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Thinking past, thinking future: An empirical test of the effects of retrospective assessment on future preferences



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ABSTRACT

In recent work, we asserted that the largest group of stakeholders for sustainability science is future generations; yet intergenerational tradeoffs are often understudied. We proposed retrospective assessment as one potential means of clarifying what future preferences might be. Using a split-sample design we test the potential for retrospective assessment to influence citizens' preferences for future policy decision. We test the potential for retrospective assessment to yield increased or decreased support for policy. Our findings reveal context dependent public policy preferences where the presence of retrospective assessment significantly impacts citizens' preferences and outcomes appear strongly influenced by the attributes of the historical (or retrospective) scenario provided.

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"People will not look forward to posterity, who never look backward to their ancestors." Edmund Burke

1. Introduction

In his 19th Century utopian novel *Looking Backward*, Edward Bellamy uses what we might now call retrospective assessment in telling the story of his idealized image of the future. The protagonist looks back from the year 2000 to his previous life in the late 1880s to explain how society could transcend the ills of industrial America. Bellamy's approach is an early literary version of backcasting (Robinson et al., 2011; Vergragt and Quist, 2011), imagining a future state and then thinking what viable path there might be from the present reality to that future state.

The relevance of similar retrospective thinking has been proposed in other contexts as well. Retrospective technology assessment was suggested as a technique for improving the methodologies of technology assessment (Tarr, 1976; Coates et al., 1982). The idea was to assess the current state of impacts of a mature or maturing technology and then determine by what technique those actual impacts might have been seen before the technology was adopted, using only the information available in that earlier time. Similarly, historical analysis was proposed in building community involvement in environmental protection (Pearce, 1999; Pesch and Garber, 2001) and in addressing complex environmental changes (Dreborg, 1996). The use of historical analysis

in this manner reflected Heilbroner's (1960) pioneering notion of *The Future as History*; and history's role in public policy making continues to spark discussion (Guldi and Armitage, 2014).

Anderson et al. (2012) argued that retrospective assessment should play a role in sustainability as well. The contention was in response to neoclassical economists, who hold that preferences of those in the future are unknowable (Solow, 2000), and therefore the best we can do is assume that future preferences will be like those today. Additional assumptions made in neoclassical models about individual preferences include context independence and a self-regarding nature (Sugden, 2005; Gowdy, 2007). Thus in benefit cost analysis, the methodological tool for applying the neoclassical model to future analysis, values of benefits and costs are either derived from present market transactions or inferred through stated preference measures of current individual's values (Just et al., 1982; Anderson et al., 2015). Ecological and behavioral economists questioned such stability of preferences (Norton et al., 1998) finding that choices may be both context dependent and otherregarding, leading to a belief that we can know in broad ways about future preferences. Furthermore, knowing something about future preferences is imperative if sustainability is really to be about meeting the needs of those in the future as well as those today. As Norton (2005, pp. 315-329) argued, total ignorance of "... what effects of our activities can be predicted to be benign and which are likely to be harmful..." is not reasonable and that we can have "...a convincing basis for some expectations about what the people of the future will want..." (p. 326).

Since stakeholder engagement is central to sustainability (van Kerkof and Lebel, 2006), treating future citizens as stakeholders in present decisions is a legitimate and necessary contribution to

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sustainability science. In answering the question of how can future interests be represented in today's sustainability decisions, Anderson et al. (2012) posited that retrospective assessment is one means of understanding future stakeholders' reactions to the legacy of the current generation. The assertion was that by examining our reactions to past decisions, we better assess how the future will respond to decisions we make in the present. That is, instead of assuming that preferences for policy in the future will simply be like those in the present, we can better estimate future reactions to our current decisions by examining our reactions to past decisions. Thinking about the past more explicitly will help us better "give voice to the future" in our current policy deliberations.

There is, however, little empirical evidence about how retrospective assessment affects thinking about the future. Does this approach actually change people's thinking about how present decisions will be valued by future generations? Anderson et al. (2012) indicated that present decisions will be "perceived in the future with indifference, regret or gratitude" (page 4). The current research employs this framework to address the key question: Does retrospective assessment affect thinking about future preferences? Embedded in this question is the idea that thinking about the past through retrospective assessment is a form of framing (Levin et al., 1998) when such thinking is encouraged prior to thinking about the future.

We hypothesized that sustainability issues will be affected by retrospective frames in consistent ways. If individuals are asked first to think about past policy decisions for which they were future stakeholders and about which they feel gratitude, those people may think more positively about future policies that are analogous. We further hypothesized that past policy decisions viewed with regret will engender more negative thinking about analogous policy decisions proposed for the future. We used the concepts of gratitude and regret to frame policy preferences in order to reflect the temporal dimensions of preferences that might be influenced by retrospective assessment. As Gowdy and Howarth (2007) said, "Sustainability is not about what would be efficient for use to bequeath to the future, but rather what future persons would like for us to do today in order that their world might be more to their liking.".

2. Methods

In order to address the effectiveness of retrospective assessment we designed two experiments to test whether preferences for public policy are changed, and if so, the nature of the change induced. This is the necessary first step in understanding how retrospective assessment might be used to include the interests of the future as stakeholders in current policy decisions. If policy preferences are shown to be changed by retrospective assessment, subsequent research would be needed to determine how it would aid in future stakeholder engagement. It is important to note that our investigations were not meant to manipulate respondents towards or away from a specific policy preference. Rather, the goal was to test whether retrospective assessment had an effect, a phenomenon for which we could find no empirical evidence in the literature. To conduct these experiments we undertook a mail survey of the general population of the State of Maine, in the Northeast corner of the United States, in the summer of 2013 using modified Dillman methods (Dillman et al., 2009). We began by following components of the proposed retrospective assessment process set forth by Anderson et al. (2012) where individuals are asked to think about a previous decision for which they may have preferences (i.e. feel regret, gratitude, or indifference).

Our original sample was split into two sub-samples, where one sample viewed questions about land conservation decisions in Maine and the other about energy policy decisions. The land conservation subsample (n=179,30% response rate) was intended to test the effects of a gratefully acknowledged or "positive" retrospective assessment

while the energy policy sub-sample (n = 198, 31% response rate) was intended to test regret or "negative" retrospective assessment.¹

2.1. Land Conservation Experiment

The policy issue considered in the land conservation experiment was the controversial offer of philanthropist Roxanne Quimby to donate approximately 70,000 acres (28,328 ha) of relatively undeveloped forest land, formerly held by private owners, in north central Maine to the Federal Government for the establishment of a National Park (Bangor Daily News, 2013a). This issue has been extensively covered in print and electronic media throughout Maine and the northeastern United States (see for example, Bangor Daily News, 2013a; Baker, 2013; Dill, 2012). Given this extensive media attention, we expected that respondents were likely to have been exposed to the issue and to the alternatives to a National Park establishment. The alternatives that had been extensively discussed in Maine were chosen for the response set in the experiment. Our control group (n = 89) was given a brief description of the Quimby proposal (Fig. 1) and asked to select the statement closest to their feelings about the proposal. The respondents in this control group were not asked to do any retrospective assessment.

The story of the creation of Baxter State Park (BSP) is in many ways similar to the recent Quimby gift offer. BSP is located directly adjacent to Quimby's land. BSP was established early in the 20th Century by a former governor of Maine using his own personal wealth to accumulate privately held land that was then gifted to the State for the creation of a park (Rolde, 1997). Thus we feel this historical scenario is an apt frame for positive retrospective assessment to affect future thinking, particularly since BSP is an iconic public resource for many Maine residents. In both cases, BSP and the Quimby offer, there was a private individual offering to donate land purchased with private wealth for the establishment of a public park (one owned by the State of Maine the other to be owned by the Federal government). The temporal context was the major difference — BSP had been established for generations, the park from the Quimby gift was to be established in the future. The respondents in the treatment group (n = 90) were asked first to think about the establishment of Baxter State Park (Fig. 2), followed by the Ouimby information and a question identical to the control group.

The shared baseline knowledge of Maine citizens regarding the historical and proposed policies yielded respondents able to participate in the experiments with limited provision of information about these scenarios in the experiments themselves. We appreciate that readers of this manuscript may not share this baseline and endeavor to provide additional information on the options presented to participants. The creation of a National Park would transfer control of the land, and choices made about the land, to the United States Federal government. National Parks are traditionally focused on preservation of resources, and do not alter the existing state of the land. Comparably, National Forests are also owned and controlled by the U.S. federal government, however their objective is to "sustain the health, diversity and productivity of the land" (National Forest Foundation, 2013), thus carefully managing the resources on the land (here for example, continuing to harvest timber). In contrast to the national options, State Parks are owned by, and controlled by, Maine state agencies. Similar to National Parks, these parks are preservation oriented. The final option presented to participants was private ownership of the land in question. While private ownership of timber land yields harvesting activity, a long standing tradition in Maine is public access for recreational purposes (hunting, camping, snowmobiling, hiking, etc.) to private land (Birch, 1982; Vail and Hultkrantz, 2000).

We expected that the majority of participants would express gratitude for the formation of Baxter State Park; thus the majority of respondents would select the first choice. We anticipated that this gratitude

¹ Copies of all the surveys are available from the corresponding author.

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