

**Contesting Rationality: A Target Population and Devil Shift Approach to
Evaluate Collaborative Policymaking**

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ABSTRACT

Two alternatives to rational actor models for analyzing policymaking are the social construction framework's theory of target populations and the advocacy coalition framework's theory of the devil shift. Both theories are used as complimentary lenses to assess the changes in perceptions of groups as policymaking shifts from adversarial to collaborative approaches. With Lake Tahoe environmental policy as a case study, the data comes from one questionnaire administered to policy participants in an adversarial era of policymaking (1984) and two questionnaires administered four (1990) and seventeen years (2001) after consensus in a collaborative era of policymaking. The findings show that, as policymaking shifts from adversarial to collaborative eras, (i) respondents perceived groups more positively and powerfully and (ii) the number of respondents experiencing the devil shift decreases. The results suggest that one of the virtues of collaborative policymaking may be improved group relations but it may take more than a decade to measure the effects.

INTRODUCTION

Many of the traditional theories of politics and policymaking have assumed that actors' perceptions are reasonably accurate or, at the least, that their perceptions are not systematically biased in one direction or another. Such rational actor models have provided the foundation for theories of public choice (Black, 1958), structural choice (Moe, 1990), democracy (Downs, 1957), collective action (Olson, 1965), and political coalitions (Riker, 1962). The rational actor model also lies at the core of many techniques in policy analysis and evaluation (Stokey and Zeckhauser, 1980) and provides a rationale for linking the stages of the policy cycle in the policy sciences (Lasswell, 1951).

To some extent, the perceptual distortion and biased assimilation is absent even from theories originating from bounded rationality outlined by Herbert Simon (1947; 1985; 1996) and later developed by Jones (2001). For even in the punctuated equilibrium theory (Baumgartner and Jones, 1993; Jones and Baumgartner, 2005), the eventual outcome is stochastic distributions without clear directionality of systematic biases. Alternate frameworks and theories exist that contest rational actor models thereby assuming that actors must overcome constraints in information processes and the tendency to distort external stimuli. The purpose of this paper is to showcase two such alternate theories – the social construction framework's theory of target population and the advocacy coalition framework's theory of the devil shift – applied to investigate changes in group perceptions over time.

The social construction framework and its theory of target populations were originally developed by Schneider and Ingram (1993; 1997). The social construction framework depicts actors with limited cognitive capabilities, complex motivations beyond self interest, and a

tendency to use heuristics to configure and selectively weigh elements in a system (Schneider and Ingram, 1988; p. 63-8; Schneider and Ingram, 2007; p. 1-6). The theory of target population places this actor into an issue context where distorted perceptions of groups interact to affect how policies are designed and therefore how benefits and burdens are distributed.

The advocacy coalition framework was originally designed by Sabatier and Jenkins-Smith (1993) to explain subsystem politics, politics among competing coalitions, and the factors that affect learning, belief change, and policy change. The advocacy coalition framework assumes a model of the individual who is guided by his/her beliefs, which, in turn, both filter and distort the assimilation of external stimuli. Borrowing from prospect theory, the advocacy coalition framework also assumes that actors remember losses more than gains (Quattrone and Tversky, 1988). Emerging from this model of the individual is the devil shift theory where the combination of belief-laden filters and the hyper-tendency to remember political defeats leads actors to exaggerate the maliciousness and power of opponents (Sabatier, et al., 1987; Weible et al., 2009).

This paper uses the target population and devil shift theories to assess changes in the perceptions of groups as policymaking shifts over time from adversarial to collaborative eras. Adversarial policymaking is marked by a family of conditions including distrust and a lack of communication between rivals, opaque and top-down decision making processes, limited public participation, excessive venue shopping often leading to litigation, or the political use of science. In contrast, collaborative policymaking constitutes institutional arrangements fostering trust and communication among rivals, fair rules of negotiation, an emphasis on problem definition, open participation, transparent decision making and shared access to authority, or joint-fact finding (Weber, 1998; Wondolleck and Yaffee, 2000; Koontz et al., 2004; Sabatier et al., 2005).

Collaborative policymaking has been the dominate approach to governance, especially in environmental policy, for approximately two decades (Bingham, 1986; Dewitt, 1994). But evidence documenting the effectiveness of the approach tends to be case studies with only a few studies based on a quasi-experimental design, the exceptions being Layzer (2008), Lubell (2004a, 2004b), Daley (2007), Meyer and Konisky (2007), Weible et al. (2004), Ambruster and Leach (2006), Schneider (2008), and Coglianese (1997; 2003). While the primary thrust of this paper is to showcase two alternate theories that contest rational actor models, a secondary thrust is to provide a rare investigation into the changes in perceptions of groups before and after the emergence of collaborative policymaking.

The case study is environmental policy in the Lake Tahoe Basin. Data from three questionnaires are analyzed based on samples of policy participants actively involved with, or knowledgeable about, Tahoe environmental affairs, particularly water policy. The Lake Tahoe Basin makes for an interesting case study for two reasons. First, it is one of the few case studies where there exists datasets of the perceptions of policy participants that spans more than a decade, thereby capturing the perceptions before and after the emergence of collaborative policymaking. Second, environmental policy in the Lake Tahoe Basin mirrors national trends in policymaking where policymaking shifts away from adversarial approaches to more collaborative approaches.

The goal of this paper is to answer the following research question: To what extent do perceptions of groups improve in collaborative policymaking compared to adversarial policymaking? The next section provides an overview of the social construction framework and the advocacy coalition framework and their respective theories of target populations and the devil shift. We then present the relevant background on the Lake Tahoe case study and the

methods of data collection. The results summarize the data in several figures and tables. The paper finds that collaborative policymaking has had positive effects on the perceptions of groups and is associated with a decrease in the devil shift.

THEORETICAL OVERVIEW AND HYPOTHESES

Social Construction Framework & Target Population Theory

The social construction framework was first developed and later refined by Schneider, Ingram and others (1993; 1997; 2005; 2007) in an attempt to identify the recursive and enduring interactions between policy designs and the distribution of benefits and burdens within society. The framework includes a theory of target populations that identifies positive and negative social constructions of target populations as the causal mechanisms to study in order to better understand a target group's distribution of benefits and burdens.

There are four central concepts of the target population theory applicable to this study. They are policy design, target populations, constructions, and power. The first concept is policy design. Policy design refers to the content or substance of public policy as found in the text and practices through which policies are conveyed and have consequences (Schneider and Ingram 1997, 2-3; 81-82). Policy designs contain specific observable elements that include target populations, goals or problems to be solved, rules, rationales, and assumptions (Schneider and Ingram, 1997). These elements have underlying patterns that cause tangible consequences along instrumental and interpretive dimensions. The consequences of policy designs are arranged to serve particular values, purposes, and interests (Schneider and Ingram 1997). These values, purposes and interests are developed through conflict and cooperation and therefore may contain

internal inconsistencies and multiple interpretations as well as functions (Schneider and Ingram 1997).

A second concept of the target population theory is target populations (Ingram and Schneider, 1991; Schneider and Ingram, 1993, 335; Schneider and Ingram, 1997, 84-89). Schneider and Ingram (1997) refer to target populations as a group of people affected by a policy design. Target populations can vary widely in their makeup. Some examples of target populations given by Schneider and Ingram (1997, 109) include “veterans”, “criminals”, “small businesses” and “mothers”. While target populations do differ extensively, they are defined as targets of decision-makers chosen for behavioral change through the incentives or sanctions of policy designs (Schneider and Ingram, 1991)..

The third concept applied here are constructions (Schneider and Ingram, 1993, 335; Schneider and Ingram, 1997, 106-108; Schneider and Ingram, 2005, 1-28). Constructions are normative and refer to the perceptions and symbols associated with target populations. Examples of constructions include “greedy”, “deserving”, and “mean”, among others (Schneider and Ingram, 1993, 335). These concepts are also evaluative and can be applied as positive, negative, or mixed. For example, a target group described as greedy can be applied as a negative evaluation, while a deserving target group can be applied as a positive evaluation. Constructions of target groups may appear intractable to change but they are dynamic over time and show variance as perceived across a population (Schneider and Ingram, 1997, 73, 106-107).

The fourth concept in the theory of social construction is power. Power is defined “mainly in terms of the first face of power – to influence” (Schneider and Ingram, 1997,108). Here power is understood as one of the three faces of power as defined by Bachrach and Baratz

(1961). The capability to influence can be applied through political resources as determined by such resources as votes, wealth, skill and the potential to mobilize people among others (Schneider and Ingram, 1993, 335; Ingram, Schneider, and deLeon, 2007,101). While power tends to be defined by its first face, Schneider and Ingram (1997, 75) contest that the concept can include the second face, the capability to influence the agenda (Bachrach and Baratz, 1961) and the third face of power, to influence the rational of preferences (Bachrach and Baratz, 1961; Lukes, 1974). This study will focus on the first face of power, to influence policymaking.

These four distinct concepts combine to formulate four categories of target populations that according to the theory of target populations receive different types of benefits and burdens (Schneider and Ingram, 1993). Those who are *advantaged* have power and are positively constructed and are expected to receive a disproportionate share of benefits and few burdens. The *contenders* have power but are negatively constructed and are expected to receive sub-rosa benefits and few of the burdens. The *dependents* do not have power but are positively constructed and are expected to receive rhetorical benefits and some of the burdens. The *deviants* do not have power and are negatively constructed and are expected to receive limited to no benefits and a disproportionate share of the burdens.

Based upon this review of the theoretical literature, the relevant concepts addressed in the survey questions include the formulation of target populations within the matrix of benefits and burdens as determined by group power (influence) and social construction (evaluation). The results of the survey concerning the formulation of groups along the categories of advantaged, contenders, dependents, and deviants are recorded and analyzed. The framework assumes that movement between these categories may occur as a result of external and internal events (Schneider and Ingram 1997, 106-107).

For the target population theory, we test the following hypothesis: *Target populations will be more positively constructed and more powerful as policy subsystems shift from adversarial to collaborative.*

The Advocacy Coalition Framework and the Devil Shift Theory

The advocacy coalition framework guides researchers in understanding political conflicts and belief and policy change. Within the advocacy coalition framework is the theory of the devil shift that posits “at least in relatively high conflict situations, political elites tend to see their opponents as ‘devils,’ i.e., as being more powerful and more ‘evil’ than they actually are” (Sabatier et al., 1987, 451).

The cognitive basis for the devil shift lies in the advocacy coalition framework’s three assumptions about the mental model of its actors. First, actors rely on heuristics to overcome constraints in information processing (Simon, 1996; Jones, 2001). Second, actors distort the processing of information and retain stimuli consistent with preexisting beliefs and to reject stimuli dissonant with preexisting beliefs (Lord et al., 1979; Munro and Ditto, 1997; Munro et al., 2002). As a result, there are systematic biases in perceptions and not just random-search. Third, actors remember losses more than gains and, therefore, will remember political defeats more than political victories (Quattrone and Tversky, 1988).

Integrating these three assumptions creates a model of the individual where belief change is very difficult because dissonant information is filtered out. People with opposing beliefs will interpret the same piece of information in very different ways, leading to distrust, a suspicion of opponents’ motives, and portrayal of opponents as malicious or evil. In addition, histories of

political defeats result in groups magnifying their opponent's political power. The resulting devil shift occurs when actors exaggerate both the evilness and power of their opponents.

The devil shift involves two main concepts: evilness and power. This paper adopts the definition of power found in Sabatier et al. (1987, 452) as the ability to influence subsystem affairs, such as policy designs. This paper also adopts the definition of evil found in Sabatier et al., (1987, 451-452) as the negative perceptions of the motives, reasonableness, and/or behavior of opponents.

A concept can be defined by its negative pole or by a concepts negation (Goertz, 2006). The negation of the devil shift has already defined by Leach and Sabatier (2005) as the "angel shift." The angel shift is the tendency for actors to exaggerate the power and virtues of their allies. In this paper, we measure the extent that actors experience the devil shift, the angel shift, and a mixed angel and devil shift as policymaking shifts from adversarial to collaborative approaches.

For the devil shift theory, we test the following hypotheses: *After the emergence of a collaborative policymaking, there will be a decrease in the number of actors experiencing the devil shift and an increase in the angel shift.*

Both the devil shift and target population hypotheses predict that, after the emergence of collaborative policymaking, there will be improvements in the perceptions of groups measured along dimensions of power, positive or negative constructions, and degree of evilness. Such effects mirror arguments in the literature about the virtues of collaborative policymaking, including an increase in trust (DeWitt, 1994; Weber, 1998; Leach and Sabatier, 2005), a decrease in conflict (Lubell, 2000), an increase in attempts to find win-win solutions (Sabatier et al., 2005), and active cooperation among rivals (Dewitt, 1994; Weber, 1998).

LAKE TAHOE CASE STUDY

The Lake Tahoe Basin is located in the Sierra Nevada Mountains on the border of California and Nevada and is considered one of the most spectacular alpine lakes in the world. Tourism boomed in the late 1960s as millions of people began to visit the lake to snow ski, hike, and gamble. Thousands more bought property for business or second and residential homes.

There have been two major eras of environmental policymaking in the Lake Tahoe Basin: the first is an adversarial era prior to 1986/7 and the second is a collaborative era post 1986/7 (Elliot-Fisk et al., 1996; Sabatier et al., 2003). The adversarial era began in the late 1960s in response to the growing concern among environmentalists and allies about the potential adverse effects on the environment from the new visitors, residents, and development. In 1969, California, Nevada, and the federal government signed a bi-state compact, which created the Tahoe Regional Planning Agency (TRPA) to coordinate water quality management in the Basin (Elliot-Fisk et al., 1996). The compact charged the TRPA with developing land use plans and with regulating development. The TRPA approved their first general plan in 1971 and quickly received criticism from business groups and developers for imposing too much restriction on development as well as environmental groups for not restricting development enough.

Basin leaders revised the bi-state compact again in 1980 to give priority to environmental quality over economic development. Based on the 1980 compact, the TRPA adopted a new general plan in April of 1984. The next day, environmental groups filed lawsuits alleging the plan would not control development. A property rights group also filed a suit alleging violations of property rights. In June 1984, a court stopped all construction in the Basin until an acceptable plan was adopted. In response, the 1985 Nevada Legislature threatened to withdraw the state from the bi-state compact, ending the agreement on environmental regulation in the Basin (Elliot-Fisk et al., 1996; Kauneckis et al., 2000). By 1985, a hurting stalemate ensued where

policy participants on all sides considered the status quo as unacceptable and saw no other venues to turn other than negotiation.

Following almost two years of negotiations, a new plan was approved in 1986/87 and a collaborative era of policymaking began. The implementation of this plan has also been supported by several consensus-based organizations that have been the dominant decision making venues throughout the Lake Tahoe Basin since the late 1980s (Elliot-Fisk et al., 1996). These formal organizational examples include the Transportation and Water Quality Coalition (est. 1989); the Tahoe Coalition of Recreation Providers (est. 1991); the Tahoe Truckee Economic Coalition (est. 1992), and the Forest Health Consensus Group (est. 1992) (Nechodom et al., 2000).

METHODS OF DATA COLLECTION

Three questionnaires were administered to policy participants in the Lake Tahoe Basin in 1984, 1990, and 2001 to capture their perceptions regarding the state of the Basin and how they felt it should be managed. Respondents of the questionnaires were chosen through a modified snowball sampling technique. In some cases, respondents were found within an agency/organization of interest. Additional potential participants were recommended by the stakeholder advisory committee formed for the research project. The stakeholder sample included representatives from local government and public utility districts (PUDs), business and property rights groups, environmental groups, researchers and scientists, and regional development agencies, including the Tahoe Regional Planning Agency (TRPA), the Tahoe Conservancy, and the Lahontan Regional Water Quality Control Board. In 1984, 334 surveys were mailed and 202 were returned (60% response rate). In 1990, 534 surveys were mailed and

316 were returned (59% response rate). In 2001, 657 surveys were mailed and 365 were returned (56% response rate) (Sabatier et al., 2003).

OPERATIONAL DEFINITIONS

The construction and power dimensions of the social construction framework were operationally defined by two questions. Both questions asked to survey respondents to score more than ten groups on a scale from 0 to 100 on influence (power) and evaluation (construction). Power was defined as how influential the group is in environmental policy in the Lake Tahoe community. Construction was defined in terms of how respondents would rate the performance of this organization as it pertains to the type of Basin they (the respondents) would like to see (see Section 1 in appendix for the exact wording of the questions). The ten groups that the respondents were asked to rate from 1984 through 2001 included the following: (1) the Tahoe Regional Planning Authority (TRPA), (2) the gaming industry, (3) the Lahontan Water Quality Control Board, (4) the United States Forest Service (USFS), (5) land developers, (6) environmental groups, (7) local government, (8) business associations, (9) property rights groups, (10) and the United States Environmental Protection Agency (EPA). This question was consistent across the three surveys, though the groups included differed slightly between the earlier questionnaires (1984, 1990) and the 2001 questionnaire (see appendix for complete operational definition).

For the devil shift theory, three operational measures are required: evil, influence, and opponents. Since evil is defined to mean negative perceptions of the motives, reasonableness and/or behavior of opponents (Sabatier et al., 1987), this paper uses the same construction variable used for the target population theory. The rationale is that the variable involves an assessment of

the negativity of the performance of different groups, which is a form of behavior, of different groups. In addition, this is nearly the exact measure used by Sabatier et al., (1987) for measuring the original version of the devil shift.

We use the same measure for power in the devil shift theory as used for the target population theory. The rationale is that power was measured as influence, which is the meaning of the concept in the devil shift. Also, this is essentially the same measure of power used by Sabatier et al. (1987) in the original application of the devil shift.¹

The Lake Tahoe questionnaires did not directly ask respondents to identify opponents. Instead, this paper measures opponents by belief differences, thereby it assumes that differences in beliefs equates with whom an actor disagrees with and perceives as an opponent. To identify opponents, this paper takes a three step process. First, a pro-development scale was created (see appendix) that measures the extent to which actors are willing to trade off environmental protection for development in the Lake Tahoe Basin. The pro-development belief scale was then used to cluster all respondents into two belief-based coalitions. The k-mean cluster analysis found a pro-develop coalition with 90 members and a mean of 5.1 in 1984, with 123 members and a mean of 5.0 in 1990, and with 131 members and a mean of 4.9 in 2001. A pro-environment coalition was also found with 110 members and a mean of 1.8 in 1984, with 189 members and a mean of 1.8 in 1990, and with 233 members and a mean of 1.9 in 2001.

¹ It may seem odd that we use the same two variables to represent concepts from two different theories. We, however, consider this to be one of the insightful contributions of this paper – that is, it is possible to use the exact same variables to measure concepts in two different theories with adequate concept-measure consistency and yet the modeling and interpretation of the data are still different.

Respondents within the same belief coalition we call “allies”, and respondents in the other belief coalition we call “opponents”.

The second step was to assign the ten organizations measured by the power and construction variables to one of the two belief coalitions. The pro-development belief coalition includes land developers, property rights groups, local governments, gaming industry, and business associations. The pro-environment belief coalition includes TRPA, Lahontan Regional Water Quality Board, U.S. Forest Service, environmental groups, and the U.S. EPA. See appendix for group means and percent of affiliated respondents associated with both coalitions.

The third step was to model the exaggeration. This was accomplished for power by taking the individual’s reported score for the power variable of an organization in an opposing coalition minus the overall mean score for that opponent by the entire sample of respondents. For example, in 2001 a member of the pro-development coalition might give environmental groups a power score of 90 but the population mean was 68, giving a positive 22 and thus suggesting that this individual is exaggerating the power of environmental groups. The construction variable was calculated by taking the mean score for the entire sample of respondents minus the individual score. For example, the mean score for the construction variable for the entire population of respondents in 2001 was 52 but an individual score for a pro-development coalition member might be 20. Finding the difference by taking the overall mean minus the individual score gives a positive 32, suggesting that this individual is exaggerating the negative construction of their opponent. The hypothetical individual described in this paragraph would have been coded as experiencing the devil shift because the positive scores for the power and construction variables for at least one opponent. Similar calculations were done for allied organizations in the same belief coalition to form the angel shift; that is, the

tendency to exaggerate the power and virtues of allies. Since the devil shift was measured for five pro-development organizations and for five pro-environment organizations, it is possible for respondents to experience just the devil shift, just the angel shift, both, or neither.

To enhance the rigor in testing both hypotheses, several control variables are used and their complete operational definitions are in the appendix. The control variables include pro-development beliefs, commercial and private property ownership, sex, and education.

RESULTS

Theory of Target Populations

In testing the target population theory hypotheses, the first step is to present the means for the construction and power variables. Table 1 shows the mean and standard deviations for the ten groups in 1984, 1990, and 2001. Groups are ranked in order from the most powerful in 1984 (TRPA with a mean of 78) to the least powerful in 1984 (business associations with a mean of 34.24).

-Insert Table 1-

Table 1 shows that the spread of the means tend to be higher for the power variable than for the construction variable. For example, the 1984 power variable ranged from 34 to 78, whereas the 1984 construction variable ranged from 29 to 52. Indeed, across the three datasets, the highest construction mean was about 58 but the highest power variable was about 86. Table 1 also shows that the standard deviations were approximately the same across groups, across the construction and power variables, and over time. The minimum standard deviation ranged from 16 to 32.

From Table 1, a reader could pick out the group categorization of the advantaged, contenders, dependents, and deviants by looking at the means. For example, groups with means greater than 50 for the construction and power variables would be categorized as advantaged. To strengthen the visual categorization of groups from the means and standard deviations, the second step is to plot the group means and standard deviations into the four quadrants with each one signifying one of the classifications in the target population theory: advantaged, contenders, dependents, and deviants. The changes in means scores for the power and construction variables for each group (represented by numbers) were plotted by dots and change over time by vector lines starting in 1984, then to 1990, and finally to 2001 (see Figure 1).

-Insert Figure 1-

Visual inspection of the plots indicates that most groups gained in power and constructions between 1984 and 2001 as the subsystem shifted from adversarial to collaborative. In 1984, three groups were characterized as advantaged, five as contenders, zero as dependents, and two as deviants. In 1990, four groups were characterized as advantaged, four as contenders, zero as dependents, and two as deviants. By 2001, four groups were groups were characterized as advantaged, five as contenders, zero as dependent, and only one as deviant. The two groups moved to a new category: the TRPA shifted from contenders to advantaged and business groups shifted from deviant to contenders.

Eight groups remained in the same quadrant from 1984 through 2001. Of these eight, all but two increased in power, construction, or both. Of those that remained in the same quadrant but experienced gains on either axis include (i) the Lahontan Regional Water Quality Board and the US Forest Service in the advantaged category, (ii) developers, the gaming industry, local government, and property rights groups in the contender category, and (iii) the U.S. EPA in the

deviant category. Only two of these eight groups remained on the same quadrant but decreased on either axis: environmentalists in the advantaged category and property rights groups in the contender category.

The third step taken to test the target population theory hypothesis is to explain the differences in the power and construction variables over time – in relation to a number of control variables – through a series of ordinary least square regression models. The rationale being that shifts in perceived power or construction of groups might reflect shifting beliefs or other demographic characteristics of respondents. Tables 2 and 3 provide ordinary least square regression outputs of the perception of a given group's power and construction, respectively. The three datasets have been pooled with the dependent variable being perceived power (Table 2) and construction (Table 3) of a given group. Among the independent variables are Year 1990 and Year 2001. These year variables indicate the extent of change from 1984 (the baseline year).

The remaining independent variables are controls including pro-development beliefs, advanced degree (1=yes, 0=no), part of the panel (1=yes, 0=no), female (1=yes, 0=no), own commercial property (1=yes,0=no), own private property (1=yes, 0=no). The panel variable controls for those 34 individuals who completed more than one survey. Pro-development beliefs is the only independent variable that is not dichotomous. It includes a battery of three questions asking respondents to weigh their disagreement to agreement on balancing environmental protection and economic development in the Lake Tahoe Basin that were originally asked on a seven-point variable with 1=strongly disagree and 7=strongly agree and combined into a scale by taking the mean. See the appendix for factor loadings and Cronbach's alphas for the pro-development belief variable across the three datasets.

Since the environmental belief variable has been centered, which sets its mean at zero, and the remaining independent variables are dichotomous, the constant is equal to the mean construction or power dependent variable for a given group in 1984 for a particular baseline individual. This baseline individual is a person with mean environmental beliefs, who does not have an advanced degree or own property of any sort, who is male, and not part of the panel. This baseline individual, for example, perceives the power of business as 35 (the constant value first column in Table 2). If this baseline individual were to own commercial property, the perceived power of businesses in 1984 would drop by 6.8 points. This same baseline individual would perceive the power of business by 18 more points in 2001 and by more than 9 points in 1990, from the 1984 baseline value of 35. To assess changes over time, we focus on the Year 1990 and 2001 variables. Positive values for the two year variables, which are the prediction, indicate that a group is more powerful or constructed more positively in 1990 or 2001 compared to 1984. A negative value indicates that the group is less powerful and more negatively constructed in 1990 or 2001 compared to 1984.

The groups are ordered in Tables 2 and 3 by the extent that they gained (winners) or lost (losers) over time on the power and construction variable as indicated by the Year 2001 coefficient. For example, the group that gained the most in 2001 on the power variable (Table 2) was businesses that gained about 18 points. Businesses were also the big winners on the construction variable (Table 3) by gaining about 13 points. The groups that lost the most on the construction variable were U.S. Forest Service (five point drop) and for the power variable were property rights groups (seven point drop).

The results of the regression analysis indicate that there were statistically significant changes in the construction of groups between 1984 and 2001 as the policy subsystem shifted

from adversarial to collaborative. Inspection of the data suggests that while there were some changes in the construction between 1984 and 1990 of different groups, the more significant changes were observed between 1984 and 2001. For example, nine out of the ten Year 01 coefficients were statistically significant and positive in Table 2 whereas only three out of the ten Year 90 coefficients were statistically significant and positive. Only property rights groups were less powerful and constructed more negatively in 1990 and 2001, compared to 1984.

Among the control variables, pro-development beliefs was the most significant in terms of both power and construction. On the power dimension, pro-development beliefs tended to be negatively associated with the power dependent variable by groups likely to support pro-development goals. For example, the gaming industry, developers, local government, business associations, and property rights groups all are negatively associated with power. However, pro-development beliefs were positively associated with the power variable by environmental groups and TRPA. On the construction dimension, the opposite was true, with pro-development beliefs being positively associated with construction by all groups expected to support development (e.g., businesses, local government, developers, gaming industry, and property right groups). Pro-development beliefs were negatively associated with the construction variable by all other groups.

-Insert Tables 3 and 4 -

An additional significant variable on the power dimension that revealed some peculiar trends was ownership of commercial property, which was negatively associated with businesses, developers, and the U.S. EPA. Similar associations occur for the construction dimension. There was an observed pattern in the data indicating that groups classified as being in the contender category, primarily those identified with having pro-development beliefs, tend to rate themselves

as not being powerful, but positively constructed. This finding is peculiar given that that the framework suggests contenders are politically powerful and generally are negatively constructed by the community (Schneider and Ingram, 1997, 108).

In sum, there is strong support for the hypothesis that group perceptions improve in collaborative policy subsystems compared to adversarial policy subsystems. Very few groups lost power or were more negatively constructed after collaborative policymaking emerged. Furthermore, stronger shifts occurred in 2001 than in 1990, suggesting that it may take more than a decade for group perceptions to change.

The Devil Shift Hypothesis

Table 4 presents the number and percents of respondents in a given year who are experiencing the angel shift, no devil or angel shift, mixed devil and angel shift, and the devil shift in 1984, 1990, and 2001. The prediction is that the number of people experiencing the devil shift will have decreased over time.

-Insert Table 4-

Table 4 provides partial support for the hypothesis with the number of actors experiencing the devil shift decreasing from 53% of respondents in 1984 to 44% of respondents in 2001. This provides support that a shift from adversarial to collaborative policymaking will be accompanied by a reduction in the exaggeration of opponent power and negative construction.

Table 4 shows, however, that the angel shift remains at a constant level (less than 10% of respondents across time). However, the number of people experiencing a mixed angel and devil shift increases. One interpretation of this result is that, by open participation rules and shared

access to authority and policymaking, collaborative policymaking empowers all sides of a debate and, therefore, actors are likely to see gains in a mix of both the angel shift as well as the devil shift.

The results from Table 4 are threatened by a lack of control of rival explanations that might explain the changes in the number of respondents experiencing the devil shift, angel shift, mixed, or neither. For example, respondent characteristics may have changed over time, which might explain the changes in devil or the angel shift over time. To account for some of the rival explanations, a multinomial logit model was ran to explain membership in the four categories as outlined in Table 4. Control variables include the same as found in Tables 2 and 3 with the addition of absolute pro-development beliefs. To create this variable, the absolute value of the mean-centered pro-development belief variable was calculated. Therefore, actors with either extreme pro-environment beliefs or pro-development beliefs score high on the scale and actors with moderate pro-development or pro-environment beliefs score near zero. The rationale for including this variable is that people with extreme beliefs are expected to experience more devil shift than people with moderate beliefs.

-Insert Table 5-

The coefficients from the multinomial logit output are difficult to interpret with meaning. Therefore, change in predicted probability for the angel shift (the letter “A” on Table 5), mixed angel and devil shift (M), devil shift (D), and no devil shift or angel shift (N) from changes in the independent variables from zero to one (0/1) or from a one standard deviation change (std). Asterisks (*) indicates a significant relationship ($p < 0.05$) between a change in the range in an independent variable and change in predicted probability between two categories of the

dependent variable. Pseudo R^2 is 0.06. The complete multinomial logit output with devil shift (D) as the baseline can be found in the appendix.

The results from Table 5 support the findings in Table 4 with year 2001 showing a 15% increase in the mixed angel and devil shift category (M) compared to 1984. There is also a 10% decrease in the probability for the devil shift in 2001 compared to 1984 as well as a similar drop in experiencing neither an angel shift nor devil shift. The rise in the angel shift in 2001 is near zero. The results from Table 5 also show the effect from 1984 to 2001 is greater than between 1984 and 1990. The implication is that it may take a decade or more for the results of collaborative policymaking to have a measurable effect on group perceptions.

For the controls, the absolute pro-development belief variable is a significant determinant of the devil shift. A one standard deviation increase in pro-development beliefs is associated with a 15% increase in the likelihood of the experience the devil shift, holding all else equal. Few of the other control variables are significant with the exception of owning or not owning property, which is associated with nearly a 10% decrease in mixed angel and devil shift.

In the final analysis, we find partial support for the devil shift hypothesis with a decrease in the devil shift but not an increase in the angel shift over time. The results do find that respondents are more likely to experience both the angel and devil shift in collaborative policymaking than in adversarial policymaking – suggesting that collaboration tends to benefit both allies and opponents. In addition, there is a stronger effect in 2001 compared to 1990, which suggests that the effects of collaboration on group perceptions may take years to decades to take effect.

CONCLUSION

This paper illustrates two alternate approaches to the rational actor model in measuring the effects of collaborative policymaking. Rather than assuming that actors perceive an unbiased world or process information more or less stochastically, this paper measures the extent that groups are positively constructed and perceived as powerful with the target population theory and exaggerate the power and negative construction of opponents with the devil shift theory. The findings provide strong support for both the target population and devil shift theories and insight into the effects of collaboration on group politics.

For the social construction framework, the results corroborate the hypothesis that the respondents will perceive groups more positively and powerfully after the emergence of collaborative policymaking. This result provides strong support for the arguments that collaborative policymaking leads to better political relations through increased and shared power and through positive views of other actors in the system (DeWitt, 1994; NRC, 1996; Weber, 1998; Beierle and Cayford, 2002; Lubell, 2004b; Sabatier et al., 2005)

For the devil shift theory, the results support expectations for the decrease in the devil shift but not an increase in the angel shift. The theoretical rationale is that collaborative processes involve fair negotiations and the eventual development of trust that erodes exaggerations in the malicious intents of opponents. Additionally, since collaborative processes often involve shared access to authorities, the perceived power of opponents is kept in check and, therefore, the devil shift decreases. The results also show that collaboration leads to an increase in respondents experiencing a mix of both the angel shift and devil shift. One interpretation of this result is that collaborative policymaking leads to increases in the perceived power of both allies and opponents and, thus, neutralizes degenerative competition in the political system.

One path for making advances in science is replication. The data in this paper was deliberately analyzed to compare with the results from a similar analysis of data collected before and after the emergence of collaborative policymaking in a different policy subsystem – specifically before and after CALFED in the San Francisco Bay-Delta (Weible et al., 2009). Given similar operational measures and methods of analysis, the results are different for the target population theory but the same for the devil shift theory. The Bay-Delta paper finds that a majority of groups were *less* powerful after the emergence of CALFED; in contrast, this paper finds that a majority of groups were *more* powerful after the start of collaborative policymaking. Similarly, the Bay-Delta paper finds a majority of groups were perceived more *negatively* after the emergence of CALFED; in contrast, this paper shows a majority of groups are perceived more *positively* after the start of collaborative environmental policymaking. Both the San Francisco Bay-Delta and the Lake Tahoe data showed a decrease in the devil shift after collaborative policymaking began. There are several plausible explanations for these partially contradictory findings, all of which require further analysis. First, collaborative policymaking in the Bay-Delta is centralized with CALFED, whereas in the Lake Tahoe Basin collaborative policymaking is decentralized across several organizations. This may have had the effect of offering additional venues for groups to influence Tahoe policymaking and to develop trust and positive constructions in relation to other groups. Second, the Bay-Delta analysis is different than the current analysis because that survey was conducted just three years after CALFED emerged. This analysis uses surveys in 1990 – almost three years after the Basin reached consensus – and in 2001 – 14 years after the Basin reached consensus. A proper comparison between the two datasets would require us to disregard the 2001 results and to do so would essentially remove many of the significant results – making the results in this paper more

comparable to the Bay-Delta paper. The implications are that changes in group politics might take closer to 10 years than just a few years to emerge.

This paper is not without limitations, three of which are described in hopes of directing future research. First, the social construction framework often describes the construction dimension in relation to the benefits and burdens of policy designs with specific normative labels of target populations. For example, past applications of the target population theory might equate construction with “greedy” or “deservedness” and then associate this construction with the distribution of a policy’s burdens (Hunter and Nixon, 1999; Jensen, 2005). The construction variable used in this paper does not measure the degree that groups are “greedy” or “deserving.” Instead, the construction scale spans a positive and negative continuum with a normative component. We consider these two dimensions, that is, the positive and negative continuum and the normative component, of the construction concept the essential ingredient for operationalizing the concept and the “greedy” or “deservedness” descriptions as specific operational examples of the concept.

The second notable limitation of this paper is that it includes only ten groups as target populations. There are certainly more groups comprising the target populations active in the Tahoe Basin but these ten were the only ones measured in all three surveys. This incomplete analysis of target populations might have shaped the results, for example, it might explain why there were no dependents in Figure 1. Still, this is one of the few applications of the social construction framework that has measured with quantitative measures changes over time.

Finally, the application of the devil shift is hampered by the lack of a direct measure of an opponent. Ideally, the questionnaires would have included questions asking respondents to

identify at least one if not all of their political opponents in environmental policy in the Lake Tahoe Basin. Instead, this paper assumes that respondents who disagree in their pro-development beliefs are opponents. While this measure is conceptually incomplete, we find our approach has face validity in the lineup of allies and opponents.

The rise of collaborative policymaking was partly in the response to create better politics among actively participating groups. While we agree with Koontz and Thomas (2006) who argue that the next research goal in studying collaborative policymaking is to assess improvements in environmental outcomes, we contend that an intermediary step is to examine whether collaborative policymaking is even changing the politics among groups. This paper provides one of the few comparative designs of groups before and after the emergence of collaborative policymaking and finds that the group politics have improved.

APPENDIX

Group Pro-Development Beliefs and Percent Affiliation with Belief Coalitions

2001

Pro-Development Coalition (means, percent of representatives in the pro-development coalition)
 Land developers (4.0, 56%); Gaming industry (5.6, 75%); Local government officials (3.7, 60%); Property rights groups (4.6, 79%); Business Associations (4.4, 81%)

Pro-Environment Coalition (means, percent of representatives in the pro-environment coalition)
 TRPA (2.3, 85%); Lahontan Regional WQB: (1.6, 100%); U.S. Forest Service: (2.1, 100%);
 Environmental groups: (1.9, 86%); U.S. EPA: (2.0, 100%)

1990

Pro-Development Coalition (means, percent of representatives in the pro-development coalition)
 Land developers (4.9, 73%); Gaming industry (5.4, 100%); Local government officials (3.8, 56%); Property rights groups (5.0, 83%); Business Associations (4.6, 81%)

Pro-Environment Coalition (means, percent of representatives in the pro-environment coalition)
 TRPA (2.4, 84%); Lahontan Regional WQB (1.8, 100%); U.S. Forest Service (2.1, 91%);
 Environmental groups (1.6, 97%); U.S. EPA (1.0, 100%)

1984

Pro-Development Coalition (means, percent of representatives in the pro-development coalition)
 Land developers (4.9, 89%); Gaming industry (4.8, 100%); Local government officials (4.0, 59%); Property rights groups (5.7, 100%); Business Associations (4.5, 65%)

Pro-Environment Coalition (means, percent of representatives in the pro-environment coalition)
 TRPA (2.8, 71%); Lahontan Regional WQB (1.3, 100%); U.S. Forest Service (2.3, 100%);
 Environmental groups (1.6, 97%); U.S. EPA (1.0, 100%)

Output from Multinomial Logit Output Explaining Devil Shift

Number of observations = 785. $\text{Chi}^2(27) = 103.67$. $\text{Prob} > \text{Chi}^2 = 0.0000$. Pseudo $R^2 = 0.6$.
 Baseline is the Devil Shift.

Angel Shift	Coef.	Std Err.	Z.	P-Value	95% Conf. Interval
Year 2001	-0.07	0.37	-0.20	0.84	-0.79 0.65
Year 1990	-0.71	0.44	-1.63	0.10	-1.56 0.15
Pro-Dev Beliefs	-0.54	0.21	-2.56	0.01	-0.95 -0.13
Abs. Pro-Dev Beliefs	-1.27	0.27	-4.78	0.00	-1.79 -0.75
Own Comm Property	-0.05	0.44	-0.12	0.90	-0.91 0.80
Own Private Property	-0.32	0.34	-0.95	0.34	-0.98 0.34
Female	0.04	0.37	0.12	0.90	-0.67 0.76
Advanced Degree	-0.14	0.32	-0.45	0.65	-0.77 0.48
Panel	0.39	0.71	0.55	0.58	-1.00 1.78
Constant	2.09	1.01	2.07	0.04	0.11 4.07

Mixed Angel & Devil Shift

Year 2001	0.67	0.23	2.86	0.00	0.21	1.12
Year 1990	0.22	0.25	0.91	0.36	-0.26	0.71
Pro-Dev Beliefs	-0.08	0.06	-1.35	0.18	-0.19	0.04
Abs. Pro-Dev Beliefs	-0.31	0.10	-3.08	0.00	-0.51	-0.11
Own Comm Property	-0.32	0.25	-1.29	0.20	-0.81	0.17
Own Private Property	-0.05	0.19	-0.27	0.79	-0.42	0.32
Female	-0.12	0.20	-0.60	0.55	-0.52	0.28
Advanced Degree	0.05	0.18	0.27	0.79	-0.30	0.39
Panel	-0.01	0.50	-0.03	0.98	-0.99	0.96
Constant	0.03	0.40	0.08	0.94	-0.75	0.82
No Angel or Devil Shift						
Year 2001	-0.33	0.28	-1.15	0.25	-0.88	0.23
Year 1990	0.29	0.27	1.08	0.28	-0.24	0.82
Pro-Dev Beliefs	-0.21	0.08	-2.50	0.01	-0.38	-0.05
Abs. Pro-Dev Beliefs	-0.74	0.13	-5.72	0.00	-1.00	-0.49
Own Comm Property	0.27	0.28	0.97	0.33	-0.27	0.81
Own Private Property	-0.31	0.24	-1.30	0.19	-0.77	0.16
Female	-0.15	0.26	-0.59	0.55	-0.66	0.35
Advanced Degree	-0.18	0.22	-0.82	0.41	-0.61	0.25
Panel	0.56	0.51	1.09	0.28	-0.45	1.57
Constant	1.08	0.50	2.18	0.03	0.11	2.06

1984 Operational Measure Power

Using a thermometer scale, please record the score which indicates the influence of each of the following groups in determining what has happened in the Tahoe Basin over the past 4-5 years. A score of 100 indicated an extremely influential group, and a score of 0 indicates group with no influence at all.

- ___ 1. Land developers and builders
- ___ 2. Gaming industry
- ___ 3. Local government officials
- ___ 4. Tahoe Regional Planning Agency
- ___ 5. Lahontan Regional Water Quality Control Board
- ___ 6. U.S. Forest Service
- ___ 7. Tahoe Conservancy
- ___ 8. Environmental interest groups, e.g. League to Save Lake Tahoe
- ___ 9. Property rights groups, e.g. Tahoe-Sierra Preservation Council
- ___ 10. Business associations, e.g. Chambers of Commerce
- ___ 11. U.S. Environmental Protection Agency

1984 Operational Measure Construction

Although evaluation of an organization's performance may differ according to situation, we are interested in your overall evaluation of the performance of each of the following organizations over the period from 1970 to present, with respect to the kind of Basin you would like to see. On

a thermometer scale for which a score of 100 indicates an extremely good job, and score of 0 indicates an extremely poor job, please assign a score for each organization which best reflects your overall evaluation of that organization's performance over the past fifteen years.

- ___ 1. Land developers and builders
- ___ 2. Gaming industry
- ___ 3. Local government officials
- ___ 4. Tahoe Regional Planning Agency
- ___ 5. Lahontan Regional Water Quality Control Board
- ___ 6. U.S. Forest Service
- ___ 7. Tahoe Conservancy
- ___ 8. Environmental interest groups, e.g. League to Save Lake Tahoe
- ___ 9. Property rights groups, e.g. Tahoe-Sierra Preservation Council
- ___ 10. Business associations, e.g. Chambers of Commerce
- ___ 11. U.S. Environmental Protection Agency

1990 Operational Measure Power

Using the thermometer below, please record the score which indicates the influence of each of the following groups in determining what has happened in the Tahoe Basin since 1980. A score of 100 indicates an extremely influential group, and a score of 0 indicated a group with no influence at all.

- ___ 1. Land developers and builders
- ___ 2. Gaming industry
- ___ 3. Local government officials
- ___ 4. Tahoe Regional Planning Agency
- ___ 5. Lahontan Regional Water Quality Control Board
- ___ 6. U.S. Forest Service
- ___ 7. Tahoe Conservancy
- ___ 8. Environmental interest groups, e.g. League to Save Lake Tahoe
- ___ 9. Property rights groups, e.g. Tahoe-Sierra Preservation Council
- ___ 10. Business associations, e.g. Chambers of Commerce
- ___ 11. U.S. Environmental Protection Agency

1990 Operational Measure Construction

Although evaluation of an organizations' performance may differ according to the situation, we are interested in your overall evaluation of the performance of each of the following organizations over the period from 1980 to the present, with respect to the kind of Basin you would like to see. On a thermometer scale for which a score of 100 indicates an extremely good job, and a score of 0 indicates an extremely poor job, please assign a score for each organization which best reflects your overall evaluation of that organization's performance over the past ten years.

- ___ 1. Land developers and builders
- ___ 2. Gaming industry
- ___ 3. Local government officials
- ___ 4. Tahoe Regional Planning Agency
- ___ 5. Lahontan Regional Water Quality Control Board
- ___ 6. U.S. Forest Service
- ___ 7. Tahoe Conservancy

- ___ 8. Environmental interest groups, e.g. League to Save Lake Tahoe
- ___ 9. Property rights groups, e.g. Tahoe-Sierra Preservation Council
- ___ 10. Business associations, e.g. Chambers of Commerce
- ___ 11. U.S. Environmental Protection Agency

2001 Operational Measure Construction

Below is a list of seventeen organizations (or types of organizations) that have been active in the Basin since 1990. We are interested in, first, your perceptions of the influence of each in determining what has happened in the Tahoe Basin since 1990 and, second, your evaluation of the overall performance of each organization with respect to the kind of Basin that you would like to see. The two criteria may be largely independent of each other. It is entirely possible, for example, that you may evaluate positively what Organization X is trying to do, but view it as being relatively ineffective (uninfluential) in determining what is going on in the Basin. Likewise, you may view an organization as extremely influential, but dislike what is doing. Using any number from 0 to 100, please first record the influence score of each organization where 100 indicates an extremely influential group, and a score of 0 indicates a group with no influence at all. Then please provide an overall evaluation of each group in terms of seeking to bring about the kind of Basin you would like to see on a scale where 100= extremely high rating to 0=extremely low rating.

Infl.	Eval.	
___	___	1. Land developers and builders
___	___	2. Gaming industry
___	___	3. Local government officials
___	___	4. Tahoe Regional Planning Agency
___	___	5. Lahontan Regional Water Quality Control Board
___	___	6. U.S. Forest Service
___	___	7. Tahoe Conservancy
___	___	8. Environmental interest groups, e.g. League to Save Lake Tahoe
___	___	9. Property rights groups, e.g. Tahoe-Sierra Preservation Council
___	___	10. Business associations, e.g. Chambers of Commerce
___	___	11. U.S. Environmental Protection Agency
___	___	12. Nevada Department of Transportation
___	___	13. Transportation agencies, e.g. TTD, CalTrans, NDOT
___	___	14. Transportation and Water Quality Coalition
___	___	15. Native Americans (the Washoe tribe)
___	___	16. Researchers in universities and consulting firms
___	___	17. Local Newspapers and radio/TV stations

Operationalization of Pro-development Beliefs.

In 1984, 1990, and 2001, the following three questions were asked. The answers to these questions categorized respondents as possessing or lacking pro-development beliefs. Respondents were asked to “please circle the response that comes closest to expressing the extent of your agreement or disagreement with the item. 1 indicates strong disagreement and 7 indicates strong agreement” for each: (1) “Protection of water quality requires that regulations be rigorously enforced, even when they create hardships for property owners.” (Scale reversed, Factor loadings: 1984 = .84, 1990 = .86, 2001 = .81); (2) “There is too much concern for restricting growth in the Basin and not enough concern for encouraging it.” (Factor loadings:

1984 = .89, 1990 = .91, 2001 = .84); (3) “We cannot afford to let policies claiming to promote “environmental quality” prevent continued economic development in the Basin” (Factor loadings: 1984 = .89, 1990 = .88, 2001 = .87). Cronbach’s alpha measuring correlation between factors 1984= .85, 1990= .86 , 2001=.79.

Respondents were placed into one of six categories of affiliations (Weible, 2007). “Local Governments” included city and county government employees (elected, appointed, and civil servants), as well as employees of public utility districts (PUDs) and general improvement districts (GIDs). “Regional Governments” consists of board members and key staff of the Tahoe Regional Planning Agency, the Lahontan Regional Water Quality Control Board, and the Tahoe Conservancy, as well as some members of miscellaneous regional organizations, such as the Forest Health Consensus Group. Elected, appointed, and civil service employees of the federal government, the State of California, and the State of Nevada are included in “State/Federal Governments.” The “Environmental Groups” category constitutes people whose primary connection in relation to Lake Tahoe issues is holding a leadership position in the League to Save Lake Tahoe or some other environmental non-profit, while “Business/Property Rights Groups” includes leaders of various chambers of commerce, homeowners associations, boards of realtors, and the Tahoe Sierra Preservation Council. Finally, “Scientists” is comprised of university researchers and employees of private consulting firms.

Operationalization of Advanced Degree. In 1984, 1990, and 2001, the following question was asked: “Please indicate the highest level of education you have attained:” (please check) 1=Not a high school graduate; 2=High school graduate; 3= Some college; 4=College graduate; 5=Advanced degree.

Operationalization of Panel. We identified 34 individuals in the panel from past mailing lists.

Operationalization of Female. In 1984, the following question was asked: “Sex:” (please check) 1=Female; 2=Male. In 1990, the following question was asked: “Your Sex:” (please check) 1=Female; 2=Male. In 2001, the following question was asked: “Your Gender:” (please check) 1=Female; 2=Male.

Operationalization of Own Commercial Property. In 1984, 1990, and 2001 the following question was asked: “Do you own commercial or investment property in the Lake Tahoe Basin?” (please check) 1=Yes; 2=No.

Operationalization of Own Private Property. In 1984, the following question was asked: “What type of residence, if any, do you have in the Tahoe Basin?” (please check) 1= Permanent residence; 2=Second or vacation home residence; 3=More than one Basin residence; 4=Lot(s) with no dwelling; 5=None. 1-4 were coded as a 1, and 5 was coded as a 0. In 1990 and 2001, the following question was asked: “What type of residence (if any) do you have in the Tahoe Basin?” (please check) 1=Permanent residence; 2=Lot with no dwelling; 3=Both a principal and second home in the Basin; 4=Second or vacation home residence; 5=None. 1-4 were coded as a 1, and 5 was coded as a 0.

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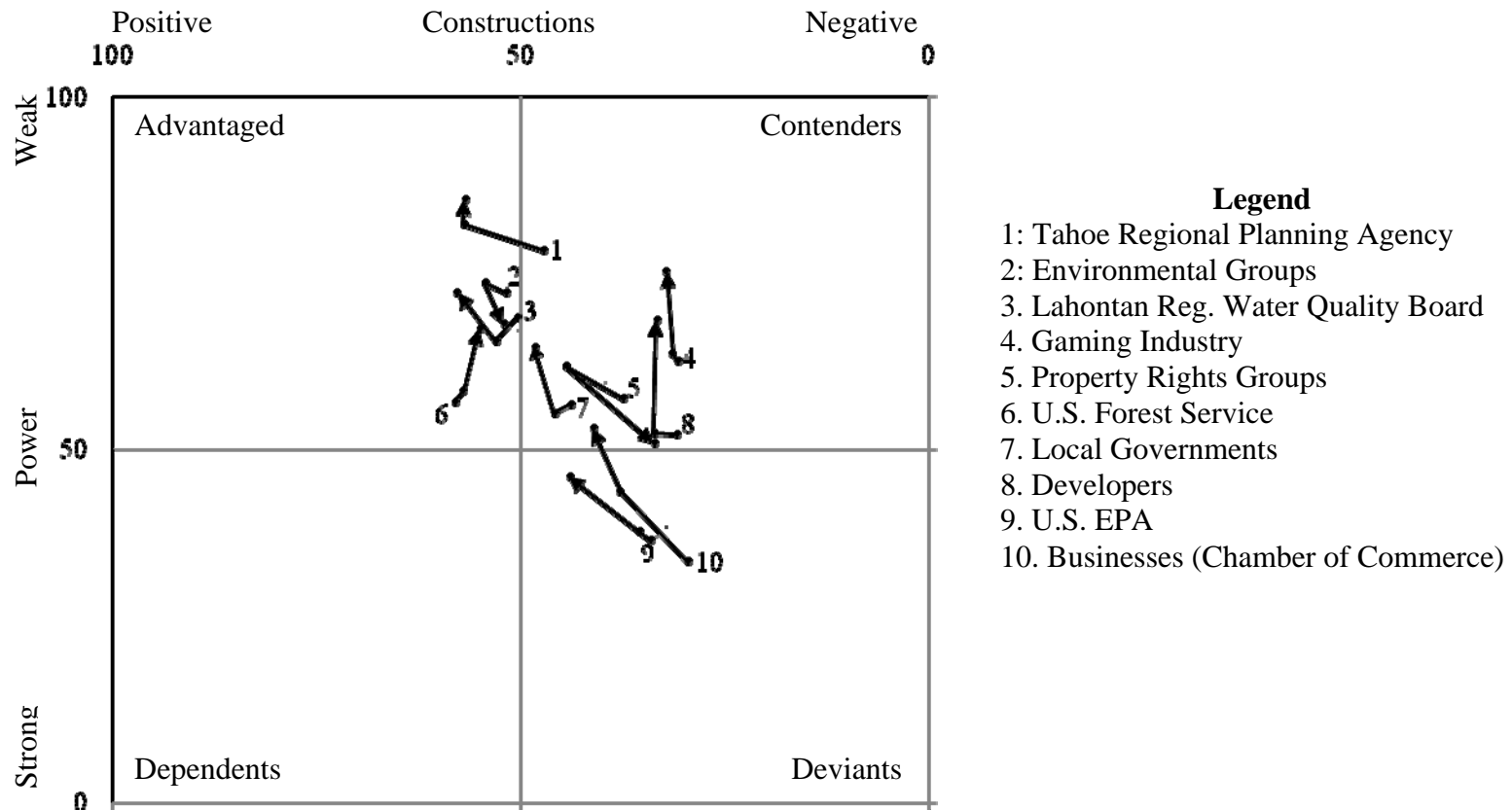
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Table 1: Mean (Standard Deviations) for the Power and Construction Dimensions

	1984		1990		2001	
	Power Mean (Std. Dev.) ^a	Construction Mean (Std. Dev.) ^b	Power Mean (Std. Dev.) ^a	Construction Mean (Std. Dev.) ^b	Power Mean (Std. Dev.) ^a	Construction Mean (Std. Dev.) ^b
1. Tahoe Reg. Planning Assoc.	78.21 (19.31)	47.42 (26.97)	81.86 (19.23)	57.21 (26.27)	85.53 (16.31)	57.05 (25.15)
2. Env. Groups.	70.21 (21.60)	51.93 (32.47)	73.61 (21.10)	54.67 (30.34)	67.76 (22.50)	52.34 (29.38)
3. Lahontan WQCB	68.68 (22.62)	50.64 (28.19)	65.40 (23.64)	53.28 (24.59)	72.24 (21.80)	57.75 (26.79)
4. Gaming Industry	62.48 (28.92)	31.09 (29.16)	63.66 (26.27)	31.37 (25.58)	75.15 (22.12)	32.14 (24.48)
5. Property Rights Groups	57.31 (24.10)	37.89 (29.61)	61.84 (22.27)	44.76 (27.27)	51.88 (22.82)	31.95 (24.83)
6. U.S. Forest Service	56.66 (24.66)	58.30 (26.55)	58.40 (24.08)	57.00 (23.48)	68.62 (20.45)	55.26 (23.33)
7. Local Government	56.47 (24.65)	44.10 (26.95)	55.23 (23.31)	46.12 (23.88)	64.44 (21.05)	48.48 (22.24)
8. Land Developers	52.24 (31.90)	31.12 (26.50)	52.42 (27.98)	33.86 (24.86)	68.39 (25.78)	32.15 (23.80)
9. U.S. EPA	36.96 (26.52)	32.39 (26.13)	38.39 (25.84)	33.72 (24.93)	46.24 (25.37)	44.21 (26.69)
10. Business Associations	34.24 (23.02)	29.83 (24.84)	44.06 (23.28)	37.79 (24.24)	52.99 (23.23)	41.35 (24.34)

^a(0 = not influential, 100 = very influential)^b(0 = negative evaluation, 100 = positive evaluation)

Figure 1. Shifts in Social Construction and Power of Target Populations in 1984, 1990, and 2001.



Note: Lines indicate shifts in power and constructions of target populations represented by numbers one through ten. The lines start at 1984 with a number at the first dot, then 1990 by the second dot, and, finally, 2001 by the last dot ending with the arrowhead.

Table 2: Regression Results for Power

	Winners ← → Losers									
	Businesses	U.S.F.S.	Developers	Gaming Industry	U.S. EPA	TRPA	Local Govt	Lahontan Regional Govt	Env. Groups	Property Rights Grps
Constant	35.13***	55.34***	58.10***	63.50***	41.79***	79.68***	59.68***	67.43***	65.12***	56.59***
Year 01	17.63***	12.04***	11.9***	10.80***	8.36***	7.06***	6.00**	5.05*	-.55	-6.59**
Year 90	9.48***	2.24	-2.87	-1.02	1.56	4.85**	-1.88	-2.60	4.35*	3.70*
Pro-Dev	-2.63***	-0.48	-9.21***	-5.72***	1.04	1.46***	-4.45***	0.83	1.63***	-3.73***
Adv Deg Own Commercial Property	-2.15	-0.68	-.90	.27	-4.40*	-2.47	-1.98	-1.65	1.19	0.54
Own Private Property	-6.86**	-3.01	-9.28***	-2.9	-6.74***	-0.67	-1.19	-1.02	-2.61	-1.89
Female	1.61	1.19	-2.4	0.90	-5.84**	1.00	-2.79	1.94	5.31***	1.08
Panel	2.71	4.169*	3.5*	3.22*	7.97***	2.13	1.16*	3.46*	4.44*	3.98*
	2.61	5.53	-3.9	-2.07	4.65	2.28	5.96	2.39	8.24*	10.67**
Adj. R^2	0.14	0.06	0.40	0.19	0.06	0.06	0.13	0.03	0.05	0.11
F(p-value)	17(.000)	7.3(.000)	69(.000)	25(.000)	5(.000)	74(.000)	16(.000)	4(.000)	6(.000)	12(.000)
n	786	800	804	808	763	793	796	770	794	778

*p<0.10, **p<0.01, ***p<0.001

Table 3: Regression Results for Construction

	<u>Winners</u> <u>Losers</u>									
	Business es	U. S. EPA	TRPA	Local Govt	Develope rs	Lahontan Regional Govt.	Gaming Industry	Env. Groups	Property Rights Grps	U.S.F.S.
Constant	30.34***	38.00***	52.57** *	47.32***	30.69***	52.61***	32.91***	52.66***	36.24***	61.21***
Year 01	12.56***	9.19**	7.25***	6.15**	4.59*	4.57*	3.56*	-3.42*	-4.10*	-5.09*
Year 90	8.25***	-0.11	8.19***	3.73*	6.08**	0.98	2.53	-0.72	8.95***	-2.40
Pro-Dev	5.31***	-3.48***	-6.81***	5.05***	7.28**	-7.40***	8.14***	-13.00***	6.45***	-4.15***
Adv Deg	-5.25**	-2.42	-2.72	-4.88**	-2.1	-1.77	0.42*	1.44	-3.88**	-2.09
Own Commercial Property	-3.91*	-6.90**	-.36	-2.20	-1.34	-4.75*	-1.87	-4.40*	3.58	-4.45*
Own Private Property	1.79	-5.31**	-3.09	-3.89**	-3.29*	1.69	-6.72***	3.34*	-0.80	-0.19
Female	2.61	-5.46*	-1.09	1.91	-0.56	1.65	.91	1.40	4.56*	0.38
Panel	1.34	1.24	1.81	1.53	-0.88	-1.28	-11.63**	2.11	13.58**	3.76
Adj. R^2	0.16	0.14	0.19	0.14	0.22	0.22	0.22	0.48	0.22	0.08
$F(p$ - value)	19(.000) 765	15(.000) 735	23(.000) 798	16(.000) 779	29(.000) 781	27(.000) 757	29(.000) 785	91(.000) 782	28(.000) 756	10(.000) 788

*p<0.10, **p<0.01, ***p<0.001

Table 4: Number and Percent of Respondents Experiencing the Angel Shift, Devil Shift, Mixed, or None over Time

	1984	1990	2001	Total
Angel Shift	15 (8.0%)	11 (3.9%)	28 (8.2%)	54 (6.7%)
No Devil or Angel Shift	35 (18.6%)	63 (22.5%)	40 (11.7%)	138 (17.0%)
Mixed Angel and Devil Shift	38 (20.2%)	69 (24.6%)	124 (36.2%)	231 (28.5%)
Devil Shift	100 (53.2%)	137 (48.9%)	151 (44.0%)	388 (47.8%)
Total Count	188 (100.0%)	280 (100.0%)	343 (100.0%)	811 (100.0%)

Table 5: Changes Predicted Probabilities in the Angel Shift, Devil Shift, Mixed, or None

Year 2001:0/1*	DN	A		M	
Year 1990:0/1*		DA		NM	
Pro-Dev Beliefs:std*		A	N	M D	
Absolute Pro-Dev Beliefs:std*		N	A	M D	
Own Comm. Property:0/1*		M		A D N	
Own Private Property:0/1			N	A M D	
Female:0/1			MN	A D	
Advanced Degree:0/1			N	A D M	
Panel:0/1		DM	A	N	
	-0.20%	-0.10%	0	0.10%	0.20%

Change in predicted probability for the angel shift (A), mixed angel and devil shift (M), devil shift (D), and no devil shift or angel shift (N) from changes in the independent variables from zero to one (0/1) or from a one standard deviation change (std). Asterisks (*) indicates a significant relationship ($p < 0.05$) between a change in the range in an independent variable and change in predicted probability between two categories of the dependent variable. Psuedo $R^2 = 0.06$. Number of observations = 785. The complete multinomial logit output with devil shift (D) as the baseline can be found in the appendix.