended question: “What does ‘consume less’ mean to you?” The responses were nearly all pejorative and clearly indicative of affluent consumption-referencing issues such as (in declining frequency of mentions) fuel and energy; junk, waste, and garbage; and, overeating, junk food, and obesity (Figure 1).

We next asked respondents, “How do you see our country being a better place if we all consumed less?” Responses included: more time with family and friends (9 mentions); less impact on environment (4 mentions); and fairer distribution of resources (3 mentions). These responses suggest that conservatives are inclined to an environmentally friendly purpose largely for nonenvironmental reasons.

These conservative respondents perceived no undesirable economic outcome to the economy by reduced consumption by a ratio of 26 respondents to nine. Asked to explain, a middle-aged man replied, “Yes, it will hurt the economy, but it’s something we must go through to get to a better place.” A 28-year-

old woman said, “I think it will balance out in the end.” A 62-year-old man said, “We’ll adjust, live differently.” The interviews validated that this non-environmental group observed conventional meanings of consumption negatively. Although not numerically statistically valid, this group was drawn from a majority conservative sector within a statistical sample survey. They generally described in their own words that a culture of less consumption would be a better place to live.

A similar semi-structured interview process was then instituted with policy leaders (N = 34). These policy elites were selected largely from our immediate community of Eugene, the second largest city in Oregon. The selection process aimed for prominent individuals who speak to at least 300 people per year about policy issues delivered from pulpits, podiums, lecture halls, print or broadcast media, books, articles, reports, and commissions. They were targeted to draw evenly from the sectors of 1) business, 2) education, 3) religion, and 4) politics as well as divided equally between right and left political ideology. Respondents included church pastors, business leaders, high-level politicians, and university leaders. These respondents showed high, but not unanimous, agreement for the benchmark consume-less item. By comparison to our earlier general population conservatives, these respondents were largely conflicted regarding the economic implications, preferring a policy solution along the lines of economic stimulation to “grow our way out of this mess” (Anonymous respondent). This policy-immersed group was much more aligned with either the “green growth” solution to climate impact or otherwise ambivalent to governmental policy altogether.

One potential implication of the comparison of the conservative and policy elite interview groups is a distinctive difference in views toward cultural benefits or liabilities of lowering consumption. We find that in the general population self-identified political conservatives express affirmation toward lowering consumption consistent with progressive-liberal views found in qualitative surveys but in contradiction with views expressed by policy elites.

Return to Statistical Sampling

Because two interviews of 32+ respondents each are not statistically representative, we triangulated these findings with a new statistical survey (N = 406, April 2009). This sixth study in the research series (see Appendix 1) included the questions “How much should our country consume less?” and “Do you think you also should consume less to make our country a better place?” and, if so, “how much...less?” The “How much should our country consume less?” yielded a mean collective response of

25% less consumption. The notion of consuming less personally yielded a collective mean of 12% less consumption. This notably lower self-responsibility for overconsumption than held toward others will be addressed in the discussion section. This sixth study introduced improved subjective (intentions) and objective (behavior) measurements. Subjective questions included behavior intentions while objective questions aimed at specific behaviors, including house size and domestic energy utilization, vehicle miles driven and miles per gallon, car-pooling, nonmotorized transportation use, and air miles flown. These specific objective-behavior questions were developed out of a side journey into testing a dozen emission or ecological footprint algorithms developed by government and nonprofit entities.⁵

This April 2009 probability sample also included a test of public support for carbon-reduction policies covering a range of fees and regulations. Support for policy measures must be characterized as meager to modest. Of thirteen proposals, only three passed a benchmark 60% deemed adequate for policy-maker interest. These were an inverted utility-rate structure (78%);⁶ higher home-efficiency standards (75%); and a luxury tax on planes, boats, and motorhomes (61%).⁷ A sales-tax proposal (Oregon presently has no such tax) flunked badly with only 30% support. These results indicate some support for efficiency standards but resistance to items with direct personal cost perceptions.

Focus Groups

Focus groups add a different dimension to opinion gathering using discourse in a social environment. Collaboration with three for-profit research consultants to an Oregon municipality wanting better “sustainability messaging” included two focus-group sessions (Study 14).⁸ The research directly pursued the interface of climate change and consumption. Twenty-four participants were identified through

⁵ Testing different institutional methods yielded highly variable findings. We settled on a set of behaviors developed by the states of California and Oregon, in part because they are consumption rather than production based—meaning that the consumer of goods produced offshore, rather than the producer country, is credited with impacts. The questions we used put daily behaviors into a temporally specific frame, such as “over the past year” or “last month,” depending on the context which most people are more likely to access specific recall and least likely to exhibit “social desirability” response bias.

⁶ An inverted utility-rate structure is predicated on a pricing policy whereby the more energy one uses, the higher the unit cost (as compared to long-standing policies that discount unit cost for high-use customers).

⁷ This table may be accessed at <http://www.policyinteractive.org> and PI survey number 5, item E1-13, or by request from the author.

⁸ These focus groups were conducted by Bell+Funk Research. Participants were paid and informed that they were being observed from a remote location.

random-digit telephone dialing to recruit for medium- to high-level disposable income adults (e.g., affluent consumption behaviors). The two groups were distinguished by response-preference difference to two statements: “Economic growth should be given a priority, even if the environment suffers to some extent” (the “pro-growth” group) and “Protecting the environment should be given priority, even at the risk of slowing economic growth” (the “pro-environment” group).⁹ The grouping was intended to foster comfort among people with shared attitudes about protecting the environment or growth for conversational purposes among strangers. Each group discussion was professionally facilitated in a room designed for the purpose for two hours on the same evening following a loose script. Active table discussion probed consumption attitudes and behaviors as well as barriers and motivations toward more thoughtful consumption.

Both groups voluntarily described our society’s consumption levels negatively (consistent with prior statistical sampling) but often showed discrete differences in reported consumption perceptions and behaviors. The pro-growth group expressed economic priorities about employment, paying bills, reducing debt, keeping money in the local area, and supporting families. Women participants were the most disapproving of contemporary consumption levels, with more expression of earth-friendly terminology, especially in terms of “waste” in visual and visceral terms. As one female respondent said, “I see my neighbor’s oversized garbage container overflowing with trash spilling onto the ground all the time.” Both men and women were unanimous about benefits of supporting local production as well as descriptions of waste as “cheap foreign junk.” Men often mentioned local buying, including “quality” and “keeping our money in the community” references. One woman volunteered an intergenerational equity perspective toward overconsumption: “It uses up the planet, not anything left for future generations.”

The pro-environment group also frequently mentioned the topics covered by the pro-growth group: waste they could see, local economic exchange, and reducing consumption to avoid debt. However, this group also frequently mentioned a lifestyle choice of less consumption and discussed how consumption diminishes a preferred vision of simplicity. Comments often described low consumption as a primary objective or “way of life” and “normal behavior.” Benefits perceived included increased self-reliance, such as skills of growing food,

repairing things, and doing with fewer possessions. “Living holistically” was frequently mentioned in the context of how personal actions have complex or extended consequences. Typical comments included “health benefits,” “being part of the solution, not part of the problem,” “contributing to society,” and “vote with my pocketbook.” Other comments included direct behaviors like “drive less, bike more,” “efficient appliances,” “second-hand purchasing,” “turn down thermostats,” “improve building efficiency,” and “energy audits.” One 40 year-old male (architect) described an earlier life aspiration for prestige and income but explained how stress and unhappiness produced a midcourse correction to downscale, describing himself as “poor and loving it.” Questions about whether reduced consumption would hurt the economy elicited comments along the lines of “we’ll get through it,” “consumption isn’t sustainable at current levels,” and “we’ll turn attention to a local exchange economy.” Considering that this group was from a 2:1 *environmental leaning* majority (see Table 3) selected through population-wide statistically representative recruiting, we could consider such views to be culturally mainstream. They are also very similar to the responses obtained from the conservative respondents in the 2009–2010 interviews, suggesting again that a consume-less majority attitude bridges political ideology. In debriefing the results, the research-team members noted that the two focus groups never mentioned climate change as a primary or key rationale for reducing consumption.

The Attitude-Behavior (A-B) Gap Interviews

We are aware that observed attitudes are not necessarily reflected in behavior. Considerable literature (Fazio & Zanna, 1981; Ouellette & Wood, 1998; Stern, 2000; Kollmus & Agyeman, 2002) and commentary to our earlier findings (Arbuthnott, 2011; Brown, 2012; Clayton, 2012) show this to be a large, complex, and unsettled matter (Bowerman & Markowitz, 2012). To explore the A-B gap firsthand, we designed and conducted a third round of qualitative interviews (Study 16), this time to focus on self-reported attitudes and actions (consumer, political, or otherwise).

Three researchers interviewed 47 respondents mostly selected for pro-environmental leadership positions: policy practitioners, organization directors, educators, or governmental representatives engaged in environmental sustainability. Three of the informants were eliminated due to incomplete responses. Thirty invitees were individuals who we theorized would reveal the A-B gap: environmental leaders who exhibit high-emission lifestyles through observed estimation by the research team (or colleague

⁹ This forced question was also employed in a statistical sample of 300 respondents in a prior random sample for this municipal study. The results are reported in Table 3.

referral).¹⁰ Fifteen interviewees were also targeted (by similar observation) to live a low emission and impact lifestyle. These two differential categories of respondents were sought to reveal motivational and behavioral distinctions between low- and high-environmental impact behaviors. Although both low- and high-emission respondents were selected through observed estimation, verification was obtained by asking objective proxies of emissions questions, preferably completed ahead of the scheduled interview.¹¹

These objective measures of emissions were used to approximate interviewees within low, middle, and upper tercile (third) emission categories using United States institutional data sources described above for the sixth study and in Footnote 7. The “tercile” discrimination is a rough and simplified demarcation due to lack of crisp demographic-to-behavior data. For example, converting driving and flying behaviors to the aggregated carbon-emission tercile was approximated, beginning with the mean emission per capita at twenty metric tons per year, and drawing the dividing lines at below 10, 10–30, and above 30 as indications of low, middle, and high terciles.

While these lines are clearly subject to refinement, it is important to recognize that data from institutional sources is highly variable and that exactly where these lines are drawn should not make a large difference for the purposes of this study. This is because the spread between the selected low and high terciles is sufficiently discriminating of ecological impact that imputation from respondent interviews about behavior choices should be relevant and meaningful.

A semi-structured peer-reviewed interview instrument was again employed with interviews recorded for future access and summation. Designed to last one hour, the interviews began with very general questions on attitudes and values. These queries evoked, as predicted, high environmental concern. Respondents typically described climate change as the biggest problem civilization has ever faced. They were then asked to self-estimate their own carbon emissions compared to others, where they placed themselves in the lower, middle, or upper tercile on a per capita basis. From the interview-design objective

for fifteen low- and 30 high-tercile carbon emitters, the objective behavior results indicated twelve low and 26 high respondents.¹² The purpose of this interview component was to compare self-reported emission estimates to an objective measure of behavior asked beforehand. Having computed each respondent’s impact using objective standards, we were instantly able to compare their self-estimated tercile position at that point in the interview. This comparison revealed considerable error from high-emission respondents.

Eleven of the twelve respondents in the lowest tercile correctly estimated their position in the low third, or 92% accuracy; only four of the 26 high-emission informants correctly assessed themselves, for 15% accuracy. The interview design anticipated the possibility of this self-misrepresentation with the interviewer gently noting the discrepancy of self-estimation compared alongside the previously reported emission-producing behaviors. The interviewer then asked the respondents why they might believe they are having less impact than their self-reported objective behavior suggests. Answers frequently elicited surprise, expressions of guilt, various rationales, and topics of personal responsibility and/or needed policies.

At this stage of the interview, insights were solicited about respondents’ affective state: their awareness of attitude-behavior conflict, the tension (if any) generated by this conflict, how they felt and/or were inclined to resolve it, and the implications if everyone behaved similarly. As theorized, respondents described anxiety and dissonance between personal ideals and real behavior. With the low-emission subgroup, the same questions were covered when relevant, with additional questions about what led them to a low-impact lifestyle, whether they felt they were making a sacrifice, and the social and economic ramifications of their choices. Here we were not as interested in whether the A-B split existed as we were in what thoughtful and committed respondents could tell us about how it feels and what implications for individual or cultural change might be deduced.

A prediction that high emitters would exhibit more anxiety from an attitude-behavior divide was not necessarily born out. Low emitters were seemingly as concerned about their behavior as their high-emitting counterparts. Purposeful intentions to live ecologically responsible lives drove personal perception that they still lived above a truly sustainable

¹⁰ By “estimated observation” I mean that a prospective respondent may be an executive of an environmental organization who is generally observed or known to drive a vehicle well above the cultural norm and/or use air travel extensively, whether or not for employment-related purposes.

¹¹ Items included square footage of personal residence, number of occupants, estimated number of miles driven per week across an annual basis, and average number of passengers in vehicle travel and air miles traveled over the past year (factored for radiative forcing). Food choices are recognized as a valid issue but were omitted due to the present lack of standardized methodologies.

¹² Figures here do not match total respondents because objective comparisons with base data found some respondents in the middle tercile and our focus was on the low- and high-tercile respondents. Such individuals nonetheless completed the entire interview process.

level. Conversely, the high emitters sometimes mitigated potential anxiety through developed narratives explaining that their behavior was doing more good than harm and hence excused it—a lesser of two evils justification—along with many other rationales.

Discussion of Implications and Research Directions

Various contrary positions from the literature and critics argue against the attitudinal consume-less findings reported here translating to sustained consume-less behavior. These might be characterized by such generalizations as:

- We are biologically hardwired to be consumers, as are all living things. Attitudes are weak motivators compared to biological drives (Rees, 2009).
- The economic downturn currently provides economic reasons to consume less. This will evaporate when the economy returns to normal growth (Brooks, 2008).
- If diminished affluence becomes deep and lasting, there will be a return to Maslovian drives of survival and outer-directedness; hedonistic acquisitiveness will replace inner-directed post-materialism offsetting pro-environmental behavior (Maslow, 1943; Inglehart, 1990).
- Entrenched social norms, habituated behaviors, and social/psychological needs (such as identity and status) stymie and constrain attitudes favoring a lower material standard of living (Rees, 2009; Arbuthnott, 2011; Clayton, 2012).
- Powerful institutional actors (e.g., marketers and the governmental-industrial complex) will apply effective tools at their disposal to preserve and expand consumption behaviors (Hoyer & MacInnis, 2008).
- Some of us possess the existential relativistic view that everything is ephemeral; we are here for a geologic second of time; what difference does it really make? So, we should live for today, be here now, and enjoy the present (Kahan, 2008; and author's informal interviewing).

The above-mentioned rationales certainly do not constitute a comprehensive list. As a young adult during the 1970s, I also was aware of a social popularization of consuming less reflected in, for example, Garrett Hardin's (1968) essay on the Tragedy of the Commons and books such as Schumacher (1973) *Small is Beautiful* and Elgin's (1981) *Voluntary Simplicity* (see also Gregg, 1936). Notions of consume-less lost mainstream popularity during the Reagan-

Clinton-Bush eras of neoconservatism and neoliberalism. Moreover, the United States has earlier witnessed ebbs and flows of frugality philosophies and mores advanced by cultural icons such as Franklin, Emerson, Thoreau, and Veblen.

My research colleagues and I also acknowledge that various forms of survey-response bias are possible in attitudinal survey methodology, notwithstanding employment of best practices to avoid such complications. One commentator to our findings proposed that deconsumption has become a socially desirable position (Arbuthnott, 2011) resulting in response-error bias systematically seen in social desirability topics such as voting, volunteerism, or visiting with a neighbor (cf., Pew Research Center, 2012).

These reservations indeed seem formidable barriers to lowering consumption behaviors. But there is empirical evidence to counter these critical views. A review of consumption statistics over the past several decades reveals a long period of increasing consumption until 2000, followed by a 50% reduction in the trend line until 2005, then flatlining for two years, followed by a decline in consumption beginning around 2007—two years before the economic recession was officially backdated to have begun. Reputable government statistics, such as freight imports at all ports of entry to the United States, new vehicle purchases, vehicle miles traveled, and other key metrics describe this moderation and decline (Puentes, 2008; ITF, 2011; USDOT, 2011a; 2011b). A periodic multi-decade survey conducted by Pew Research found that between 2006 and 2009 hard consumables, such as clothes dryers, televisions, microwaves, hair dryers, and air conditioners, were redefined by consumers from “necessities” to the category of “luxury” in the double digits, following previously unbroken growth as necessities since the beginning of the survey in the 1970s (Morin & Taylor, 2009). The survey shows automobile necessity also declined, but more modestly.

The automotive consumer consultancy J.D. Powers Research (2009) reports that younger adults are abandoning the automobile in favor of perceived freedom of living without the attendant burden and costs, to the great concern of the industry, which has cultivated a youth love of vehicular mobility and status (Zimmerman, 2009; Cohen, 2012). The use of refined gasoline by January 2012 had dropped 10% below the 2009 recessionary economic low mark (USEIA, 2012). *The Economist* (2012a), a magazine with enthusiastic tendencies toward consumption, recently devoted a three-page commentary about the declining popularity and use of the car.

A UK research report found similar results looking at a different, broader set of consumables in

that country. Goodall (2011) specifically aims to present the evidence without speculating why it is occurring, but nonetheless offers prospective reasons outside of “intentional” deconsumption, including the proposition that “economic growth is not necessarily incompatible with sustainability.” That supposition presumably occurred before Britain began posting negative growth, currently inflation adjusted minus 3% (Economist 2012b). If this evidence of declining materialistic behavior is stable, then the A-B gap is at least partly rebutted. We may be witnessing bona fide degrowth with commensurate declines in emissions, in spite of aggressive monetary policies to kick consumption growth back up (cf., Cohen et al. 2005). The passage of time will help reveal answers but the preponderance of mainline economic commentary places social salvation on a foundation of economic growth (Krugman, 2013; Reich, 2013; Stiglitz, 2013). Yet these commentaries do not functionally address the nexus of economic activity and ecological sustainability.

The Speed of Change

The fairly modest declines mentioned above do not begin to meet the emission-reduction targets likely to put an American culture on a truly sustainable track. Goodall (2011) further observes that “[m]uch faster declines may well be required” to achieve equitable distribution of finite resources, not specifically mentioning sustainability. While climate scientists propose urgency in carbon reduction, social shock from rapid change without obtaining broad social commitment risks backlash. The current controversy over “austerity” in several European countries is one example.

Our survey finding of the answer to “how much less should we consume” as a 25% society-wide decline and a 12% decline personally may not seem sufficient given scientific proposals in the range of a 75% emission reduction needed in the United States to avoid the worst effects of climate change. But if incrementalism helps avoid backlash, then the modest consumption reductions noted above may be more lasting than rapid change. However, are current changes widespread and fast enough to offset the predictions of physical science research? Physical science is not giving a unified sense of what pace of reduction is necessary. In this respect, the observed general trend lines may be more useful than debatable specifics.

The A-B Gap study with environmental leaders (Study 16) highlighted some confounding implications about respondents’ behaviors in light of perceptions of impending climate catastrophe. The 30 people that we estimated to be on the high side of emissions per capita were much easier to find than the

fifteen selected for low-emissions behaviors. This may be in part due to the “environmental leadership” respondent achievement of higher-than-average incomes, reinforcing the income-emission relationship. It may also be in part due to the high travel quotient associated with the norm of leadership. Irrespective of the reason, 26 of those 30 respondents exhibited high-emission behaviors on emission-comparison metrics. On one hand, if people learn through observing and mimicking normalized behaviors, especially those leaders, mentors or peer exemplars, what does sustainability “leader” or “teacher” mean? On the other hand, these are also well-meaning and concerned citizens living within their own constraints and expectations of normative behavior—even if they are high-emission ones. The point of taking a critical view is to raise fundamental questions: How does social change happen? What is the imperative for leadership within their self-offered perceptions of serious future risk? What is the role of individual example in a time of policy inaction?

Life, Liberty, and the Pursuit of Happiness

Whether or how fast this culture embraces an economic paradigm of lower consumption obviously depends on favorable perceptions of a low-consumption path. The A-B Gap study finds our low-consumption respondents defining happiness and “wealth” embracing nonmonetized values, with time to do as they please and pursue prosocial and intrinsic behaviors. This may even go as far as redefining deconsumption as a new social identity, worn with pride. Arbuthnott’s (2011) earlier critique of our research offers evidence that materialistic identity toward low consumption may be driven by positive affective motivation. A quote from one of her students, “It makes me happier to be known as the girl who doesn’t drive a [explicative deleted] car to school,” suggests pleasure derived from lower impact behavior. The 40-year old architect’s focus-group comment “I’m poor and loving it,” after a previous pursuit of wealth, captures a similar mood (Study 14).

At least nine national or international initiatives are advocating for some version of a “happiness” or well-being index as an alternative to Gross Domestic Product (GDP) as a primary metric of progress. Researchers of these initiatives provide evidence that progressively higher income and consumption levels do not deliver happier, healthier, or more satisfied populations once fairly basic levels of sustenance and comfort are obtained (Easterlin 1973; 1974; 1995; 2001; 2005; Layard, 2005; for an opposing view see Stevenson & Wolfers, 2008 and for a counter rebuttal, see Easterlin et al. 2010; c.f. Diener et al. 1992). Examining the concept of well-being as a motiva-

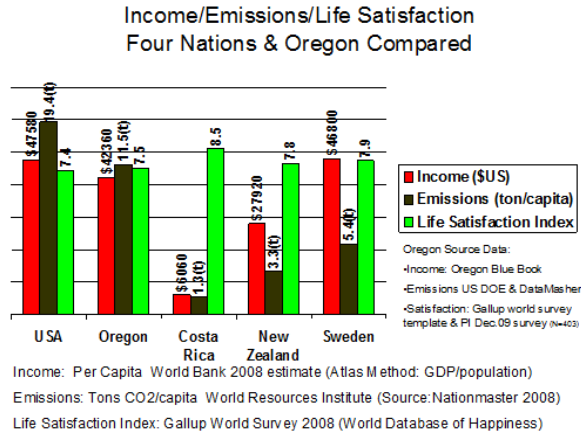


Figure 2 Income, emissions, and well-being comparisons across select jurisdictions.

tional substitute for affluent consumption is assisted by comparing the correlations of income, carbon emissions, and self-reported well-being. Figure 2 describes this for Oregon, the nation, and three countries with certain demographic features that are similar to Oregon. A lack of correlation among income, emissions, and self-reported life satisfaction supports questioning income growth and resulting per capita income above threshold levels.

Is There a Case for Lower Incomes?

A large body of research has found declining utility of income above a certain point (Veenhoven, 1991; Deiner et al. 1992; Easterlin, 2005; 2010). Because of the inevitable relationship of income to consumption, a question naturally arises as to whether attitudes favorable to consuming less also extend to earning less. Our qualitative and quantitative research found nonenvironmental attitudes such as more leisure time, self-reliance pursuits, and a generally simpler life played some part in the consume-less motivation. Would this equivalently apply to voluntarily earning less, closing the loop on the earning-consuming paradigm of affluent culture? How does Costa Rica obtain higher well-being at 15% of the per capita income level of the United States, as well as just 6% of the emissions per capita? Examination of Costa Rica’s income also reveals that purchasing power parity (PPP)¹³ exceeds the GDP measure of personal per capita income by 40%, yielding an effective US\$10,000 income from just US\$6,000 of monetized income, whereas highly monetized income cultures do not exhibit this characteristic. Signifi-

¹³ PPP per capita is an alternate method of measuring income accounting for equivalent income potentially independent of the exchange of money, whereas the Atlas Method derives from GDP divided by total population.

cantly higher PPP than GDP per capita indicates that a daily basket of goods is derived outside institutionalized monetary exchange. Anecdotal evidence suggests this occurs through barter, collective exchanges, and self-reliance such as growing one’s own food or fixing things to make them last. These pro-social and self-reliant actions (along with Costa Rica’s economic equality and civil order) could be significant contributors to self-reported well-being.

This is not to suggest that Oregon or the United States would voluntarily gravitate to a US\$6,000 income level, in part because of known aversion to losing what is already obtained. The question of income required for an honorable and satisfying life within a society is complex and dependent on cultural context (Diener et al. 1992; Easterlin, 2010). If personal high income accompanies high environmental impact in an era of perceived ecological limits, the case for lower income needs more study and testing.

Conclusion

Finding strong consume-less attitudes in one of the world’s highest consuming countries may have important implications for long-term global sustainability. The finding is especially significant because affirmative response to lower consumption transcends the right and left political divide that commonly defines American policy paralysis, including climate change. Beyond the evidence of *attitude* to consume less, accepted institutional metrics also show that consume-less *behavior* is exhibited, if yet modestly. Because the United States exports culture through media and statesmanship, as well as consuming (importing) considerable volumes of goods produced elsewhere, the global implications may be inferred if attitude and behavior trends to consume less continue. Considerable written debate persists as to why the national and world economies are not rebounding—as is conventionally expected—after the “great” 2008 recession, despite massive institutionalized stimulation efforts. Conventional economists blame “austerity,” certainly an interesting term within the context of this article. Another popular explanation circumscribes a hollowing out of the middle class caused by new forms of work-place automation. Comparatively little is found written about emerging individual attitudes toward frugality and thrift, before and after the recession. With household consumption (broadly defined) credited for driving 70% of GDP, a modest behavior response coupled with strong attitudes to reduce consumption may nonetheless confound longstanding policy objectives of perpetual economic growth.

Deconsumption is apparently problematic to policy makers because it conflicts with expectations

of commerce, employment, and resultant tax revenues to support public services. The policy preference for short-term political exigencies versus longer-term worldwide ecological stability are taken for granted as a rational choice but otherwise not explained to the public by leadership. This could be a partial explanation for popular displeasure about prevailing governance, evidenced in rock-bottom approval ratings at most jurisdictional levels. Institutional leadership is quite frequently in the trailer of social change, witnessed in modern times in such movements as civil rights, the Vietnam War, and the Arab Spring uprisings. The most relevant social change phenomenon is perhaps revisions of world peak-population projections. Projections of 25 billion people of several decades ago have been reduced to the 9–10 billion range and qualified futurists now discuss figures below 5 billion based on free-choice declines in fertility rates (UNDESA, 2003; IASA 2008). The remarkable behavior shift in world-population growth indicates that individual attitude-driven behavior change can take hold unexpectedly.

Policy paralysis may be contributing to the ascendancy of individualism and novel subgroups in a grassroots search for new cultural paradigms in the absence of conventional leadership. The observed plurality support across typically oppositional subgroups for the notion of consuming less offers interesting possibilities for a cultural remixing of political alignments of the past 50 or so years. This could be a coalescing of intrinsic values of well-being, classic conservatism, kinship, community, ecological stability, and the survival of future generations of humans. Public opinion surveying is not much more than mapping topographic pathways within the cultural landscape. Consume-less findings offer evidence that a different path than high materialism could lie ahead of us.

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Appendix 1 PolicyInteractive Studies on Consumption Perceptions and Behaviors Through April 2013.

Study	Date / Location / N / Done By	Method	Topics (+ Demographics)	Description	Key Findings
1	April 2008; Oregon; N = 402; 42 total questions; Average time = 13 minutes; Fielded by Northwest Survey & Data	Random dial landline phone statistical sample of Oregonians eighteen years and older	Climate-change concern; economy concern; government policy-ranked values (six items); demographics	Initial survey, first of eight planned, establish broad social overview of key topics to lay groundwork for further detailed examination. Selected values questions drawn from worldview research of others	Unexpectedly, 87% aggregated agreement to “our country would be better off if we all consumed less” among a group of six values proxies. people dissatisfied with policy choices; economic growth not highest priority
2	June 2008; Oregon; N = 400, 40 total questions; Average time = 14 minutes; Fielded by RDD Field Services	Random dial landline phone statistical sample of Oregonians eighteen years and older	Economy concern; social issues ranked; taxation support; climate-change concern; demographics	Triangulate key items from Study 1; request respondent permission for call-back to conduct qualitative interviews; introduces bidirectional item “buy goods for good of economy” coupled (rotated against) the consume-less item	Initial consumption item revisited; mixed into broad range of social issues yielded 80% total agreement; call-back permission obtained from 75%of respondents; yielded 80 “conservative” respondents about consume less (screened from four questions of interest)
3	August 2008; Oregon; N = 34; Conducted by four trained PI interviewers; Interviews lasting 30–120 minutes	Qualitative interviewing from structured interview form, by phone	Direction of the state; consumption re-asked; economic concerns; personal consumption; personal choices measure; values questions	Interview “conservatives” (self-identified) drawn from survey Study 2 yields 80 prospective respondents; 34 completed interviews using peer-reviewed structured instrument; interviews averaging 60 minutes; conducted by four trained interviewers	Found non-environmentalist conservatives strongly agree we should consume less; they personally report they should consume less and verbalize actions they can take to do so; rationales given indicate broadly shared values toward conservation of resources
4	November 2008–February 2009; Oregon; N = 35; Conducted by four trained interviewers	Qualitative interviewing from structured interview form, in person	Policy-direction support; consumption views; economic concerns; feedback from policy leaders on general public consume-less disposition	Targeted interviews with policy leaders (those estimated to engage with at least 300 citizens per year on public policy issues); occupationally distributed among: elected officials, business, religion and academia; evenly split liberal and progressive; follows largely same instrument as Study 3	Interviews with university president, large city mayor, U.S. congressman, large company businessmen, professors, community leaders, and clergy found high support for consuming less but equally high support for business health (founded on consumption levels; high dissonance on topics of interest
5	November 2008; Oregon; N = 400; 64 total questions; Interview fielded by RDD Field Services	Random landline phone interview of statistical sample of Oregonians eighteen years and older	Policy-trust measurement; personal issues; economic concerns; consumption views; taxation support; cultural dynamics values index (ten items); demographics	Economic downturn opportunism: test and extend consumption views against economic stimulus; policy trust; public support for taxation; test “values” index developed by Cultural Dynamics (UK); introduce objective consumption measurements; relocate key items to test for question order influence	Consume-less agreement 76% to 45% “buy goods for good of the economy”; 48% to 16% strong agreement respectively; Cultural Dynamics finds Oregonians’ values index closer to Scandinavian countries than with U.S. with emphasis on frugality and non-material values; taxation policy to consumption motivations shows no breakthrough; order influence testing indicates agreement significance favoring “consume less” over “buy goods”
6	April 2009; Oregon; N = 406; 63 total questions; Fielded by Information Alliance	Random landline phone interview of statistical sample of Oregonians eighteen years and older	Economic downturn; values: culture theory; values: moral foundation; consumption views: climate change; consumption-fee testing; demographics	Triangulation with prior findings of interest on consumption; survey continues exploration within economic “crisis” and adds two validated values indices from Yale Cultural Cognition Project and University of Virginia Morality Foundations; objective behaviors development is continued	“Consume-less” agreement 76% to “buy goods” 69%, 2:1 strong agreement respectively; no profound insights or correlations with tested values theories; Yale project runs PI “consume-less” question about same time and finds 79% total agreement on national sample of N = 1500, suggesting

					Oregon results not outlier to nation; policy support results not unusual
7	December 2009; Oregon; N = 403; 57 total questions; Conducted by Information Alliance	Random landline phone interview of statistical sample of Oregonians eighteen years and older	Consumption/behavior; Inglehart eight-value index; policy-choice measures; PI ten material-value index; happiness/well-being; demographics	Public-policy support testing for "consumption fees or taxes"; compare validated Inglehart "post-materialism" index with PI developmental index; introduce "well-being" items	82% "consume less" to 71% "buy goods," 2:1 strong agreement respectively; consumption fees show conventional levels of support; Inglehart index non-informative, PI index development continues progress, well-being items show low statistical correlations
8	December 2010; Oregon; N = 400; 35 total questions (two open-ended); Conducted by Information Alliance	Random landline phone interview of statistical sample of Oregonians eighteen years and older	Public deficit spending; trust of technology; growth vs. environment; climate change; political party trust; demographics	Examine public attitudes of trust in institutions and problem solvers; introduce "forced choice" of environmental protection or economic growth; re-test correlates of ideology/technology/environment concern/ economic growth; introduce "life-satisfaction"	72% "consume less" to 49% "buy goods," 2.5:1 strong agreement respectively; low confidence in technology and political party politics; 1.5:1 protect environment over economic growth
9	August 2011; National; N = 400; 277 total items covering 14 validated and experimental indices; Conducted on Mechanical Turk Internet platform	Internet opt-in using Mechanical Turk national non-statistical sample	European Social Survey; life satisfaction; materialism; environmentalism; time perspective; money and affluence; consumption behavior; sixteen total scales; demographics	Opening exploration of attitude and behavior traits with eight validated indices and six experimental indices related to consumption behavior insights; this opens working collaboration with Ryan Howell (SFSU Personality and Well-being Lab) and the Seattle Happiness Initiative; aims to find indices of significance for further development (list of scales and items on request)	National opt-in sample yields demographic response skewed to young middle-age professionals, below average income, above average education; finds high support for "consume less"; inter- and intra-indices yield generally low significance for insights toward consumption behavior; methodology shows utility for low cost experimental survey design and testing
10	September 2011; National; N = 400; 203 total items covering 13 validated and experimental indices conducted on Mechanical Turk Internet platform	Internet opt-in using Mechanical Turk national non-statistical sample	European Social Survey (ESS54); aspirations; materialism; personality traits; behavior measures; public policy support; thirteen total scales; demographics	Second in PI-SFSU exploration of existing and experimental indices includes ESS 54 Well-being Index, five validated indices, and seven experimental indices plus demographics; also being used by Howell to design validated "well-being and happiness" survey for Seattle Happiness Initiative (list of scales and items on request)	Finds high attitude support for "consume less", complex configuration of correlations yields low significance for inter- and intra- indices toward consumption behavior; new Ecological Paradigm Index shows highest significance toward consumption behavior
11	September 2011; National; N = 475; 219 total items run on Survey Monkey	Internet opt-in using Survey Monkey national non-statistical sample	Gross National Happiness (GNH); quality of Place (QoP); governmental support; worldviews; materialism and buying; PI worldviews; work values; thirteen total scales; demographics	Third in PI-SFSU Lab exploration of new measurement indices, this validates scales for Happiness Initiative's GNH Index; trial of "quality of place" measurement to correlate well-being, living location, consumption behaviors and policy support (report provided on request)	Validates new GNH Index; statistical correlations of QoP measurement finds low utility unless highly stratified for geographically detailed and focused studies; we find simplified measurement scale necessary but needs to be tested to meet specifications of interested metropolitan jurisdiction; worldviews and behavior measures showing utility solidification
12	November 2011; National; N = 559; 282 total items; Conducted on Mechanical Turk Internet platform	Internet opt-in non-statistical sample	Life satisfaction (3); well-being (short 16); QoP; worldview (10); consumption behavior (14); policy support; fifteen total scales; demographics	Refine scales for utility of fielding on statistical sample or refined Internet sampling; extend and simplify QoP index and increase understandings of linkages to other indices; continue to study correlations with existing validated indices to consumption behavior and worldviews	1.5:1 "protect environment" over "economic growth"; indices run smoothly and yield measures of significance in behaviors but national opt-in platform limits confidence in cultural predictability; it is time to move scales of utility into statistical sampling
13	November 2011;	Random sample	Economy vs. environment;	Sustainability and Consumption Study for	Found > 1.5:1 environmental priority over

	Eugene (OR); N = 300; 52 total items	land and cell phone statistical sample interview	climate attitudes; climate behavior; barriers to action; willingness to change; demographics	City of Eugene in collaboration with DHM Research; designed as information gathering of citizen opinions; testing message frames; intended design of communication strategy for motivating thoughtful consumption behavior for sustainability objectives	economic growth; > 2:1 “consuming less” over “consume more goods and services” and broad sense of necessity to address climate change through personal and policy behaviors (full list and response on request)
14	December 2011; Eugene (OR); N = 24; two 2-hour discussion sessions	Two focus groups; N = 12 each; selected pro-economic growth/pro-environmental protection; 2-hour sessions	Existing behaviors; behavioral motivations; desired changes; barriers to change; consumption attitudes; source of influence; demographics	Designed and conducted by market researcher Bell+Funk (PI consultation); extended the Eugene City Study by examining perceptions and conversation within a social experience of citizen peers (24–50 years old, US\$30–50K/year income); one group selected for pro-environment, the other for pro-economic growth; selected from random sample phone solicitation interview process	Differences of two groups were not substantial; both groups exhibited high affinity to address responsible sustainable behavior; pro-environment stronger for less-consumption/simple living, pro-economy for buying locally and seeking durability and quality in buying decisions; outcomes assisted design of communication frames for next stage testing
15	February–March 2012; Eugene (OR); N = 692; Fielded by FusionMR Research	Opt-in Internet non-statistical sample; using metropolitan public utility address base	Consumption/economy; purchasing motivations; thoughtful consumption testing; message-frame testing; respondent-ranking test; demographics	Third study for Sustainable Consumption and Economy for City of Eugene; focus on communication and message frame strategy to inform policy objectives	Very high support for “consuming fewer goods” (85%) compared to “grow the economy by consuming more goods and services” (12%); identified high attitude support for durability, “need over want”; “live by example,” “less waste” and “better life for future generations” were strongest message motivators
16	March–June 2012; Eugene (OR); N = 45; Conducted by three PI staff interviewers	Qualitative interview of targeted environmental leaders	Life values; environmental attitudes; emission measurement; attitude-behavior feelings; personal responsibility; morality and guilt discussion; behavior motivation topics; role of policy	Interview explores personal feelings of environmental leaders who generally live high emission lifestyles for a variety of reasons; also includes a small comparison interview group of low-emission lifestyles; purpose was to intentionally submit respondent to a double bind of attitude and behavior and conversationally explore emotions and reactions	Found considerable miss-estimation of personal emissions of environmental leaders who have high-carbon emissions; conversations reveal unresolved anxiety or guilt over disconnect between values and behaviors; low-carbon emitters are considerably more accurate in their self-assessments yet still possess anxiety over emission-type behavior

Note: This list does not include results of survey items inserted into approximately five surveys conducted by others but shared results indicate consistency with our own findings.