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A Q methodology Analysis of Individual Perspectives of Public Decision Making Influences of Collaborative Processes

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2012

Abstract

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by

Perry D. Gross

MA, California State University, Sacramento, 2004

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Dissertation Submitted in Partial Fulfillment

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Abstract

Suboptimal public policy formulation and implementation often result from traditional representative democratic practices. Increasing government fragmentation, eroding trust among policy actors, and an increasingly complex policy making environment contribute to this problem. Collaborative decision making is considered to be a pragmatic alternative by its advocates. The purpose of this research was to explore the claim that process dynamics lead participants to prefer collaborative approaches to decision making among local and regional transportation plans in a western state. The conceptual framework was the diversity, interdependence, and authentic dialogue (DIAD) theory-based model of collaboration in decision making. The research questions focused on collaboration participants' perspectives of public decision making, variability of views among collaboration groups, and preferences for collaborative approaches to public decision making. This study employed Q methodology and a 45-statement Q sample about public decision making structured with a 2 X 3 Fisherian research design. Fifty-four Q sorts were collected from two groups of DIAD theory-based collaborative participants and one group of collaborative support professionals. Ten first-order factors were identified among these three groups and used in a second-order factor analysis to identify the higher order views of collaborative, personal-public, and professional-public decision making. Key findings were that study participants support collaborative approaches to public decision making. Study results provide collaboration facilitators with insight into participant views of decision making. The implications for social change are the generation of the deliberative capacity fundamental for democratic societies and increasing civic capacity-building.

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Dedication

This one is for my best friend: Robert "Bob" Calloway. You may have left this physical world three years ago but I know you are with each and every one of us every day. Thank you for helping me learn about the journey of life; the love of a good dive for breakfast (long before *Diners, Drive-ins, and Dives*), the experiences of advocating roundabouts, the satisfaction of *raising the barn* with friends, the nourishment of good conversation, the delight in taking a nap (brown out), the power of dreaming big and achieving (the Big four o), the constant joy of learning about everything (Dutch oven cooking, BBQ, home brewing, wood working, and on and on), the need to question our perceptions, and the importance of relationships. You showed me how to embrace the opportunities life presents and appreciate "the journey is the destination" (Life is Good, Around 2005).

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Chapter 1: Introduction to the Study

Collaborative governance applies in many situations in which multiple actors from local, regional, state, and federal governments, the private and nonprofit sectors, and civil society work cooperatively to overcome challenges in governance. Examples include collaboratives engaged in the delivery of public goods and services (Gazely, 2010); interagency cooperation (Koliba, Mills, & Zia, 2011; Koliba & Zia, 2009); and public engagement, deliberation, and dialogue (Laurian & Shaw, 2009). Essentially, collaboration emerges among diverse actors from a mutual desire to achieve goals beyond what any single actor is capable of achieving alone. Collaboratives are not born of altruism but of pragmatic problem solving among individuals and organizations (Innes & Booher, 2010). The study of collaboration has been organized into content, process, and authority (Innes & Booher, 2004; Hibbert & Huxham, 2010). In this context, *content* refers to the diverse range of social problems, such as the environment (Booher & Innes, 2010), planning (Hou & Kinoshita, 2007), and social service delivery (Gazely, 2010), for which collaboration has become a pragmatic approach to governance. The *process* concerns the environments in which collaborative participants engage each other such as arrangements for dialogue (Dryzek, 2009), means of identifying information (Booher & Innes, 2010), or even trust (Leach & Sabatier, 2005). Finally, *authority* refers to arrangements that provide legitimacy for the collaborative efforts and results (Dryzek, 2009; Hibbert & Huxham, 2010). Collaborative governance practitioners have reported that participants favor collaborative public decision making (Booher, 2004; Booher & Innes, 2010). However, these self-referential claims have not been independently verified or the dimensions of these participants' perspectives explored.

This study focused on process by examining diverse participants engaged in collaborative governance processes at the local and regional level and assessing their perspectives of public decision making The following introduction to this study: (a) provides background information; (b) articulates the research problem, purpose, and questions; (c) establishes the design of the research and the interpretive framework; and (d) concludes by highlighting the work to be accomplished in subsequent chapters.

Background

One particular type of collaborative governance process strives to bring diverse, interdependent policy stakeholders together to engage in problem solving through authentic dialogue (Booher & Innes, 2002, Innes and Booher, 2003a). The Center for Collaborative Policy (CCP), a nonprofit affiliated with California State University, Sacramento, has adopted this approach and organizes these conditions as the DIAD theory of collaboration, representing the diversity, interdependence, and authentic dialogue model of collaboration (CCP, 2010). These processes have emerged in diverse policy domains including watershed management, transportation planning, end-of-life issues, and social service delivery. This theory was introduced in 2002 with advocates and collaborative practitioners continuing to call for its use in collaborative planning, policy making, and governance because of its normative and explanatory capacity to cope with contemporary complex issues and the potential emergent behaviors such processes produce (Booher & Innes, 2002, 2010). Of particular interest is the behavior, observed by Innes and Booher (1999a), of collaborative process participants who self-reported a preference for collaborative public decision making. Identifying those self-reported

preferences and interpreting their meaning would be invaluable for gaining insight into governance.

Understanding the importance of the DIAD theory-based approach to collaboration stems from how it pragmatically copes with the current ineffectual state of public policy formulation and implementation in representative democratic practices (Dryzek, 2009). Decision makers involved in public policy formulation processes have experienced increasing fragmentation resulting from the dispersal of governing authority (Dryzek, 2009). Trust continues to erode between traditional policy actors, consisting of elected officials, bureaucrats, policy elites, special interests, and the public (Yanow, 2009). In the face of these challenges, suboptimal policies often result. The formal structure of representational democracy appears unable to generate public policy to meet the increasing complexities of the public policy making environment (Dryzek, 2009). Further, researchers have found that public confidence and trust in government at all levels to deal with modern social issues, such as the environment, economic development, and planning, are failing (Innes & Booher, 2004; Yanow, 2009). Scholars from multiple academic fields have argued that the expert-based, majoritarian processes of traditional, public policy formulation, at all levels of government, have not met all policy stakeholder needs (Dryzek, 2009; Innes & Booher, 2004; Niemeyer, 2011). Formal governments are slow to respond to the need for more pragmatic, results-oriented governance.

Operating in parallel with formal structures of representational governments at local, regional, state, and federal levels are cooperative, collaborative governances emerging when affected stakeholders respond to public problems (Ansell & Gash, 2008;

Dryzek, 2009). Cooperative responses by stakeholders responding to seemingly intractable public problems have taken on different forms based on the context in which they have been employed (Fung, 2006). For example, during the 1990s, state and federal water stakeholders in California responded cooperatively to form CALFED to adaptively cope with the complex often intractable issues of California's water supply resulting in a comprehensive, cooperative water and ecosystem management program (Booher & Innes, 2010). These cooperative approaches are pragmatic and contextual, and they seek solutions that provide mutual gains for stakeholders coping with modern complex problems (Delbridge, 2007). Essentially, these practical approaches to modern governance show promise in coping with society's ongoing intractable issues.

Regrettably, scholars and practitioners have criticized collaborative governance for lacking efficacy and accountability (Ansell & Gash, 2008). Typically these criticisms focus on the comparison of traditional liberal democratic theories and practices, which are usually described in deterministic, causal terms (Dryzek, 2009). Collaborative planning, policy making, and governance are not a priori theoretical frameworks; therefore, researchers have focused on theoretical frameworks for understanding collaborative dynamics (Innes & Booher, 2004). These criticisms should be expected, considering that both traditional and collaborative forms of governance exist in parallel at all levels of government.

A lack of broad understanding of collaborative governance's complex and adaptive process dynamics contributes to criticisms of efficacy. More specifically, critics have pointed to process unpredictability (Agger & Lofgren, 2008; Ansell & Gash, 2008; Weir, Rongerude, & Ansell, 2009). Collaboration researchers and theorists addressed this

unpredictability by recognizing the nonlinear dynamics of complex situations (Koliba & Zia, 2009). These dynamics have produced beneficial, nontraditional outcomes across the reach of collaborations' response to ineffectual government. This study will explore one specific claimed outcome: preferences for collaborative public decision making.

Problem Statement

Through experiences, collaborative practitioners who facilitate collaborative processes have identified a tendency for individual participants to self-report preferences for collaborative public decision making. Practitioners have further suggested these preferences emerge from the complex dynamics of collaborative processes (Booher & Innes, 2004, 2010). These collaborative processes are argued to emulate complex adaptive systems (CASs) (Innes & Booher, 1999a). Parallel research on other types of collaboration has reported similar relationships often discussed in terms of increased trust or reciprocity (Gazely, 2010; Leach & Sabatier, 2005). Throughout the literature on this topic, however, there has not been a singular focus on the specific nature of these individual preferences for collaborative public decision making. No study has concentrated on the subjective, operant perspectives under which individuals were operating when they self-reported their preferences. This study addressed this gap in the literature by exploring these individual perspectives. Insight into individual perspectives about collaborative public decision making potentially improves a collaborative practitioner's capacity for generating deliberative democratic norms for societies' stakeholders striving for improved public policy outcomes.

Nature of the Study

This research used Q methodology analysis to explore the perspectives of diverse multisector stakeholder participants in two P sets comprised of participants in DIAD theory-based collaborative processes. Further, the Q methodology was extended to an additional P set of individual consultants who provide profession support services for public decision making including collaborative decision making. Each of these three P sets operated in Northern Nevada: the Interstate 80 (I-80) Corridor Study Group (I-80 SG), the United States 50 (US 50) East Corridor Study Stakeholder Working Group (US 50 SWG), and the technical public decision making support team (PDMST).

Two related features of collaboration research and theory informed the nature of this study. The first feature used as the conceptual framework for the study was DIAD theory-based collaboration which informs the technical elements of Q technique. This feature of the study informed the generating of a concourse and Q sample about public decision making. This feature further included rational for P set selection, conditions of instruction, and procedures for identifying operant factor structures. The second feature of collaboration research and theory used for an interpretive framework drew on the literature concerning underlying collaborative process dynamics. This literature was organized into an interpretive framework that provided different vantage points for exploring factor interpretations, collaborative participants' potential lived experiences, and eventually operant subjectivity.

More specifically, with the conceptual framework provided by the first feature of collaboration research and theory, DIAD theory-based collaboration, Q-methodology's technical elements were undertaken (Booher & Innes, 2002, Innes & Booher, 2003a).

This view of collaboration arranges the practice into three domains: content, process, and authority (Innes & Booher, 2003a; 2004; Hibbert & Huxham, 2010). Each of these domains is arguably elements of the decision making process (Hibbert & Huxham, 2010; Morçöl, 2007). Further, this view of collaboration views the world as on organism and not a machine (Innes, Connick, & Booher, 2005).The world as a machine is linear, static, and predictable. The world as an organism is nonlinear, dynamic, and unpredictable (Innes & Booher, 2005). The dimensional causes of worldview and public decision making domains provided the 2 x 3 effects matrix for this study's Fisherian design of the Q sample detailed in Chapter 3 (Stephenson, 1994). Chapter 2 details the theoretical underpinnings of DIAD theory-based collaboration and its use as this study's conceptual framework. Chapter 3 further details the first- and second-order factor analysis to be undertaken.

Finally, the literature on collaborative process dynamics provided an interpretive framework. This was crucial since exploring collaborative participants' potential lived experience while interpreting factors relied on describing underlying collaborative dynamics. The lived experience is essential in Q-methodology, which was developed by Stephenson in 1935 to study human subjectivity and how subjectivity becomes operant within individuals (Ramlo & Newman, 2011; Wolf, 2009). Q technique provided a window into individual perspectives about public decision making in the form of operant factor structures (Stenner, 2009). Ultimately, however, answering the research questions required *abductive* reasoning, a feature of Q methodology (Ramlo & Newman, 2011; Stephenson, 2007, Wolf, 2009). Previous phenomenological research established the potential relationship dynamics between participation in collaborative processes and self-

reported preferences for collaborative public decision making (Booher, 2004; Booher & Innes, 2002; Innes & Booher, 1999a; Innes & Booher, 2003a). These dynamics are broadly organized among the research literature into collaborative governance, subjective communication, and complexity science for this interpretive framework (Booher & Innes, 2002; Innes & Booher, 1999a, 2003a, 2003b). Exploring the underlying process dynamics identified by researchers enhanced interpreting the operant factor structures revealed through Q technique. This accounts for "Stephenson's theory of subjectivity" in which "the patterns are indicative manifestations of a person's predisposition to act based on lived experiences": collaborative experiences (Wolf, 2009, p. 8). Ultimately, the use of abductive reasoning focused less on formal theory or deductive reasoning and more on sense making and inductive reasoning (Stephenson, 2007). The beginning point for this sense making lay in interpretive framework articulated for this study.

Research Questions

This study explored three questions:

1. What are collaboration participant perspectives of public decision making?

2. Do collaboration participant perspectives of public policy decision making vary between collaboration groups?

3. Do collaboration participant perspectives support collaborative public decision making?

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Purpose of the Study

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The purpose of this study is to improve understanding of the dimensions of individual perspectives of public decision making in light of expanding collaborative practices. Specifically, an exploration the perspectives of individuals who voluntarily

participated in collaborative oriented activities: two facilitated DIAD theory-based processes. A third group of individuals supported public decision making including collaborative processes. By identifying individual perspectives, insight was gained into the often emergent nature of these perspectives as individuals engage in collaborative practices. Ultimately, the purpose of this study was to provide collaborative practitioners with improved insights about the public decision making perspectives individual participants engaged in collaborative processes posses, thus improving their ability to facilitate these collaborative groups.

Interpretive Framework

Using Q methodology provided the quantitative statistical means to access the perspectives of individuals as well as a collective of individuals. However, the sense making undertaken established these operant subjective views by employing abductive reasoning. Abductive reasoning situates the reasoning process from a narrowed yet not completely certain perspective, informally called a hunch or aha moment or more formally as instinctive insight (Brown, 1980, p. 31; Ramlo & Newman, 2011; Stephenson, 2007; Wolf, 2009). In this research project, the abductive reasoning and potential for instinctual insights were attempted from an interpretive framework advanced by collaborative practitioners to explain the underlying dynamics associated with collaboration (Booher & Innes, 2002; Innes & Booher, 1999, 2003a). This interpretive approach is consistent with Stephenson's study of subjectivity by focusing on potential lived experience and less "on interpretation of patterns which can be presented with the aid of substantive theory alone, in which case the relevant theory relates to the topic of interest in the community studied not to the nature of subjectivity" (Wolf, 2009, p. 9).

Therefore, the "role of the inquirer may be to abduct-to propose something new, or to *discover* (original emphasis)-to find what is there" (Wolf, 2009, p. 26). The purpose of the interpretive framework for this study was not to establish theoretical patterns for interpreting factors. The purpose was rather to enrich the interpretations of factors by gaining access into potential individual lived experiences and hopefully, through abduction, the subjectivity.

Collaborative practitioners have identified three broad fields of study that assist them in explaining the dynamics of collaboration: collaborative governance, subjective communication, and complexity science. Each of these areas of study recognizes the contextual, nonlinear, and interrelated nature of each endeavor which collaborative practitioners identify as underlying collaborative dynamics (Booher & Innes, 2002, 2004; Innes & Booher, 1999a, 1999b, 2003a, 2003b 2010). Having three vantage points for exploring potential individual lived experiences while interpreting factors provided ample robustness for generating instinctual insights and discovering what is there. While chapter 2 provides a broader perspective for the three vantage points of the interpretive framework, a brief overview is provided here.

Collaborative governance applies to many situations in which multiple actors work cooperatively to overcome challenges in governance. Examples include collaboratives engaged in the delivery of public goods and services (Gazely, 2010), interagency cooperation (Koliba & Zia, 2009), and public engagement, deliberation, and dialogue (Laurian & Shaw, 2009). Collaboration is a pragmatic response for ineffectual governing and the modern separation of deliberative democracy from representation democracy (Dryzek, 2009). Collaborative governance is criticized for its unpredictability,

lack of accountability and potential for coopting participants (Agger & Löftgren, 2008; Webster, 2008; Yanow. 2009). Advocates respond arguing that from an organistic complex view of the same situations, genuine collaboration provides emergent, creative, and adaptive responses to public policy issues (Booher, 2004; Booher & 7 Innes, 2002; Innes & Booher, 2003a). These attributes are central to the complex nature of genuine collaboration and the subjective communication upon which collaborative processes rely.

Concepts and ideas about subjective communication lie at the center of collaborative dynamics, complexity science, and the scientific study of subjectivity provided by Q-methodology. The nature of communication and ultimately knowledge has been unduly influenced by Descartes' separation of mind and matter with the resulting overemphasis for scientific reductionist thought (Dryzek, 2009; Yanow, 2009). Political and public policy theorists have turned their attention to the process of communication in policy formulation. Emerging thoughts about communication seek to understand its dynamics in facilitating additional ways of knowing and the creation of knowledge (Chettiparamb, 2006; Dryzek, 2009, 2010; Hatch & Yanow, 2008; Yanow, 2009). Many of these emerging ideas are germane in the scientific study of subjectivity in which communication reveals common "shareable knowledge known to everyone" and accessible through the interpretation of factors (Stephenson, 2007, p. 101). Exploring shareable knowledge lies centrally in collaborative governance and CAS dynamics.

Complexity science, which is the study of physical, biological, and socially complex systems, is increasingly integrated into public policy and public administration theories. Applications include, but are not limited to, planning, policy formulation, organizational, and leadership theories (Morçöl & Wachhaus, 2009). Of particular

interest are CASs. The concept of CASs has sufficiently developed from the study of natural and biological systems that a framework is available for application in the study of social systems (Innes & Booher, 1999a). Properties of CASs include independent autonomous agents, simple interaction rules, nonlinear relationships, sensitivity to initial conditions, and amplifying and dampening feedback loops (Rhodes & Murray, 2007; Wagenaar, 2007). Emergent behaviors include *dissipative structures* that nonlinearly transfer events leading to amplified *cascading events* and eventually leading to new *fitness landscapes* in which the system generates new local optimal conditions (Goldstein, Hazy, & Silberstang, 2008; Wagenaar, 2007). Central to both properties and emergent behaviors of CASs, as well as collaborative governance, is subjective communication interactions between independent system agents.

Taken together, collaborative governance, subjective communications, and complexity science literature provided three distinct yet related vantage points for exploring potential lived experiences for collaborative participants. Collaborative practitioners have connected these avenues of study with underlying collaborative dynamics as a way to understand the contextual nature of collaboration. Each potential hunch or aha moment encountered in the interpretation of factors benefited from the robustness of three theoretical perspectives to find what is there.

Operational Definitions

The following are operational definitions.

Abductive reasoning seeks insights by using hunches about a situation to explore it more deeply (Brown, 1980).

Concourses are the gathered substrate prompts meant to represent the totality of the issue under consideration (Brown, 1980).

DIAD refers to diversity, interdependence, and authentic dialogue as part of a normative theory of collaborative processes (Booher & Innes, 2002).

Facilitated collaborative processes are collaborative engagements led by a facilitative leader who maintains the conditions of authentic dialogue (Innes 7 Booher, 2004).

A *P set* is comprised of individuals experiencing the phenomenon under consideration. For a single case, this would be one individual's different versions of the phenomenon based on different conditions of instruction (Stephenson, 1977).

The *Q sample* of prompts is identified from the concourse of prompts routinely using a Fisher theoretical research matrix (Stephenson, 1994).

Q sort conditions of instruction provide the situatedness for individuals to undertake the sorting task (Brown, 1980)

Q sort statistical analysis including correlations, factors, factor rotations, and factor scores provide the means to identify operant factor structures (McKeown & Thomas, 1988)

Q technique is the generation of a concourse, selection of a Q-sample, collecting of Q-sorts, and the statistical procedures used to identify an operant factor structures. The interpretation of these structures is not typically highly interpretive and focuses on perspectives or discourse rather than operant subjectivity (Stenner, 2009, Wolf, 2009).

Assumptions

In conducting the proposed study, I assumed that: (a) DIAD theory-based collaborative process conditions were met within the collaborative planning groups and that CAS dynamics were emulated, (b) participants formed subjective perspectives about public decision making, and (c) the participant perspectives could be communicated and made operant.

Limitations

The following were limitations for this research: (a) paraphrasing of concourse statements from a single comprehensive source might have introduced researcher bias, (b) participation in the collaborations studied was voluntary and uncontrolled, and (c) results were limited spatially and temporally to the context studied.

Significance of the Study

This research focused narrowly on a particularly intriguing potential attribute of participating in DIAD theory-based collaborative processes: practitioner claims of individual self-reported perspectives supporting collaborative public decision making. By beginning a rigorous and detailed exploration, this research aimed to fill the following gaps in the literature: (a) establish an initial estimation of the perspective dimensions collaborative participants possess about public decision making and (b) provide independent empirical support for practitioner claims that participants prefer collaborative public decision making which were identified through other research methodologies.

The results of this study provided collaborative practitioners additional insight into collaborative participants. These insights were crucial for practitioners assisting

groups engaged in contextual sense making while operating in complex dynamical situations. Ultimately, this research assisted collaborative governance practitioners to improve public policy formulation processes and highlight potential capacity building outcomes. Further, since participants in facilitated collaborative process learn to favor and support such processes, positive social change, in the form of increased civic capacity to cope with complex modern issues, was possible. Essentially, collaborative success breeds more collaborative success.

Summary

This research was intended to provide better understanding of individual perspectives of public decision making for participants in collaborative governance. These processes can be engaging and dynamic often leading to emergent system properties. Employing Q methodology provided access to explore the practitioner claims that participants favor collaborative public decision making. Ultimately, insight into participant perspectives on public decision making improves collaborative processes leading to more optimal public policies thus providing positive social change (Booher, 2004, p. 44). The more information and improved theories collaborative practitioners develop through research, the better set of skills and insights they generate in facilitating collaborative undertakings.

Foremost, this research was a Q methodology study, which ultimately shaped its form. As such, Chapter 2 explores the literature to establish two frameworks. The first framework established the dynamics of collaboration and specifically DIAD theory-based collaboration. This first feature of collaboration provided the conceptual framework which guided the technical aspects of this application of Q-methodology. The

collaboration literature was reviewed to establish the interpretive framework based on the underlying dynamics of collaborative governance, subjective communication, and complexity science. This interpretive framework deepened the factor interpretation by providing a working explanation of lived experiences, improving abductive reasoning, and ultimately uncovering operant subjectivity. Chapter 3 addresses the technical attributes and issues of employing Q methodology in this research: (a) concourse development, (b) Q sample of statements, (c) conditions of instruction, (d) identification of P sets, (e) collection of Q-sorts, (f) details of the first- and second-order factor analysis, (g) ethical treatment of subjects, and (h) role of the researcher. Chapter 4 details the technical results of Q-methodology. Chapter 5 summarizes the study results, makes recommendations for action and further study, describes the implications for positive social change, and provides person reflections.

Chapter 2: Literature Review

This review of the literature for the Q methodology study accomplishes, in order, five objectives: (a) establishes the conceptual framework of DIAD theory-based collaboration, (b) identifies the gaps in collaborative practitioner efficacy claims which this study seeks to fill; (c) explores the interpretive framework of collaborative governance, subjective communication, and complexity science to assist with the abductive reasoning; (d) describe themes for implementing Q-methodology; and (e) positions Q methodology among other potential research methods. The practice and study of the different forms of collaboration continues across a spectrum of academia. Accordingly, this review effort searched across this spectrum of the literature including public policy, public administration, planning, non-profit, organizational, and leadership theory and research. These review effortss principally utilized EBSCO, Sage, and ProQuest databases as well as peer reviewed online journals such as the *The Public Sector Innovations Journal*, Each body of literature provides additional richness for understanding the perspectives, or factors, that this Q methodology study seeks to reveal, observe, and interpret. Ultimately, by answering the research questions this study posits, the operant subjectivity of collaborative participants were uncovered.

Study Origins and Objectives

This study focused narrowly on one feature of collaboration research and theory: the DIAD theory of collaborative processes. DIAD theory provided the conceptual framework for this study and the organization for the Q technique. The following portion of this review of the literature describes the key elements of this theory then traces the use of this theory over the past decade. This theory specific review ends by highlighting

gaps in the theoretical and research literature that this study assisted in closing. Again, the second feature of collaboration research and theory in which collaborative governance, subjective communication, and complexity science literature associated with the underlying dynamics of collaboration will be addressed in interpretive framework section to follow.

DIAD Theory

Booher and Innes (2002) introduced the DIAD theory of collaborative processes as a way of explaining collaborative planning network dynamics. Booher and Innes were both collaborative practitioners and employed phenomenological and interpretive case studies based on their experiences and others' experiences in developing their theory. DIAD theory is both a descriptive and a normative theory of collaborative processes. Figure 1 shows the relationship between the theoretical elements of diversity, interdependence, and authentic dialogue. Booher and Innes (2002) emphasized that participants in DIAD theory-based collaborative processes are not "selfless altruists" but rather driven by "self-interest and rational choice" (p. 227). It is from this position of self-interest that the three elements of the DIAD theory of collaborative processes are believed to generate beneficial system dynamics.

As illustrated in Figure 1, each participant in a collaborative process acts as an independent agent representing individual diverse interests (Innes & Booher, 1999, 2002; Shmueli, Kaufman, & Ozava, 2008). Diversity introduces the complete spectrum of perspectives about the issues being dealt with. Essentially, diversity provides the building blocks for potential innovation (Innes & Booher, 1999a; Irazibal & Foley, 2010). As Innes and Booher (2003a, 2004, 2005; see also Booher & Innes, 2002) identified, leaving

contrarian, often difficult and typically unrepresented and unorganized, perspectives from

the process undermines legitimacy. Further, without the full range of diversity there is

little chance local or interpretive knowledge can be balanced against professional expert

bureaucratic knowledge (Innes & Booher, 2000, 2004, 2005; Booher & Innes, 2002;

Yanow, 2009). Without a diversity of perspectives, authentic dialogue has little chance of

achieving emancipatory rationality (Habermas as cited by Booher & Innes, 2002, p. 228).

Including all perspectives about issues of interest generates the potential for beneficial

deliberative dynamics.
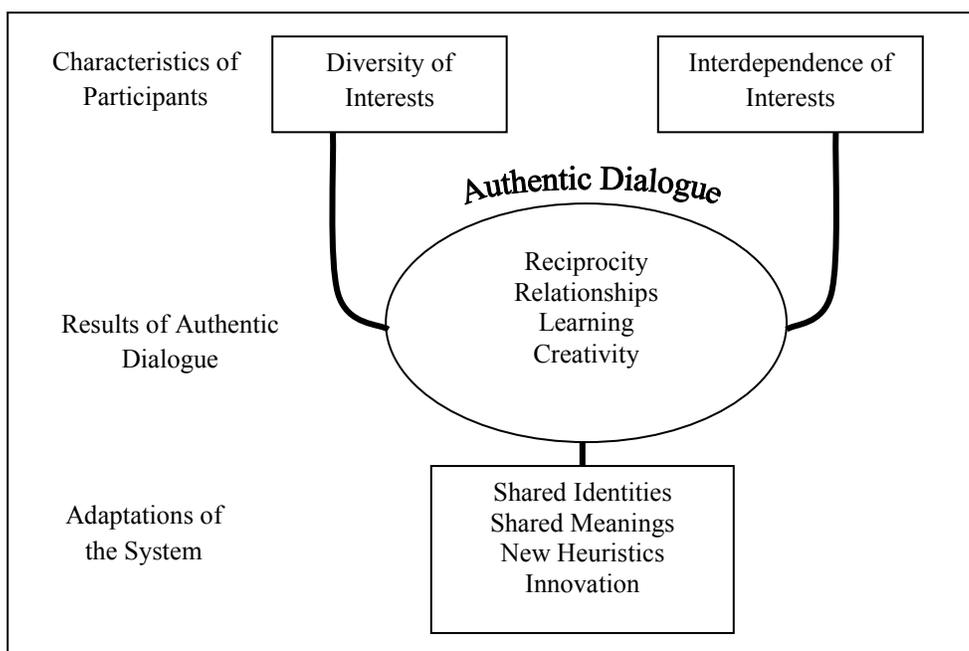
Figure 1. Relationships between diversity, interdependence, and authentic dialogue in the
DIAD theory of collaborative processes. Adapted from the Center for Collaborative
Policy at http://www.csus.edu/ccp/collaborative/diad.stm in 2010.

Participants in a collaborative process must have both an interest of gaining

something and possessing something of interest to others, an *interdependence* (Booher &

Innes, 2002, p. 229). Again, as Booher and Innes (2002) pointed out, collaborative

participants need self-interest in the process and operate under the premise of rational

choice. Empirical research on reciprocity and cooperation based on rational choice and game theory established the existence of this dynamic. Specifically, this research suggests that repeated collective action based on self-interest benefits all parties (Booher & Innes, 2002; Innes, Connick, & Booher, 2007; Shmueli et al., 2008). Individual self-interest provides the impetus for engagement.

Capitalizing on the diversity and interdependence of participants in a collaborative process relies on trying to achieve conditions of authentic dialogue among participants. Booher and Innes (2002) argued that generating a dialogue that allows participants to speak openly about their perceptions and interests while other participants listen openly leads to opportunities for shared understanding, reciprocity, actionable information, and creativity. Generating collaborative process dynamics relies on the open atmosphere of authentic dialogue. Booher and Innes (2002) identified four conditions for authentic dialogue: (a) "participants speak with sincerity, accuracy, comprehensibility, and legitimacy" and "they can evaluate each others' statements in these terms"; (b) participants "must be fully and equally informed about the issues and the problems" and often engage in joint fact-finding in order to "assess their own interest and accuracy of other statements"; (c) participants must be able to comprehend each other which often calls for engaging in storytelling and sense making; and (d) participants must have legitimacy for saying what they say and the ability to demonstrate their legitimacy when challenged (p. 230). Further, Booher and Innes (2002) acknowledged that achieving authentic dialogue typically required skilled facilitation that allows participants to learn to listen and generate the deliberative norms required for dialogue.

Referring again to Figure 1, achieving authentic dialogue generates reciprocity, relationships, learning, and creativity. Shared identities and meanings, new heuristics, and innovation arise from combining diversity, interdependence, and authentic dialogue. Interestingly, earlier work by Innes and Booher (1999a) argued that the complexity of process and outcome dynamics of collaborative processes resembled CASs. Ultimately, the DIAD theory of collaborative processes provides a normative practitioner framework for understanding complex group dynamics.

Collaborative Public Decision making

Participants of DIAD theory-based collaborative processes self-report preferences for collaborative public decision making among participants (Booher & Innes, 2002; Innes & Booher, 1999a, 2003). This perspective stands in contrast to the trends Innes and Booher (1999a, 2004; see also Booher & Innes, 2002) identified as hampering public decision making including increasing complexity, fractured authority, strident and entrenched positions, and an over-reliance on positivist approaches to public policy. These positivist scientific approaches marginalize other ways of knowing, such as subjectivity, interpretation, and local knowledge which participants in DIAD theory-based collaborative processes appear to embrace (Booher & Innes, 2002; Yanow, 2009). Therefore, Innes and Booher 's (1999a, 2004; see also Booher & Innes, 2002) observation of self-reporting preferences for collaborative public decision making indicates an important transformational phenomena.

The Sacramento Area Water Forum and CALFED are two examples of DIAD theory based collaboration. The Sacramento Area Water Forum was a stakeholder negotiation process focused on settling long-standing issues over regional water planning

in the Sacramento region. The stakeholders were able to negotiate a regional plan while generating the additional capacity for collaboratively implementing the plan through collaborative public decision making (Innes, Booher, & Di Vittorio, 2011). CALFED was an interagency collaboration and stakeholder advisory committee process coping with statewide water planning for California. Participants learned how to collaboratively interact within the traditional bureaucratic environment for water planning and continue adapting through collaborative public decision making (Booher & Innes, 2010; Innes et al., 2007; Innes et al., 2011). In both of these examples, the DIAD theory-based collaborative processes produced observable phenomenological evidence that participants supported collaborative public decision making.

Gaps in the Literature and Study Objectives

Two gaps in the literature on DIAD theory are identified. First, no corroborating research literature was identified supporting or denying Booher and Innes' (2002) phenomenological and case study research conclusions concerning self-reported preferences for collaborative public decision making. Traditionally, self-reported preferences prove problematic for independent verification. Second, no identified research literature explored the specific attributes of these preferences for collaborative public decision making. Independent verification and an initial assessment of collaborative public decision making preferences would fill an important gap in the literature for collaborative practitioners and researchers. The research questions presented in Chapter 1 were developed to explore this gap in the literature.

Interpretive Framework

Each of the three elements of the interpretive framework, collaborative governance, subjective communication, and complexity science were explored broadly in the literature. Each element appeared across many academic disciplines beyond public policy and public administration including planning, organizational and leadership studies, and nonprofits. Interestingly, each of the three elements of the interpretive framework often referred to one or two of the other elements. The following discussion of the literature first describes main ideas within each of the three elements of the framework then provides a brief summary of how the idea might apply in the interpretive analysis.

Collaborative Governance

This exploration of collaborative governance (a) establishes the rationale for deliberative democracy, (b) reviews pertinent models of collaboration, and (c) discusses the critiques of collaborative governance, and (d) the responses to the critiques including the connections between collaboration and complexity. While this study focuses on the practical, pragmatic DIAD theory-based collaboration, this broader review of the literature reveals ample reasoning for integrating subjective communication and complexity science into the interpretive framework for this study based on the nonlinear dynamics of genuine collaborative processes.

Broadly, the theory and practice of collaboration falls under the theory and practice of deliberative democracy, as opposed to representative democracy (Dryzek, 2009; Nabatchi, 2010; Musso, Weare, Bryer, & Cooper, 2011; Niemeyer, 2011; Simonnova & van der Valk, 2009). As Dryzek (2009) explained, the democratic

proposition, from its inception in Greek culture, established two realms: a representative form and a deliberative form. Modern democratic societies predominantly focus on the representative form (Nabatchi, 2010). In doing so, contemporary complex and fractured public policy environments increasingly challenge these political systems. For Dryzek (2009), the advancement of the various forms of deliberative democracy empowers participation among all stakeholders in the democratic process thus bringing back much-needed legitimacy to governments.

Contemporary deliberation takes many forms, which Fung (2006) organized in three-dimensional space as a democratic cube. The model's three axes include (a) the mode of participation ranging from state to public, (b) the mode of interaction ranging from spectator to bargaining to deliberation and facilitative, and (c) the arrangement of power ranging from direct authority to co-governance to advise and consult. Each axis emanates from a public agency's direct authority with claims of technical expertise and expert administration. Public hearings, deliberative polls, study circles, and traditional and participatory budgeting populate the cube's space affording exploration of legitimacy, justice, and effectiveness of deliberations (Fung, 2006, p. 70). Fung (2006) concluded the procedural stifling of genuine public deliberation through the public hearing process, or the implied technical expertise and expert administration in traditional budgeting, blocks legitimacy. Ultimately, justice and legitimacy, as well as decision effectiveness, relies on public engagement and empowerment of deliberation (Fung, 2006, Innes & Booher, 2004; Musso et al., 2011; Niemeyer, 2011). Further, Fung (2006) connected the process, communication, and authority of public deliberation in policy making to legitimacy, justice, and the effectiveness of the policy (p. 74). Practical lived

experiences enter into the decision process to ultimately improve the outcomes. Individuals are at some level engaging in any number of these democratic or deliberative processes in their daily lives resulting in both negative and positive experiences.

Within the broader domain of public deliberation lies collaboration. Interestingly, the different forms of collaboration identified in the literature focused on achieving seemingly unobtainable outcomes compared with traditional representational democratic outcomes. As Dryzek (2010; 2009) and others (Fung, 2006; Innes & Booher, 2004; Niemeyer, 2011; Simonnova & van der Valk, 2009) identified, both representational and deliberative forms of democracy operate along side of each other in the same time and space. Interestingly, Crozier (2010) approximated this side-by-side representational and deliberative democracy into political and policy systems respectively. From this perspective, traditional rationalist political theory considers the political, representational, system as the driver of the policy, deliberative, system. However, this view changes with policy systems proactively engaging in the pragmatic coping with seemingly intractable social issues through collaborative processes. The political system may now be viewed as being empowered by these emerging collaborative policy systems (Crozier, 2010). Fundamentally, Crozier (2010) argued that within the deliberative paradigm, policy formulation becomes the input and politics the output. Ultimately, the communication dynamics established in collaborative public policy processes generates the thrust for political action (Crozier, 2010, Innes & Booher, 2004). Deliberative and representative democracies become reconnected through communication and dialogue (Dryzek, 2009). Collaborative theory explores these dialogic dynamics in detail.

Relationships fundamentally change in collaborative dialogues (Booher & Innes, 2002; 2010; Innes & Booher, 1999a, 1999b; 2004; 2010). In recognition of this, Hibbert and Huxham (2010) suggested a model of collaboration that refined Innes and Booher's (2004) public engagement arguments. The model of collaboration is organized into three domains; (a) content viewed as aggregations of "complex symbolic material", (b) processes identified as "repetition and interpretation", and (c) authority dealing with "truth claims" that "preserved answers to community questions" (p. 543). The overlapping of these three domains produces collaborative dynamics. Specifically, the interaction of content and process sustains the effort and adaptation through time. The interaction of content and authority generates understanding. Finally, the interaction of process and authority produces the future from the past. Tradition, "a process of preservation of symbolic content and meaning, within a particular community, across time", ties content, process, and authority together in collaborations (Hibbert & Huxham, 2010, p. 525). Interestingly, Hibbard and Huxham (2010) concluded that (a) available traditions align with content in which participants generated new symbolic content and meaning, (b) accessible traditions with processes in which participants repeat and expand emerging traditions, and (c) ancient traditions with authority in which participants cope with broader societal traditions. This research suggests that individuals engaged in collaborative relationships experience tangible change dynamics and learning at the individual, group, and social levels.

Collaboration has critics and criticisms. Yanow (2009) identified the principal critique of collaborative processes, which is indeterminacy or unpredictability. Collaborative processes lack the cause-and-effect illusion supplied by the rational choice

model of policy and plan formulation (Innes & Booher, 2004). Other collaborative process observers typically point to the lack of central authority of the fundamental flaw in collaborative practices (Weir et al., 2009). Power is dispersed and action requires the collective assemblage of dispersed power for action. This line of thinking draws heavily on economic theory. Further, existing structures for public policy operate within the political authoritative structure establish by representational democracy (Agger & Löftgren, 2008). Additionally, actors within the positivist public policy structure have a stake in limiting access to that structure in order to maintain perceived powers. Agger and Löftgren (2008) further compared the practices of collaboration to traditional representative democratic practices and concluded shortcomings existed. Collaborative groups lacked authority and individuals were co-opted or unheard. Additionally, Weir et al. (2009) argued that the typical horizontal relationships developed in collaborative processes were inadequate for sustaining collaboration without vertical relationships of authority. Another vein of critique centers on an economic theory of collaboration. This perspective views the transactional costs to be too high (Webster, 2009) and the market exchange through deliberation to difficult (Umenmeto & Igarashi, 2009). Taken together, the roots of the collaboration criticisms begin with contemporary democratic practices that overemphasis the representational form of democracy (Dryzek, 2009, 2010). Deliberation is messy, personal, and unpredictable. These critiques of collaboration suggest individuals might have negative experiences within collaborative processes based on a perceived lack of control, authority, or similar reductionist concept.

Research, however, indicates collaboration exists and can be measured. Thomson, Perry, and Miller (2009) specified a statistical model for elements of collaboration and

concluded the model elements indeed measured levels of collaboration. Potentially more important, collaboration advocates respond to critics and criticism by pointing to the beneficial emergent outcomes of collaborative processes. Chiefly among these, in terms of this interpretive framework, is the potential for generative learning (Innes & Booher, 2010; Leach & Sabatier, 2005). These emergent properties represent nonlinear dynamics associated with deliberation and dialogue among diverse interdependent parties (Ansell & Gash, 2008; Rhodes & Murray, 2007). These types of communications and conversations are further associated with information exchange and ultimately the generation of local knowledge (Wagenaar, 2007). This local, tacit knowledge generated by individuals interacting in the collaborative process becomes practical, pragmatic information upon which the group collectively determines their actions (Booher & Innes, 2010). Ultimately, self-organizing governance emerges (Shrestha & Feick, 2009). Essentially, emergence is the central property of complex adaptive systems that collaborative practitioners argue collaborative processes emulate (Innes & Booher, 1999a; Wagenaar, 2007). Genuine collaborative processes emulate CASs.

Subjective Communication

This exploration of communication (a) defines the conceptualization of subjectivity for this study, (b) emphasizes the nature of context in meaning making, (c) distinguishes communication dynamics and linguistics in contextual meaning making, and (d) connects communication with collaborative governance and complexity science. Once again, this review of the literature takes the view that the world is an organism operating nonlinearly.

While subjectivity is at the center of the human experience, the traditional scientific method and Descartes' separation of mind and matter obfuscate discussions of meaning of subjective knowing (Dryzek, 2009; Yanow, 2009). However, Stephenson (1981) defined the subjectivity in question for this exploration as "the condition of viewing things exclusively through the medium of one's own mind" and not the "consciousness of our own perceived status" (p. 37). Consciousness limits subjectively to categorical states prevalent in objectivity or "thing-attribute terms" (Stephenson, 1981, p. 40). Fundamentally, consciousness comes from Descartes separation of matter and mind and the emergence of modern science based on rational thought and objectivity (Stephenson, 1980, 2007). The resulting focus on science emphasized particular, objective, knowledge over common, subjective, knowledge. Specifically, this focus supported the belief that what exists within the mind as knowledge and is distinguishable from communicability or interpersonal communication and shareable knowledge; consciousness versus *conscire* (Stephenson, 1980, 1981, 2007). The word conscire comes from the Latin *con* and *scio* meaning with and know respectively, or "I know together with (someone)…" (Stephenson, 2007, p. 99). This realization led Stephenson (2007) to conclude that "sharing is what should have been called consciousness, and it meant merely being communicable in common" (p. 102). The subjectivity, of operant subjectivity, focuses on meaning and knowledge generated through communicability and shared knowledge.

Further, Stephenson (1981) argued that focusing on the "functional-interactional situations" of these interpersonal communications generates meaning (p. 45). In this sense, individuals bring forth meaning that is to be subjectively understood, not

objectively explained or predicted (Stephenson, 1981, p. 50). Meaning is self-referential. Ultimately, communicability is the subjective communication of everyday common knowledge that individuals bring meaning to during functional interactional situations (Stephenson, 1981, p. 51). Making subjective knowledge operant requires bringing structure to self-referential meanings (Stephenson, 1977, 2007). Operant subjectivity comes from the new meanings investigators bring to the inherent operant structures of the self-referential meanings thus providing the communicative nexus of the scientific study of subjectivity (Stephenson, 1977, 1980, 1981, p. 52). The situational nature of bringing forth meaning and knowledge through communication, operant subjectivity, is echoed elsewhere in the literature.

Two features of subjective meaning and knowledge are identified for this interpretive framework. The personal dynamics of the communication refers to the attributes of communication occurring in public policy and public administration domains (Crozier, 2010; Dryzek, 2009, 2010; Heath, 2007; Yanow, 2009) The linguistics of the communication focuses on the types of communication that may provide distinct advantages in bringing forth operant subjective meaning and knowledge (Dryzek, 2010; Chettiparamb, 2006; Hatch & Yanow, 2008). The former feature deals with the personal ways individual communicate their individual way of knowing while the later feature deals with ways this personal knowing can be transferred.

The tenor of public policy communication is changing. As Yanow (2009) made the distinction, the typical language of certainty in public policy and public administration contrasts with the needed language of reflective practice or "passionate humility" (p. 579). The language of certainty is grounded in scientific ways of knowing

and continues generating barriers to our capacity to learn from experience. Essentially, scientific knowing forced doubt aside until the post-positivist philosophers of the 20th century in turn placed positivism in question (Innes & Booher, 2005; Yanow, 2009). The questioning of positivist approaches led to interpretive approaches and eventually to the reflective practice of passionate humility. Employing the language of passionate humility and doubt responds to the continual over professionalization of modern society (Yanow, 2009). The tenor of the communication shapes the knowledge generated.

Heath's (2007) research on community collaboration highlighted this dialogic quality of humility by identifying the interpersonal dynamics of genuine communication. Specifically, communicating with humility in dialogue generates new perspectives through the emerging capacity of individual voice. Further, the diversity of individual identities, social roles in community, and what is truthful and valuable in public policy enhances the dialogic experience. Most importantly, in terms of passionate humility, dialogue empowers all participants through speech conditions oriented toward ameliorating dominant voices by contesting truth claims (Heath, 2010, pp. 149-150). In terms of individual lived experiences, the tone of the communication, written, spoken, or otherwise, is closely associated with the individual's sensitivity to a particular tone.

Collaboration and the shifting tenor in public policy communication continue changing the models for public policy formulation. Specifically, Crozier (2010) argued the distinction between linear and nonlinear approaches to policy and political communication is in the nature of communication. Traditional deliberation and dialogue is quite different than the complexity of contemporary information dynamics. These information dynamics employ multiple diverse feedback loops, nurtures a sense of

immediacy, and creativity in accomplishing governance goals (Crozier, 2010). While not explicitly referring to Heath (2007) and Yanow's (2009) questioning of certainty through humble dialogue, Crozier (2010) does hint at the underlying nonlinear dynamics of contemporary public policy formulation. Formulation now relies on complex interactive situational communications between policy actors employing humility.

Dryzek (2010) established a role for rhetoric in policy deliberations. Typically, rhetoric is viewed as impassioned irrational communications meant to elicit responses from susceptible political actors. In Habermas terms, rhetoric is acceptable yet marginalized in pursuit of rational dialogue. However, Dryzek (2010) argued that bridging rhetoric improved potential deliberative outcomes. Essentially, bridging rhetoric allows individuals encountering multiple discourses and "fractured in its commitments" yet "open to persuasion as to which of its commitments it at to invoke" (Dryzek, 2010, p. 324). The classic example of this bridging rhetoric was Dr. Martin Luther King's rhetorical appeal to white audiences to invoke the Declaration of Independence and the U.S. Constitution, to which whites are emotionally attached, in response to white supremacist rhetoric (Dryzek, 2010).

The use of metaphors to bridge knowledge domains and assist in the creation of knowledge is readily recognized (Chettiparamb, 2006; Hatch & Yanow, 2008). Chettiparamb (2006) researched the transfer of complexity science into planning theory and demonstrated the transformative role that metaphors play in knowledge transfer. Similarly, Hatch and Yanow (2008) identified often unspoken assumptions within different knowledge domains, such as public policy, often bridged effectively using metaphors. Taken together, communication dynamics and linguistics transfer knowledge

and meaning. With this perspective, subjectivity concerns "individuals measuring rather than being measured": subjective communicability (Brown, 1995, p. 15). In terms of individual lived experiences, meaning emerging from communication is the domain of the individual a while being influenced by the individual's environment: a complex undertaking.

Complexity Science

This exploration of complexity science (a) identifies CASs properties, (b) discusses the emergent CAS behaviors these properties produce, (c) summarizes CASs theory use in public policy and public administration theory, (d) reveals criticisms, and (e) argues for the importance of authentic dialogue as a mode of communicative interaction for agents in a system. Complexity science is a universal science emerging through the comprehensive study in diverse fields of academia. As a universal science, the properties of CASs hold universally regardless of context. A fundamental shift in worldviews is implied: from world as machine to world as organism (Innes & Booher, 2005; Wagenaar, 2007). This interpretive framework, and this broader review overall, adopts the world as organism worldview and its implied nonlinear dynamics.

The operational properties of CASs with implications for public policy and administration include (a) nonlinear relationships (b) self-organizing, (c) high quality information with feedback loops, (d) often being open systems, (e) often nested, and (f) generating memories, (Booher & Innes, 2010; Goldstein et al., 2008; Rhodes & Murray, 2007; Wagenaar, 2007). In complexity science, systems are comprised of independent autonomous agents; there are no leaders (Booher & Innes, 2010; Rhodes & Murray, 2007; Wagenaar, 2007). These independent agents interact in nonlinear, dynamic states

between chaos and stability allowing them to self-organization into CASs (Goldstein et al., 2008; Wagenaar, 2007). Self-organization occurs because system agents exchange high quality information which allows agents to modify their behavior within the system through feedback processes (Rhodes & Murray, 2007; Wagenaar, 2007). The information agents exchange about that environment must be meaningful, comprehensible, and remain undistorted by the environment in which the information flows (Goldstein et al., 2008; Rhodes & Murray, 2007). These information flows generate feedback loops that validate the information ultimately lead to adjustments in agents behavior; both positive and negative (Wagenaar, 2007). Self-organization and adaptation occurs without leadership.

Complex systems do not operate based on the deterministic, cause and effect concepts of Newtonian physics (Booher & Innes, 2010; Rhodes & Murray, 2007). Instead, system agents interact with each other while generating patterns of interactions unique to each CAS, which cannot be predicted, and are not subject to predetermined rules of organization (Goldstein et al., 2008). Further, these patterns of organization adapt to the changing operating environment (Wagenaar, 2007). This adaptive capability allows the open system nature of CASs to generate resources such as energy or information within the system while closed systems do not ((Booher & Innes, 2010; Goldstein et al., 2008). Interestingly, these CASs patterns of interaction exist at all scales and overlap (Goldstein et al.., 2008; Rhodes & Murray, 2007). Scale means agents operating as a CAS on one level may be considered collectively as an agent operating in a CAS at a higher or lower level (Wagenaar, 2007). For example, a person is a CAS and the group that person is associated with may also be a CAS. Overlap means agents can operate in

multiple CASs at the same level or at different levels (Goldstein et al., 2008; Wagenaar, 2007). Again, the person as CAS may be associated with several groups operating as CASs. Ultimately, CASs generate memory from interactions among agents within the changing environment occurring at multiple scales and overlaps (Rhodes & Murray, 2007). These memories become histories of the different states of the CAS generating a hysteresis that creates significant initial conditions for emerging CASs (Goldstein et al., 2008; Rhodes & Murray, 2007). In terms of individual lived experiences, individuals are as independent agents operating in systems.

These CAS properties produce unique behaviors including (a) indistinguishable boundaries and dissipative structures, (b) emergent behavior, (c) fitness landscapes, (d) bifurcations, and (e) pattern stability near chaos (Goldstein et al., 2008; Rhodes & Murray, 2007, Wagenaar, 2007). CASs establish dissipative structures that generate stability far from equilibrium near a chaotic state ((Booher & Innes, 2010; Goldstein et al., 2008, Rhodes & Murray, 2007). These dissipative structures process environmental information near this chaotic state to maintain, and even change, organizational forms. Pattern stability develops through feedback structures that allow the CAS to continue dynamically operating near chaos (Rhodes & Murray, 2007; Wagenaar, 2007). This state is possible because of amplified positive feedback ((Booher & Innes, 2010; Goldstein et al., 2008). Patterns established through dissipative structures may appear stable and deterministic at one level of observation with the nonlinear nature being revealed at another level of observation (Rhodes & Murray, 2007). Systems near the edge of chaos remain dynamic.

CASs operate with hysteresis making them sensitive to the initial conditions from which they emerge (Goldstein et al., 2008; Rhodes & Murray, 2007). This phenomenon is known as the "butterfly effect" from the observation that a butterfly flapping its wings today halfway around the world could cause a storm here next month ((Booher & Innes, 2010; Wagenaar, 2007). A similar property of CASs, fitness landscapes, relates to stability and dramatic shifts (Samoilenko, 2008). Fitness landscape refers to the local optimal conditions in which a CAS operates based on a local maximum state of stability. Achieving a new optimal state requires the CAS to experience a bifurcation event leading the CAS to seek new fitness in the new landscape (Samoilenko, 2008). These new fitness landscapes often achieve improved state of operations through emergent behavior generated through new reinforcing feedback loops (Goldstein et al.., 2008). The principle of multiscalarity implies agent interaction at different scales follow similar patterns (Somorville, 2011). For example, interaction patterns among individuals within an organizational department resemble interactions among organizational departments and between organizations. Each of these CAS emergent behaviors varies through time and space operating with nonlinear dynamics. In terms of individual lived experiences, identification of patterns may provide insight to underlying complex system properties.

Complexity theory, including CASs, continues garnering attention in the public policy research literature. For example, Duit and Galaz (2008) explored governance systems in terms of CASs leading to a typology of governance based on high and low exploitation and exploration. High exploitation and exploration within a governance system resembles a system operating near the edge of chaos. This research concluded that existing governance systems operate as CASs. However, the legacy of rigid centralized

Weberian bureaucratic practices unduly impedes the adaptive problem solving required in coping with "nonlinear dynamics, threshold effects, and limited predictability" (Duit & Galaz, 2008, p. 329). Only robust governance systems are capitalizing on exploitation and exploration. Booher and Innes (2010) reached similar conclusions with their study of CALFED, the California water planning and management process. Before CALFED, water policy in California was centralized, gridlocked and with operating with little accountability. However, CALFED self-organized into a collaborative, decentralized, and transparent water planning and management operation. Reinforcing Duit and Galaz's (2008) findings, CALFED operates with robustness and adaptation in a complex, nonlinear, and unpredictable environment (Booher & Innes, 2010). Robust governance emerges with both established and new governance systems since they are in reality CASs.

Additional literature associated with public administration, such as organizational and leadership theory, draw on complexity theory as well. A series of theoretical articles, including Boal and Schultz (2007), Plowman, Solansky, Beck, Baker, Kullarni, and Travis (2007), Osborn and Hunt (2007), and Uhl-Bien, Marion, and McKelvey (2007), challenged the traditional notion of organizational leadership as command-and-control directing toward a visionary future (Plowman et al., 2007). Instead, organizations operate as CASs without the traditional leadership figurehead. Therefore, leadership, in actuality, involves the enabling of the future by encouraging innovation, engaging in sense-making and disrupting behavior patterns (Boal & Schultz, 2007; Osborn & Hunt, 2007; Plowman et al., 2007; Uhl-Bien et al., 2007). Ultimately, leadership occurs contextually with shifting roles within the organization, or CAS, operates at the edge of chaos generating

meaning through dialogue and storytelling (Boal & Schultz, 2007; Osborn & Hunt, 2007). Taken together, the emerging concepts of leadership within CASs demonstrate the viability of complexity theory for improving both understanding and the resulting theories and models of public administration and public policy. Interestingly, theorists, such as Ospina and Saz-Carranza (2010), remain committed to the idea of the purposeful, deliberate, and visionary leader despite the recognition of nonlinear relationships of complex and networked governance systems. Nevertheless, overall, complexity theory continues mutually informing emerging public policy and public administration theory and practice.

Criticisms of complexity science in public administration and public policy studies typically focus on epistemology and worldview. Those who see the world as a machine will continue with the linear reductionist traditions of scientific knowing (Morcol & Wachhaus, 2009; Yanow, 2009). While this line of criticisms exists, a detailing of them within the interpretive framework would not be germane for this Q methodology study. However, even among those who see the world as an organism, criticisms were raised about the legitimacy of how complexity science is being integrated into public policy and public administration scholarship. Daneke's (2007) arguments summarize these sentiments. The departure point for the argument begins with the "nonlinear tools and concepts…derived from recent computational advances in the physical, biological, and cognitive sciences" (p. 89). This computational capacity coupled with the methods and metaphors of complexity are incorporated into the behavioral study of human systems with varying levels of epistemological integration (Daneke, 2007). Daneke's (2007) criticism was that many times these efforts fail to realize the elemental

shifts in social theory that complexity implies. Specifically, theory building in this context is incomplete. Therefore earlier systems theories, which included considerable work in the treatment of "human agency and institutional processes", needs consideration to improve current theory development (p. 89). Ultimately, this line of criticism argues for the literal and transformative integration of complexity science and CAS theory into the study of public policy and public administration. Anything less is epistemologically insincere. In terms of individual lived experiences, a certain level of comfort is required to cope with the nonlinear, unpredictable reality implied with complex systems and organism worldview.

The literature on collaborative governance, subjective communication, and complexity science connect individual subjectivity and contextual learning. Often this connection is made by pointing to Habermas' ideal speech conditions leading to authentic dialogue (Dryzek, 2009, Booher & Innes, 2002). Further, Morçöl (2005) argued that exploring this sort of intimate personal lived experience about the nature of subjective learning in a complex environment required a phenomenological approach. The contextual nature of individuals engaged in complex dynamics and interactions with others typically challenges concepts of social authority and knowledge claims (Niemeyer, 2011). At the center of the generation of knowledge is the individual and collective subjective ways in which humans experience and make meaning of the world around them--operant subjectivity. The combination of broad collaborative governance, subjective communication, and complexity science research literature provides a robust interpretive framework. Each area of study provides a unique vantage point for abductivly exploring potential lived experiences in terms of underlying collaborative

dynamics. Some overlaps, among others, include (a) collaborative processes are complex, nonlinear, and dialogic; (b) meaning, and ultimately learning, emerges through the process of making subjective knowing operant; (c) CASs self organize through communication, such as dialogue in social systems, and feedback between independent agents; and (d) collaborative processes generate knowledge and meaning through participant, independent agent, dialogues about experiences.

Themes and Perceptions for Exploration

Three potential themes were identified. One, broadly, the concept of meaningful and purposeful communication is central for collaborative governance, subjective communication, and complexity science. Each perspective on the dynamics of these communication engagements provides both similar and distinct attributes requiring contrasting between perspectives. Two, the nature of relationships between actors in collaborative governance, subjective communication, and complexity science appears to be oriented toward the nonlinearity of an organism worldview. This perspective will require attention to potentially unexplainable novelties within the operant factor structures suggesting nonlinear relationships. Three, collaborative governance, subjective communication, and complexity science suggest the specter of the future provides the energy for engagement. Interpreting operant factor structures will need to identify inferences about individual perspectives concerning focusing on future or past experiences when considering the present. Each of these three themes will provide viable points of departure for the efforts to interpret operant factor structure.

Methodological Perspectives

The study of potential complex nonlinear system dynamics, such as the dialogic dynamics of communication, requires approaches that reasonably account for nonlinearity. For example, Wagenaar's (2007) neighborhood research relied on qualitative case study methodologies and a sophisticated interpretive framework based upon the principles of CASs. Agger and Löfgren (2008) mirrored this CAS conceptual framework in studying collaborative planning dynamics. Kabila and Zia's (2009) investigation of collaboration in organizational governance networks used descriptive narrative. Others, such as Morçöl (2005) and Innes and Booher (2010) argued that phenomenological approaches are needed to capture nonlinearity and complexity. Ultimately, researchers and theorists treating nonlinearity and complexity legitimately in their work recognize qualitative methodologies and the capacity of the human mind is the only genuine alternative to the computational capacity of modern computers in the study of complex system.

However, quantitative research methodologies have been employed to explore attributes of complex systems with a degree of success. For example, Gazely's (2010) research identified characteristics of complex government and nonprofit relationships using statistics. Similarly, Leach and Sabatier (2005) identified the characteristics of trust associated with collaborative policymaking. Further, McCubbins, Paturi, and Weller's (2009) network coordination experiments hinted at the complexity of nonlinear dynamics. Finally, Zeemering (2009) and other's (Frantzi, Carter, & Lovett, 2009; Gess & Sanders, 2009; Salazar, 2009) Q methodology studies revealed the value of this methodology in coping with the complexity of factors influencing individual

comprehension of emerging topics such as sustainability. Specifically, Q methodology uses statistical procedures to bring form by way of factors to an otherwise quantumly complex system of meaning and knowing (Brenner, Aucoin, & Xiaoming, 1998; Brown, 1995; 2009; Brown & Woods, 2009). Ultimately, as Day (2008) argued, Q methodology will play a pivotal role in the study of public policy and public administration. Fortunately, these types of quantitative approaches incrementally add insight into complex social systems.

Ultimately, methodological approaches to social inquiry must be appropriate for the nature of the inquiry. Specifically, this inquiry explores the self-reported preferences for collaborative decision making by participants in DIAD theory-based collaborative processes. This exploration seeks to independently confirm or disprove this established proposition and further understand the individual and collective perspectives associated with this proposition. While qualitative methodologies, such as phenomenology, are well-suited for such an inquiry, Q methodology specifically incorporates the complex elements of this inquiry within the technique itself (Brown, 2009; Stephenson, 1989). Q methodology effectively explores the questions this study will explore. Chapter 3 details the methodological approach for this exploration that draws on the methods, principles, and theory of Q methodology to meet the challenges of scholarly study of modern complex systems through the scientific study of subjectivity (Brown, 2009). Q methodology will be appropriate for the nature of this inquiry.

Chapter 3: Research Method

This study ultimately assessed the efficacy of self-reported preferences for collaborative public decision making by individuals participating in DIAD theory-based collaborative processes. Q methodology was used to identify self-reported preferences, explore the form and structure of these decision heuristics, and compare these results with individuals supporting collaborative events. Q methodology accomplished this with the eight steps of Q technique: (a) collecting the concourse of statements, (b) selecting statements from the concourse reach to structure the Q-sample, (c) identifying the P set of individuals experiencing the phenomenon of interest, (d) collecting Q sorts under the appropriate conditions of instruction for sorting, (e) calculating Q sort statistical correlations and factors, (f) identifying factors through iterative factor rotations for the best rotational solution, (g) calculating factor scores, and (h) interpreting the factor results (Brown, 1980, pp. 259-262, 2004; Durning & Brown, 2007, pp. 539-548; McKeown & Thomas, 1988, pp.12-13). Q-methodology's theory and principles provided ample latitude for exploring the research questions this study posed.

Contemporary applications of Q methodology tended to focus on "perspectives, attitudes or discourses, not on subjectivity" (Wolf, 2009, p. 6). This focus may come from Q technique's distinct capacity for identifying operant factor structures through factor analysis (Stenner, 2009, p. 66). At this point in the methodology, theoretical and methodological distinctions occurred that were germane to this study. Researchers concentrating on discourses or perspectives tend to interpret operant factor structures based on a priori defined theoretical patterns or constructs (Stenner, 2009; Ramlo & Newman, 2011; Watts, 2009, p. 42; Wolf, 2009). Stenner (2009) argued for the

distinction between differences in eventuality and potentiality which is embodied in quantum theory. Specifically, the distention, for Stenner, is between the world as machine, eventuality, and world as organism, potentiality (pp. 53-54). For researchers targeting discourses and perspectives, the interpretation of operant factor structures adheres closely to a machine worldview by viewing the factors as eventual outcomes from individual acts of Q-sorting (Ramlo & Newman, 2011; Watts, 2009, p. 42). For researchers concerned with subjectivity, the interpretation of operant factor structures adopts an organism worldview by relying more on the researcher's feelings to surface potentialities. More specifically, "[a] factor does not merely embody a 'point of view' but also an *intentionality*" (original emphasis, Stenner, 2009, p. 66). Generating a feeling for intentionality within the operant factor structure relies on interpretation of lived experiences in an attempt to gain access into the subjective (Ramlo & Newman, 2011; Wolf, 2009). While this study examines individual perspectives, approaching the task from an organism worldview obliges the examination to undertake factor interpretations that attempt to incorporate lived experiences while striving for Stephenson's operant subjectivity.

Chapter 3 is organized as follows. The research design and approach section restates the research question, provides a philosophical summary of Q-methodology, details how the principles of Q methodology were applied in this research, and summarizes Q-methodology's appropriateness for this research. The instrumentation and materials section describes the concourse development and the formulation of the Q-sample. The setting and sample section describes the P sets of individuals who potentially experienced the dynamics leading to collaborative public decision making preferences.

Data collection and analysis section describes the conditions of instruction, the Q sort

collection, statistical operations, and details of the analytic approach to factor

interpretation. This chapter's final section details the role of the researcher and how the

ethical treatment of participants was achieved. Ultimately, Q methodology provided the

empirical information and data for exploring individual perspectives of public decision

making.

Research Design and Approach

This research sought improved understanding of the dynamics of individual

operant subjective views of decision making in light of expanding collaborative practice.

Collaborative practitioners have reported that participants in DIAD theory-based

collaborative processes self-report a preference for collaborative public decision making

(Booher, 2004; Booher & Innes, 2002; Innes & Booher, 2004). This study examined the

following three research questions:

1. What are collaboration participant perspectives of public decision making?

2. Do collaboration participant perspectives of public policy decision making vary

between collaboration groups?

3. Do collaboration participant perspectives support collaborative public decision

making?

The overarching approach to exploring these questions was the scientific study of

individual participant's operant subjective perspectives using Q-methodology. The

following discusses the theory, principles, and techniques of Q methodology revealing

the power and flexibility the methodology has for the scientific study of subjectivity.

Q methodology was invented by Stephenson (1935) who was both a psychologist and a physicist. Q methodology continues gaining broader appeal outside of psychology in fields as diverse as nursing, journalism, communications, and public policy (Brown, 1994). As an introduction, Brown (1980) explained that Q methodology parallels a professor's grading of essay term papers. The papers represent the Q-sample, or stimuli, with the arrangement of poor, average, excellent papers serving as the implicit conditions of instruction for Q-sorting. Consider that the papers were not right or wrong, leaving the professor with the subjective task of judging quality with objective criteria (Brown, 1980, p. 195). In Q-methodology, subjectivity is rooted in individual perspectives that provide a reference for the individual's point of view about a situation (McKeown & Thomas, 1988, p. 12). This individual frame of reference is central to Q-methodology. In Q-methodology, meaning is solely provided by individuals performing the statement sorts and not a predetermined meaning established by the researcher (Durning & Brown, 2007, p. 542). Specifically, the focus is on how an individual brings meaning to the statement sorts, not the logic of the sorts themselves (Brown, 1980, p. 191). Essentially, Brown 1980) observed Q methodology deals only with improvable subjective opinions that can be given structure and form through Q technique. This structure and form can in turn be observed and studied. Q-methodology's focus on the individual has implications when compared to R-technique procedures, which are noted in this chapter remaining discussion.

Research questions 2 and 3 deal with whether or not the participants agree that collaborative public decision making is preferred. Ultimately, interpreting the answer to these questions required focusing on statements potentially supporting collaboration.

Interestingly, if the collaborative practitioner efficacy claims were valid, then the collective group of participants would agree on the relative importance of collaborative oriented statements. Therefore, the exploration of this study's questions relied on interpreting both distinguishing and consensus statements. However, a principal tactic for factor interpretation relies on statements that distinguish individual factors. These statements differentiate factors by the various positions at the extreme ends of the most and least like my view structured Q sort (Brown, 1980, 1995; McKeown & Thomas, 1988; Stephenson, 1994). Distinguishing statements provide ample information for operant factor structure interpretation within each P set while exploring research question 1. Exploring questions 2 and 3 ultimately relied on interpretation of consensus statements. The principles of Q methodology do provide the means for abductivly probing the consensus as well as distinguishing statements. The nexus for establishing the abductive "hunch" comes from the second-order factor analysis.

The principles of second-order factor analysis lie in Newton's unpublished Fifth Rule, similar to Stephenson's subjectivity, which regards anything not observable or analyzable about a phenomenon as being hypothetical (Brown, 1980, pp.169-170, 172). Brown (1980) argued that:

> as the second-order factors show, to compare theoretical outlooks, and what exists to be explained, the *genuine* rather than the ad hoc hypotheses are the second-order factors themselves…since they arise naturally from the data without the a priori postulation of a theory. As such, they are demonstrable and arguments follow from them inductively, hence rendering "normal science" possible. (original emphasis, p. 172)

A second-order factor analysis, technically, consists of combining normalized first-order factor Q sorts and conducting a factor analysis of these Q-sorts. Essentially, the point Brown (1980) made was that all the first-order factors making up the second-order factor analysis benefit from the improved hypothesis generated through the natural statistical "normal science" of Q-methodology.

In terms of this exploration, the second-order factor analysis drew upon first-order factors from the three P sets to provide a second-order operant factor structure and an intercorrelations matrix between first and second-order factors (Blatt, 2005). Several recent studies support this approach. Fox's (2003) study of sociopolitical worldviews used second-order factor analysis to bring higher level perspectives for better interpretation of subtle differences between individual cases (p. 285). Wong, Eiser, Mrtek, and Heckerling's (2004) research on ethical clinical decision making highlighted the capacity of second-order factor analysis to provide an opening into further in depth exploration without a priori theories (p. 20). Additionally, Niemeyer, Petts and Hobson's (2005) exploration of individual perceptions about rapid climate change used a second-order factor analysis for establishing consistency among all factor interpretations (p. 1448). Interestingly, Harthcoat and Montgomery (2010) utilized results from two previous Q methodology studies for an exploration of personal epistemologies among academics across educational and religious domains (p. 32). These researchers noted that the higher order structure of a second-order factor structure provides "greater flexibility for understanding" the phenomenon "without the a priori imposition of meaning found in other traditional psychometric procedures" (p. 44). Each of these attributes of second-order factor analysis suggested exploring higher-order factor constructs, using second-

order factor analysis would likely improve and refine initial interpretation of the first-order operant factor structures. This was especially important when a potential hunch was needed for improving the interpretation of consensus statements. The specific analysis details, which includes the phases of analysis, procedures, and rational, are detailed in the subsequent data collection and analysis discussion.

An additional element of this research design concerns the use of three different sets of Q technique results from different times and different demographics. The nature of this study did not rely on specific demographic elements as demographic compositions were not germane to the research questions asked. However, individual demographics within and among groups may prove insightful in interpreting operant factor structure with the caution of potential bias. On the issue of different times, Brown (1980) and others (Stephenson, 1977; 1994, 2007; Wolf, 2007) noted that operant factor structures are relatively stable over time. In other words, in the absence of some intervening life experience, individuals maintain similar perspectives on stable issues represented in Q-samples.

Ultimately, the use of a Q methodology approach and design provided a rigorous yet elegant means to explore practitioners' efficacy claims that participants in DIAD theory-base collaboration self-report preferences for collaborative public decision making (Booher, 2004). This claim about a collaborative outcome served as the conceptual framework for employing Q technique which opened the door to operant factor structures and gave them form for further observation and study. Further, the application of the interpretive framework of collaborative governance, subjective communication, and complexity science, which theorists viewed as generating underlying dynamics for

collaboration, ensured this rich and fertile literature provided sufficient potential for abductive hunches and aha moments. These interpretive feelings surfaced the lived experience and brought a quantum, organistic worldview into the study of public decision making.

Concourse and Q-Sample

Q methodology stands on concourse theory. Concourses are the substrate matter upon which individuals generate new meanings and ideas (Brown, 1994, p. 95). A concourse becomes the instrument for collecting data via the Q-sample. As individuals organize concourse stimuli based on their own sense making, new knowledge is generated (Stephenson, 2007). Through the act of Q-sorting statements from the concourse, the individual conceptions are made communicable, measurable, and, through interpretation of the factors, ultimately given form (Brown, 1980, 1994). The topic for this study's instrument, or concourse, was public decision making.

In Q-methodology, the individuals sorting the Q-sample, or instrument, are the unit of analysis. These individual self-referent perspectives concerning the topic being researched are explored using statistical analysis (Brown, 1980, McKeown & Thomas, 1988). Essentially, no a priori definition is given to the Q sample statements. Definition and meaning are inferred from the position of statements after the Q sort (McKeown & Thomas, 1988). This self-referent perspective implies three distinctions with R-technique. One, reliability and validity rest with the meaning-making of the Q-sorter, not with the researcher's a priori categorical definition of the range of definitions in the Q-sample. R-technique requires this a priori perspective. Importantly, in Q-methodology, an attempt to assign meaning to statements introduces the researcher's arbitrary subjectivity

(McKeown & Thomas, 1988). Two, a self-referent perspective seeks impressions from the Q-sorter. R-technique takes an external perspective seeking expressions about the research topic from individuals based on the researcher's external point of view with little regard for the individual's point of view (McKeown & Thomas, 1988). Three, since Q methodology focuses on impression, conceptuality is inherent in assigning meaning to Q-statements. Initially, Q-statements have no status as facts. Q-sorters give them meaning by sorting them based on conditions of instruction. Researchers give them further meaning through factor interpretation of Q technique results (McKeown & Thomas, 1988). These three distinctions between Q methodology and R-technique were reflected in this study's instrumentation.

Concourses provide individuals access to probe their understanding of issues of interest. Individuals provide meaning through the act of sorting (Brown, 1980, 1994; Durning & Brown, 2007). Therefore, the concourse stimuli, which in this study were written statements, were not statements of fact but merely statements capturing different concepts associated with public decision making. Often these concourse statements of concepts are gleaned by researchers from interviews, media outlets, or similar sources using readily accessible language (Brown, 1980, 1994; Stephenson, 1981, 1994). While this gleaning method may be the preferred means to gather up a concourse for many researchers, alternative techniques are equally viable. Alternative concourse sampling techniques are important because it is unlikely that the entire spectrum of decision making concepts could be gleaned from interviews with individuals or reporting in the media. Unfortunately, concepts and theories about public decision making are principally

the interests of public policy and public administration theorists and practitioners and are seldom treated comprehensively in the popular media.

The concourse and Q sample for this study were developed and used previously under Walden University Institutional Review Board (IRB) approved Knowledge Area Module (KAM) application studies: (a) IRB approval number 01-25-10-0311607 for I-80 Study Group (SG) and (b) IRB approval number 11-25-08-0311607 for the US 50 Stakeholder Working Group (SWG). This concourse and subsequent Q-samples were used to collect Q sorts from the third P set, the PDMSP. The following discussion describes the specifics of how the concourse and Q sample were developed and the subsequent Data Collection and Analysis section details how they were used in this study.

Development of this study's concourse on decision making relied on technical principles of Q-methodology. Specifically, meaning is ultimately established by the Q-sorter when performing the Q-sort. Further, it is the researcher's responsibility to interpret the operant factor structures established by the sorters' efforts to bring meaning to Q sample statements (Brown, 1980, 1994; Stenner, 2009; Stephenson, 1977, 1981, 2007). Therefore, the generating of concourses remains flexible. Two implications of this flexibility were used in developing this study's concourse. One, concourse statements may be gleaned from single sources provided the source captures the totality of the phenomena of interest (Brown, 1980, p. 259). Two, concourse statements can be fashioned from academic language of theory building into accessible statements appropriate for individuals in the P set (Durning & Brown, 2007, p. 340). Ultimately, rewriting and paraphrasing a full range of concourse statements from a single comprehensive source provided a suitable study concourse because these preparatory

activities remain undetectable to the Q-sorter (Stephenson, 1994, 2007). Again, keep in mind, statement meaning comes from the sorter and is observed and given form through the operant factor structures. The researcher's abductive reasoning and interpretation of the operant factors structures generates operant subjectivity.

Paraphrasing scholarly statements from a single source, the *Handbook of Decision making* (Morçöl, 2007), which focused on public administration and public policy, generated a 100-statement concourse. This comprehensive source contains 15 theoretical essays on public decision making ranging from rational choice and disjointed incrementalism to punctuated equilibrium and nonlinear decision making. Each of these essays was sampled to identify five to seven specific academic statements about the full range of public decision making theories. This sampling frequency at this point was not tied to Q technique and was based on the need to adequately represent the range of theories in the 100-statement concourse. The sampled statements were paraphrased from academic language to plain language while maintaining the intent of the original statement. Interestingly, this structuring and editing of statements explicates the researcher's guiding theory and ensures the statements include the breadth of the phenomena of interest (Brown, 1980, pp. 190-191). A Q sample based on a Fisher matrix was then generated.

Q methodology practitioners recommend structuring, not randomizing, Q sample statements using Fisher's long standing experimental design thus ensuring the theoretical phenomenon of interest is assessed (Brown, 1980; 1994; Stephenson, 1994). Reiterating, the structuring of Q-samples goes undetected by the sorter (Brown, 1980, pp. 38-39). The practitioner-based a priori theory for this study's conceptual framework was that groups

emulating CAS characteristics through a DIAD theory-based collaborative process which leads to preferences for collaborative public decision making. Two Fisherian causes were detected within this conceptual framework. The first cause dealt with collaborative dynamics and the underlying shift in worldview from machine to organism (Booher & Innes, 2002; Innes & Booher, 2004). The two effects for worldview were machine, linear, and organism, nonlinear. The second cause deals with the universal dimensions of decision making which provided three effects: authority, process, and content (Booher & Innes, 2002; Innes & Booher, 2004; Hibbert & Huxam, 2008). Each of these dimensions associated with collaboration were equally distinct for other forms of public decision making (Morçöl, 2007). Thus, a 2 x 3 Fisherian matrix, detailed in Table 1, structured the Q-sample. Each cell was populated with either seven or eight statements exceeding the typical four effects interaction replications. These additional replications were included as a way to potentially compensate for statement interpretive bias generated during the concourse development. This process resulted in a 45-statement structured Q sort based on the following distinctions concerning forced sort distribution patterns.

This study's Q sample had a predetermined, force sort distribution pattern. While Brown (1994) argued that the distribution pattern has little significance with Q-methodology's statistical procedures, the pattern can help with both the sorting task and the interpretation of the results. Specifically, if the phenomena of interest is well known to the P set, then a flatter distribution in the form of the forced sort pattern allows individuals to provide greater agree-disagree opportunities. Further, if the subject is less known, a steeper distribution allows for more neutral responses for Q-statements that do not elicit responses (Brown, 1980, p. 200). This Q sample used a flattened sort

distribution pattern ranging from a -5, least like, to a +5, most like, range. The flatter

distribution, see Table 2, lets sorters better distinguish statement preferences.

Additionally, in order to provide ample distribution space for neutral statements in a

flattened distribution, the 0 neutral position was amplified thus leading to an overall 45-

statement sorting pattern. Remember, ultimately the pattern merely served to nominally

assist the sorter with the sorting task and the researcher in the eventual factor

interpretation.

Table 1

Concourse Theoretical Design

Causes	Effects	Items	
		N	*df*
(A) Worldview factors	(a) Machine (linear)	2	1
	(b) Organism (nonlinear)		
(B) Public decision making factors	(c) Content	3	2
	(d) Process		
	(e) Authority		

Note. Interaction Matrix: 2 x 3 = 6 x 7 or 8 (items) = 42 through 48 statements

    ac   ad   ae
    bc   bd   be

Table 2

Q sort Distribution

	Least like						Most like				
Value	-5	-4	-3	-2	-1	0	1	2	3	4	5
Frequency	2	3	4	5	5	7	5	5	4	3	2

P sets and Q-Sorts

In Q-methodology, the P set of interest is the population from which Q sorts are drawn. P sets are comprised of individuals who have potentially experienced the topic of the research (Brown, 1980, 1994; McKeown & Thomas, 1988). Eligibility for this study was based on individuals' that were involved in collaboration, thus having the potential for experiencing dynamics leading to collaborative public decision making preferences. From a Q-methodological perspective, the inclusion of groups of individuals who cannot be shown to potentially have experienced the phenomena of interest would be unacceptable sampling practice. Note the distinction between R-techniques which focus on sampling populations large enough to capture the universe of perspectives (Brown, 1980, 1994; McKeown & Thomas, 1988). Restated, Q methodology is only interested in sampling populations, P sets, with experiences and perspectives of interest for the specific study.

Q-methodology's focus on individuals as the unit of analysis is different from R-techniques leading to different perspectives on sample size. Q methodology aims for insight into individual subjective perceptions concerning a particular issue of significance. This is fundamentally different from R techniques which rely of a sufficient number of data points for viable results. McKeown and Thomas (1988) identified the essential difference between R- and Q techniques are Q's unit of measure is individual significance (p. 48). Q methodology statistically analyzes the individual subjectivity a relevant actor places on a collection of critical statements about an issue. As Brown (1980) explained, in Q methodology individuals provide statement sorts designed by the individual to represent their subjective view of the issue of interest. These statement sorts

become operationalized, through factor scores, and represent the subject's attitude (p. 247). Restated, unlike R-techniques, which would seek statistical significance of each statement as a variable, Q methodology views the individuals performing the sort of the statements as the variables. Each self-significant Q sort performed by a member of the P set of individuals of interest is correlated against all other Q sorts performed by the P set of interest. The result of this correlation makes the individual operant factor structures observable for study. Ultimately, Q-methodology's emphasis on individual perspectives places "the issue of large numbers, so fundamental to most social research, [as being] rendered relatively unimportant" (Brown, 1994, p. 94). However, the Q methodology rule of thumb for Q sort frequency is three statements for each respondent. With 45-statements, this implied a minimum of 15 Q sorts per each P set. The US 50 SWG collected 20, I-80 SG 17, and PDMSP 17 Q sorts each respectively

This study focused on collaborative oriented processes and identified two types of P sets to answer the study's research questions: DIAD theory-based collaborations and a technical public decision making support process. Sampling a noncollaborative population would not be germane to the questions this study is exploring. The two DIAD theory-base collaborations were the I-80 SG and the US 50 SWG. The collaborative support process was the PDMSP.

The US 50 SWG was organized to study mobility issues on a 50-mile stretch of US 50 east of Carson City, Nevada. The group convened and organized to engage in monthly workshops. Participation was voluntary and the group was comprised of 20 to 40 diverse stakeholders including local, state, and federal agencies, community activists, real estate developers, environmentalists, and elected officials. Further, participants were

from both genders, all ages, differing levels of education and professional inclinations, and life experiences. Participants identified initial interdependencies and continued to identify additional relationships.

The I-80 SG was organized to study land use and mobility issues along the I-80 corridor in Western Nevada. The Interstate runs parallel to the Truckee River and the Union Pacific Railroad. This group was convened and organized to engage in monthly workshops with voluntary participation. Twenty to 40 individuals attended these monthly workshops representing local residents and jurisdictions, state and federal agencies, environmental advocacies, and tribal interests. Participants were of all ages, differing educational levels and professional inclinations, and life experiences. Participants discovered interdependencies throughout the process. While these two DIAD theory-based collaborative processes shared similarities based on the principles of the DIAD theory-based collaboration model, they possessed distinct differences stemming from group composition and the particular content issues each group discovered and work collaboratively to solve.

The PDMSP were comprised of 20 transportation related professionals including engineers, planners, and policy experts. These individuals were retained to provide unbiased technical support to assist stakeholders undertake group problem solving in a collaborative setting. The PDMSP addressed a diverse set of topics throughout their support activities. Further, PDMSP were of all ages, both genders, and differing educational levels.

Data Collection and Analysis

In Q-methodology, data collection is a tacit learning activity performed under sorting conditions of instruction established by the researcher. Durning and Brown (2007) explained, the act of Q-sorting generates an individual decision structure being comprised of individual judgments concerning (a) data importance, (b) "personal values," (c) "requirements for affecting a course of action," and (d) "the relative significance of reality judgments, personal values, and instrumental consideration" (p. 549). Individuals who undertake sorting the Q sample statements are engaged in tacit learning involving the strategies undertaken to generate individual Q sort (Brown, 1980, p. 200). This learning aspect of Q methodology proves beneficial in assessing individual and group heuristics.

The central feature of the sorting activity is the conditions of instruction. This can be the simple agree disagree or the more pointed "operationalizations of theoretical constructs" (McKeown & Thomas, 1988, p. 30). When employing theoretical constructs, the Q-sorter is instructed to sort statements based on an a priori theory of interest. For example, a sorter may be asked to sort based on their perception of another person's perspective such as the sorter's perspective of the sorter's father's view of the sorter (Brown, 1980; McKeown & Thomas, 1988). This study will employ the simpler "most and least like my point of view" condition of instruction (McKeown & Thomas, 1988, p. 32).

Several clarifications about the conventions of the sorting task are helpful. While sorters place statements into a forced distribution pattern, they are free to place statements as they desire (McKeown & Thomas, 1988). Again, while quasinormal

distribution has little statistical meaning, it does offer the sorter a systematic approach to the sorting task. Further, the divisions along the sort continuum are not distinct or normal. Sorters judge "more or less" and not "either/or" (McKeown & Thomas, 1988, p. 35). Similarly, the sort has positive, negative, and zero divisions in order to avoid the most to least continuum (Stephenson, 1981). Statements placed in the zero division are neutral to the sorter and present no salience or meaning. All Q sorts are anchored to this neutral position in the same way with individual importance assigned by the sorter when placing statements toward the extents of the continuum (McKeown & Thomas, 1988; Stephenson, 1981, 2007). Ultimately, the conventions for sorting are more about practicality than about the overall operant subjective inquiry of Q-methodology.

For this study, all research data, archival and newly collected, were obtained based upon Walden University IRB approval 06-21-11-0036437 expiring June 20, 2012. Essentially, Q sorts for the three groups with collaborative experiences came from two sources. The two DIAD theory-based collaborative processes, I-80 SG and US 50 SWG, used archival data from two previous Walden University IRB approved KAM application studies. In each of these cases, the Q-sorting was undertaken as part of my practice as the facilitator and coach for these collaborative processes. The initial research assisted each group in their dialogue about decision making and was undertaken from a scholar practitioner perspective within the Walden University KAM application framework. Q sorts for both I-80 SG and US 50 SWG were collected voluntarily following a regular monthly meeting during the last third of each group's process. Conditions of instruction included: (a) an initial reading of all statement cards; (b) sorting into least and most like my view piles; (c) placing statement cards on predefined sorting mat alternating between

least and most like my view statements, (d) reviewing and redistributing statement cards if desired, and (e) discussing their impressions of the Q-sorting undertaking. The operant factor structure, demographic information, and individual sort feedback reflections results from these two KAM application projects were included in this research. The Q sorts for PDMSP were collected electronically using the flashQ (Hoodenpyle, 2011) web based application and the same conditions of instruction. Interestingly, Q-methodologists have determined that because of the self-referential aspect of the person unit of analysis, there is little difference in reliability and validity in collecting Q sorts electronically or in person (Reber, Kaufman, & Cropp, 2000).

Collected data were analyzed using PQMethod (Schmolk, 2002), a free personal computer based software program. The following analytic steps applied to both first and second-order analysis. Each set of Q sorts were coded into the software. Once individual P set data were entered, the software calculated the correlation matrix, performed the factor analysis including preselecting significant sorts, calculated Eigenvalues, performed factor rotations, and calculated factor scores. The Spearman correlation matrix that includes each member of the P set showed how relatively closely each Q sort correlates with the other Q-sorts. Correlation matrixes are more informational than analytical. Factor analysis was performed to determine individual cases that identify significantly with underlying factors. The factor analysis typically employs abductive reasoning seeking logical inference through an iterative process of hypothesis generation and testing using factor analysis (Brown, 1980, p. 236). Crucial was the statistical factor analysis performed for a determination of the significant factors. These factors were rotated using Varimax, a simplifying statistical procedure, to a terminal solution and all

significant Q sorts from the P set were flagged (McKeown & Thomas, 1988). The

analysis followed the rationale detailed in Table 3.

Table 3

Analytic Process

Phase of Analysis	Procedure	Rational
Identify initial first-order operant factors structures for each P set	Q technique from correlation matrix to normalized factor Q-sorts	Identify statistically viable first-order operant factors structures for interpretation
Interpret first-order operant factors structures for each P set	Integrate ideas from the interpretive framework to bring meaning to factors	Interpret initial meanings for operant factor structure within each group (research question 1)
Perform second-order factors analysis	Q technique from correlation matrix to normalized factor Q-sorts	Identify higher order operant factors structures and produce a *n* X *m* first and second-order factor intercorrelations table
Interpret second-order operant factors structures	Integrate ideas from the interpretive framework to bring meaning to factors	Ground higher order perspectives, "hunches", in collaborative theory
Compare and contrast first and second-order factors between cases	Analyze the intercorrelations from the second-order factor table	Identify differentiating perspectives among the cases (research question 2)
Generate a comprehensive assessment of factor interpretive results	Refine first-order operant factor structures based on insights from the second-order factor analysis	Generate a comprehensive framework for individual perspectives of collaborative public decision making (research question 3)

Two specific statistical measures were used. The first statistical measure was used

to determine significant Q sorts provided by the P set. The rule of thumb for correlation

significance is 2 to 2.5 time the standard error (SE) which is defined as 1/SQRT *N*. *N* is

the number of statements, 45, with a square root of 6.71. Therefore, significant sorts

ranged from 2(1/6.71) to 2.5(0.15) or 0.30 to 0.38. The second statistical measures was

significance levels, or p x SE, for specific Q sample statements within each normalized

factor statement array. At a 99% confidence interval, the significance was 2.58 x 0.15 or

0.39. At a 95% confidence interval the significance was 1.96 x 0.15 or 0.29. These

statistical measures provided significance while potential confounding cases were

identified through the abductive reasoning process. Further, these statistical measures are

included in PQMethod analysis software logic.

Role of the Researcher and Participant Protection

The data for this exploration came from archival and electronic sources.

Specifically, two of the three data sets were collected under Walden University IRB

approval. These data sets were used in this study as archival data under an additional

Walden University IRB approval 06-21-11-0036437. New data for the PDMSPs was

collected electronically via a webpage with PDMSP as the community partner. Potential

participants were contacted electronically. I identified myself as a Walden University

graduate researcher. Participation was confidential. Research results will be made

available to participants upon request. Using Q-methodology, which scientifically studies

subjectivity, methodological rigor was maintain while applying the abductive reasoning

skills essential for Q technique researchers (Brown, 1980, 1993; Stephenson, 1977, 1981,

2007). Q methodology recognizes and accommodates the embedded nature of the

researcher in the scientific study of subjectivity. Study participants freely explored their

individual meaning through the Q sample without influence from the researcher.

Essentially, by using a Q methodology for this study, I employed a methodology as

practical and contextual as collaborative governance itself. Such an approach ensures the

ethical and humane treatment of all study participants; past, present, and future.

Chapter 4: Results

The data collected and Q-methodological analysis performed in this chapter explored the following research questions.

1. What are collaboration participant perspectives of public decision making?

2. Do collaboration participant perspectives of public policy decision making vary between collaboration groups?

3. Do collaboration participant perspectives support collaborative public decision making?

Three Q sorts were collected from three P sets as follows. The US 50 SWG and the I 80 SG sorts Q-sorts, limited demographic information, and qualitative date were retrieved from archives of previous research. The third Q sort from the PDMSP P set was collected per Walden IRB protocol via the Q-sorting webpage from August 11, 2011 to August 24, 2011. Discussion and demographic data were collected during the individual members of the P sets online Q-sorting session. The second-order factor analysis performed utilized the first-order factor results from these three P sets.

All collected data were organized using spreadsheets for input into PQMethod (Schmolk, 2002). Once each set of Q sort data were entered, successive rounds of factor correlation and rotation were conducted to arrive at the following best fit results. The following results are based upon the PQMethod's (Schmolk, 2002) principle components analysis, judgment of Eigenvalues for practical significance, program pre-selection of significant Q-sort, and Varimax rotation. Based upon theoretical inspection of output results and the application of a second-order factor analysis, the PQMethod (Schmolk, 2002) results from this analytic protocol were reasonable.

The factor interpretations for the first and second-order P sets applied the following five phases of analysis. Phase one inspected the demographic and associated factor characteristics of significant Q sorts for the entire P set. Confounded Q-sort, negative correlations, and potential demographic anomalies were noted. Phase two inspected the significant statement characteristics for individual factors. The number of defining sorts, explanatory capacity, Eigenvalues, number of factor scores magnitude three or greater, rank comparison to other factor's weighted scores, and the number of significant Z scores were noted. Z scores were used to organize factor Q sort output into a distribution matching the original "forced quasinormal" distribution used to collect Q sorts (Brown, 1980, p. 243). Therefore the factor scores reported with these results were weighted to adjust the raw scores into the same -5 least like my view to +5 most like my view distributions detailed in Chapter 3. A summary statement of the implications of these factor characteristics has been prepared. Phase three evaluated the language of the distinguishing statements to establish an initial relationship between statements and potential meaning. Phase four began the transition from Q technique to Q-methodology. A short factor description integrating ideas from the interpretive framework for this study, collaborative governance, subjective communication, and complexity science, was generated. Phase five of the analysis for the first and second-order P sets drew upon abductive reasoning to provide a summary review of the factor dynamics for each P set. The results from these five phases of analysis for each first and second-order P set were ultimately evaluated to answer the three questions explored in this study.

US 50 Stakeholder Working Group

The US 50 SWG P set contained 20 Q sorts with one participant providing two Q-sorts. As reported in Table 4, gender was balanced, professional orientations diverse, and age distinctions typically favoring 50 years and above. The explanatory capacity of each factor was roughly proportional to the number of Q sort representing that perspective. Seventeen Q sorts loaded onto a factor, Q sort P showed no factor correlation, and Q sorts F and O were confounded across all three factors. Confounded sorts share significant correlation with one or more other factors and often provide an interpretive bridge between factors. Providing additional interpretive bridging between factors were the negative correlation of factor loaded Q sorts E and R. Negative correlations signify an ordering of statements in a polar opposite fashion between factors (McKeown & Thomas, 1988). Finally, the two Q sorts provided by a single person, G1 and G2, loaded on the same factor thus reinforcing Stephenson's (1977) claim of individual factor reliability through time. Further, this unplanned test-retest reinforces Brown's (1980) recognition of reliability "under stable conditions" short of a life changing experience (p. 289).

An inspection of the loaded factors and participant demographic information noted three patterns. Pattern one noted nine community advocates with one confounded, one, not significant, and four of the remaining seven loading on Factor UF1. Similarly for UF1, seven of the 10 participants loading on the factor were 50 years and older. Pattern three noted two of three participants loading on Factor UF2 were engineers.

Table 4

US 50 SWG Demographics and Factor Characteristics

Q-Sort	Gender	Profession	Age	UF1	UF2	UF3
A	Female	Project Technician	40-49	0.24	0.25	0.58X
B	Male	Project Manager	30-39	0.64X	0.34	0.28
C	Female	Community Advocate	50-59	0.68X	0.24	0.17
D	Female	Community Advocate	50-59	0.79X	0.17	0.32
E	Female	Project Manager	50-59	0.72X	-0.16	0.16
F	Male	Community Advocate	60-69	0.38	0.20	0.35
G1	Female	Community Advocate	60-69	0.42	0.04	0.60X
G2	Female	Community Advocate	60-69	0.12	0.06	0.60X
H	Male	Technical Professional	50-59	0.56X	0.41	0.01
I	Female	Community Advocate	50-59	0.65X	0.06	0.12
J	Male	Planner	30-39	0.36X	0.14	0.17
K	Male	Engineer	30-39	0.41	0.56X	0.16
L	Female	Project Manager	50-59	0.63X	0.23	0.52
M	Male	Engineer	20-29	0.14	0.63X	0.10
N	Female	Planner	30-39	0.41	0.04	0.42X
O	Female	Community Advocate	60-69	0.40	0.55	0.39
P	Male	Community Advocate	70-79	0.17	0.24	-0.22
Q	Male	Scientist	40-49	0.56X	0.27	0.34
R	Female	Community Advocate	70-79	-0.13	0.44X	0.07
S	Female	Community Advocate	60-69	0.66X	0.07	0.19
Number of Defining Sorts				10	3	4
Average Relevance Coefficient				0.80	0.80	0.80
Composite Reliability				0.98	0.92	0.94
S.E. of Factor Scores				0.16	0.28	0.24
Eigenvalue				7.18	1.09	0.93
% Explanatory Variance				25	10	12

Factor UF1

From Table 4, ten Q sorts loaded on Factor UF1, explained 25% of the variance, and generated a practically significant Eigenvalue of 7.18. Distinguishing statements for Factor 1 are contained in Table 5. Factor UF1 had four of 10 distinguishing statements significant at a level of $P < .01$. Four factor scores ranked higher, two between, and four lower than, the other factor scores for Factors UF2 and UF3. One distinguishing statement was magnitude three or greater. Factor UF1 distinguishing statements indicated a distinction between the three factors yet may have a strong dependence, or statistical relationship with at least one other factor. From Table 4, confounded Q sort F reinforces this potential dependence with 0.38 Factor UF1 and 0.35 Factor UF3 correlations respectively. This relationship was beyond typical orthogonal inter factor relationships.

Factor UF1 perspectives recognized the dependencies between relationships and the need to work for a common good as noted in communal overtones of statements 30, 24, 43, and 15. Specifically, statement 43 uses the metaphor of family as a model for public decision making. Further, statements 36, 22, and 17 imply Factor UF1 views which appeared ambivalent about external pressure and the justice of applying laws. Statements 34 and 39 suggested decision making should use processes that cope with historical conditions. Governance was engaging and ongoing, communication aimed at finding mutual gains outcomes as the system operates under its own set of rules. Factor UF1 viewed public decision making as a *consensus self governance system* (Chettiparamb, 2006; Innes & Booher, 2010; Niemeyer, 2011; Rhodes & Murray, 2007; Wagenaar, 2007).

Table 5

UF1 Distinguishing Statements

No.	Statement	Factor UF1 Rank	Factor UF1 Z-Score	UF2 Rank	UF3 Rank
30	When people are dependent on each other they should negotiate the solutions to problems.	4	1.28	1	1
24	The power for decision making can be shared.	2	0.98*	-2	0
43	The harmony, selflessness, and sense of community in families provide a model for decision making.	2	0.82	-1	0
34	Good decisions are judged successful based on their process and effects beyond that process.	2	0.74	-3	4
15	Achieving a desired state of affairs is the practical aim for decision makers.	1	0.40*	-2	-1
36	Changing conditions makes adjusting the way people think about issues and decisions essential.	0	-0.04	2	3
22	Without pressure to change how decisions are made, change is unlikely.	0	-0.08*	3	5
20	Reasonable decisions meet both the decision maker's viewpoint and desire.	-1	-0.19	-2	-2
39	Achieving goals requires choosing to move past previous decisions without becoming attached.	-1	-0.48*	-4	2
17	Decision making is the balanced application of the laws and rules we make.	-2	-0.57	2	0

Note: *P* < .05; Asterisk (*) Indicates Significance at *P* < .01

Factor UF2

From Table 4, three Q sorts loaded on Factor UF2, explained 10% of the variance, and generated a practically significant Eigenvalue of 1.09. Table 6 contains Factor UF2 distinguishing statements. Three Q sorts loaded on Factor UF2 with 11 of 12 distinguishing statements significant at a level of *P* < .01. Five factor scores ranked higher, seven lower, than other factor scores. Eight of the 12 distinguishing statements

were magnitude three or greater. From Table 4, confounded Q sort O had 0.55 Factor UF2 correlation and 0.40 Factor UF1 and 0.39 Factor UF3 correlations respectively. Q sorts D, G1, G2, I, J, and N all had weak Factor UF2 correlations of less that 0.20 with Q sort E having a -0.16 correlation. The lack of confounded Q sort O, number of statements, their significance, and the magnitude of the factor scores of the distinguishing statements for Factor UF2 indicated a strong independence from the other two factors.

Factor UF2 viewed decision making as a scientific undertaking. As statements 1, 2, 19, and 4 revealed, only information deemed pertinent by the decision-maker was given value in an argument similar to ceteris paribus principles of analysis. Further, from this perspective, as statements 44, 28, 27, and 39 imply, it was of little value to incorporate the perspectives of those impacted by decisions. Essentially, decision making was an application of rational choice based on established rules, laws, and. expert knowledge. This perspective viewed governance as communicating the linear cause-and-effect interpretations of scientific knowledge implied in expertly derived rules. In short, Factor UF2 viewed public decision making as the *professionalized government* (Agger & Löftgren, 2008; Dryzek, 2009; Fung, 2006; Morçöl & Wachhaus, 2009; Weir et al., 2009; Yanow, 2009).

Table 6

UF2 Distinguishing Statements

			Factor		
		UF1	UF2		UF3
No.	Statement	Rank	Rank	Z-Score	Rank
2	Placing boundaries and using rules of thumb with sources of information leads to timely	-1	5	1.70*	-2
1	Decision makers carefully study all alternatives using well defined goals leading to the best	-3	3	1.14*	-2
4	Better decisions come from limiting and structuring participation, tighter planning, and centralization.	-4	1	0.70*	-5
44	Supportive institutions come when decisions makers focus on increasing people's	3	0	-0.21*	2
19	People with authority for decision are informed, reasonable, and render personally neutral decisions.	-5	0	-0.22*	-4
3	Decision makers know what people want and why.	-4	-1	-0.62	-5
34	Good decisions are judged successful based on their process and effects beyond that process.	2	-3	-0.89*	4
28	Giving people affected by a public action the ability to make their own decisions is important.	3	-3	-0.91*	2
27	There are many different people responsible for decisions and they need to work together.	5	-3	-1.00*	3
42	Our views of ourselves helps develop our decision making style and hinders our use of	-1	-4	-1.27*	0
39	Achieving goals requires choosing to move past previous decisions without becoming attached.	-1	-4	-1.38*	2
25	Laws exclude, ban, and prohibit the essentials of decision making.	-2	-5	-2.05*	-1

Note: $P < .05$; Asterisk (*) Indicates Significance at $P < .01$

Factor UF3

From Table 4, four Q sorts loaded on Factor UF3, explained 12% of the variance,

and generated a practically significant Eigenvalue of 0.93, just under the 1.00 value and

acceptable. Distinguishing statements for Factor UF3 are in Table 7. Factor UF3 had

eight of 13 distinguishing statements significant at a level of $P < .01$. Six factor scores

ranked higher, and seven lower, than the scores of Factors UF1 and UF2. Five of the 13

distinguishing statements were magnitude three or greater. From Table 4, Q sorts C, E, H,

I, J, K, M, R, and S had weak Factor UF3 correlations of less than 0.20 with S-sort P

having a -0.22 correlation. Factor UF3 had a punctuated distinction among the three

factors with a dependence with the least one other factor.

Factor UF3 viewed decision making from an activist perspective. Statements 41,

13, 34, and 39 revealed the need for engaging processes that surface differences focused

on how to move from the past to the future together. The rejection of a single information

filter, statement 21, uneasiness with ad hoc processes, statements 40, 29, and 16, and

dismissal of traditional authority, statements 16 and 14, indicated a preference for

punctuated and purposeful decision making. Ultimately, governance was a punctuated

undertaking, communication explored realities, and systems needed to undergo

bifurcation events to be judged successful. Individuals with a Factor UF3 perspective

viewed public decision making as *deliberative governance episode* (Dryzek, 2009; Fung,

2006; Samoilenko, 2008).

Table 7

UF3 Distinguishing Statements

No.	Statement	Factor			
		UF1	UF2	UF3	
					Z-
		Rank	Rank	Rank	Score
41	The suppression of differences hinders decision making not the differences themselves.	1	1	5	2.07*
13	It is more important to figure out what to do than why something is when making a decision.	-4	-2	4	1.55*
34	Good decisions are judged successful based on their process and effects beyond that process.	2	-3	4	1.38
39	Achieving goals requires choosing to move past previous decisions without becoming attached.	-1	-4	2	0.83*
45	Working together on problem lets people share resources and form new ways of interacting.	5	5	1	0.70*
5	Decision makers focus on well defined problems rather than desirable ideas to be achieved.	-3	-1	1	0.66*
40	Our individual experiences provide improved grasp of issues and eventual decision making.	3	4	1	0.48
29	People solving problems and making decisions repeatedly have exchanges with each other about the problem.	2	3	0	0.21
16	Individuals responsible for applying laws make decisions and give directions.	0	1	-1	-0.68*
14	Decisions express the desires of the people making the decisions.	1	0	-2	-0.82
18	When authority for making a decision is questionable, adding information and changing the problem is needed.	0	1	-2	-0.83*
6	Decisions are made regularly so there is no need to fully know the consequences of alternative.	-5	-5	-3	-0.94*
21	The decision makers' viewpoint is used to screen information.	0	0	-3	-1.03

Note: $P < .05$; Asterisk (*) Indicates Significance at $P < .01$

Summary

The three perspectives of public decision making embodied in the US 50 SWG factors imply differing views of legitimate authority, notions of process, and the role of knowledge. Factor UF2 individuals stood alone with their adherence to the concept of scientific application of expert rules. To these individuals, decision making was a sterile and straightforward process of professional government. In contrast, neither the Factor UF1 perspective of public decision making by generating consensus self governance or the Factor UF3 perspective of deliberative governance episode viewed the process as sterile. Rather, the process required intense interaction of even remotely affected parties to ensure all relevant information was considered. However, when comparing Factor UF1 and Factor UF3 perspectives, a distinction about the underlying compulsion for decision making processes surfaced. For Factor UF1 perspectives, the decision making process was motivated by interdependencies between parties and the pragmatic goal of finding mutual gains solutions. Conversely, Factor UF3 perspectives were compelled to engage in decision making when underlying conditions were identified that required collective action to resolve: civic activism. The notion of civic activism was identified by the study participants as part of their lived experience described below.

The interpretation of these factors and perspectives were reached based on comments given during the Q-sorting and the language participants used to describe the work they accomplished such as, working together, transparency, change, and education (personal communication, 2007). Further, the commitment each member of the P set displayed by actively engaging, particularly community advocates in the nearly two year collaborative strategic planning process demonstrated civic activism. Interestingly,

several participants expressed satisfaction in doing the Q sorts and remarked how the activity help them focus on and think more deeply about public decision making.

Beyond the discussions about the Q sort and language participants adopted, the following brief review provides additional insight to the lived experience of the process. Highway 50 beyond the capital city, Carson City, has traditionally been a rural two-lane road. Significant in-migration to northern Nevada over the last 20 years has led to increased population in towns just east of Carson City. This residential population increase and resulting increase in traffic and safety concerns that prompted the long range corridor study. Additional rational stems from a long held separation of local land use and state level transportation planning. Land developer's influence distorts both generating a tensions relationship between agency officials, old-timers and the new residents, and elected officials. The focus of this contention often coalesced around the activities of the County commissioners. This placed the County manager under scrutiny. Further clouding these dynamics is the long-standing funding discrepancies between northern Nevada and southern Nevada. The north received a disproportionate share of resources and state agencies were being pressured to begin reconciling the issue. Within this background mix of issues were the many community advocates from the five distinct communities along the 50 mile expanse. Ultimately, though, the most prominent tension of the participants lived experience was the likely paralleling of this DIAD theory-based collaborative process with the County's traditional expert led master plan update process. This situation has been identified by Innes and Booher (2010) as a punctuated distinction of traditional and collaborative processes occurring in parallel. Much of the monthly

discussions with US 50 SWG participants dealt with the lack of transparency in the other process and the inclusiveness of their process.

I-80 Study Group

The I-80 SG P set contained 17 Q sorts with summary information contained in Table 8. Eleven participants were male, professional orientations were diverse with 10 participants 50 years old or older. The number of significant Q sorts per factor was roughly proportional to the factors explanatory capacity. Fourteen participants loaded on one of the three factors while Q sorts B, I and N were confounded across the three factors. Q sort A was negatively correlated for its significant Factors IF2 and IF3 as well. Negative correlations and confounded Q sorts assist with the inter factor interpretations. No demographic trends were detected with an inspection of the factor loading results.

Factor IF1

From Table 8, six Q sorts loaded on Factor IF3, explained 26% of the variance, and generated a practically significant Eigenvalue of 6.86. From Table 9, Factor IF1 had nine of 13 distinguishing statements significant at a level of $P < .01$. Seven of the factor score ranked higher, four lower, and two between other factor scores. Four distinguishing statements were magnitude three or greater. From Table 8, confounded Q sort I had a 0.53 Factor IF1 and 0.52 Factor IF2 correlations respectively. Similarly, confounded S-Q sort N had 0.57 Factor IF1 and 0.53 Factor IF3 correlations respectfully. Factor IF1 had a punctuated distinction between the three factors with a potential dependence with at least one other factor.

Table 8

I-80 SG Demographics and Factor Characteristics

Q-Sort	Gender	Profession	Age	IF1	IF2	IF3
A	Male	Engineer	50-59	0.15	-0.37X	-0.28
B	Male	Planner	50-59	0.42	0.34	0.54
C	Female	Planner	50-59	0.61X	0.30	0.32
D	Male	Engineer	30-39	0.74X	0.15	0.18
E	Female	Historic Preservation	50-59	0.40	0.49X	0.12
F	Male	Planner	50-59	0.46	0.12	0.56X
G	Male	Engineer	30-39	0.17	0.53X	0.48
H	Male	Technician	40-49	0.53	0.24	0.59X
I	Male	Environmentalist	60-69	0.53	0.52	0.25
J	Female	Bicycle Advocate	60-69	0.12	0.32	0.42X
K	Female	Community Advocate	50-59	0.40X	0.10	0.05
L	Male	Planner	30-39	0.14	0.54X	0.14
M	Male	Planner	50-59	0.21	0.82X	0.15
N	Male	Community Advocate	60-69	0.57	0.30	0.53
O	Male	Process Facilitator	40-49	0.86X	-0.01	0.21
P	Female	Project Manager	30-39	0.88X	0.18	0.15
Q	Female	Project Technician	40-49	0.45X	0.10	0.16
Defining Sorts				6	5	3
Average Relevance Coefficient				0.80	0.80	0.80
Composite Reliability				0.96	0.95	0.92
S.E. of Factor Scores				0.20	0.22	0.28
Eigenvalues				6.86	1.42	0.53
% Explanatory Variance				26	14	12

Table 9

IF1 Distinguishing Statements

No.	Statement	Factor			
		IF1		IF2	IF3
		Z-Score	Rank	Rank	Rank
28	Giving people affected by a public action the ability to make their own decisions is important.	5	1.83*	-2	-2
32	Giving attention to the process and conflict improves decision making.	4	1.51*	1	1
27	There are many different people responsible for decisions and they need to work together.	3	0.89	1	0
35	Using feelings allows decision makers to collect and correctly use information from new situations.	1	0.45*	-4	-1
36	Changing conditions makes adjusting the way people think about issues and decisions essential.	1	0.28*	-2	5
25	Laws exclude, ban, and prohibit the essentials of decision making.	0	-0.07*	-4	-3
18	When authority for making a decision is questionable adding information and changing the problem is needed.	0	-0.13	-3	-2
17	Decision making is the balanced application of the laws and rules we make.	-1	-0.19	4	-3
20	Reasonable decisions meet both the decision maker's viewpoint and desire.	-1	-0.27	-2	-3
7	Decision makers have certain solutions they like and apply them to many different situations.	-2	-0.41	2	3
6	Decisions are made regularly so there is no need to fully know the consequences of alternative.	-2	-0.45	-5	-4
42	Our views of ourselves helps develop our decision making style and hinders our use of other styles.	-2	-0.46*	3	1
12	Placing boundaries and using rules of thumb with sources of information leads to timely decisions.	-3	-1.20*	0	0

Note: *P* < .05; Asterisk (*) Indicates Significance at *P* < .01

Factor IF1 viewed decision making as a purposeful group undertaking. More specifically, as statements 28, 32, 27, and 35 revealed, the activity must engage the entire range of individuals impacted in order to identify all the issues and other perspectives. As statements 7, 42, and 12 implied, this perspective did not support passive decision making relying on personal preferences. Interestingly, Factor IF1 perspectives appeared hesitant about the social constructs of law and authority as indicated in statements 36, 25, 18, 17, and 6. Essentially, governance was an active undertaking among affected parties, engaged in communication about complex and changing information meant to construct a shared future, and strengthen the feedback relationships within the system. Factor IF1 individuals viewed public decision making as a *systematic organizing for collective action* (Ansell & Gash, 2008; Crozier, 2010; Duit & Galaz, 2008; Heath, 2010).

Factor IF2

From Table 8, five Q sorts loaded on Factor IF2, explained 14% of the variance, and generated a practically significant Eigenvalue of 1.42. Note, Q sort A loaded negatively. From Table 10, nine of 12 distinguishing statements were significant at a level of $P < .01$. Seven of the factor scores ranked higher and five lower than other factors. Five distinguishing statements were magnitude three or greater. Q sort A was negatively correlated with the remaining four significant Q sort indicating a significant bipolar, opposing relationship. From Table 8, Q sorts D, F, K, P, and Q had weak Factor IF2 correlations less than 0.20 with Q sort O having a -0.01 correlation. Factor IF2 had a punctuated distinction between the three factors with a potential dependence with at least one other factor.

Table 10

IF2 Distinguishing Statements

No.	Statement	IF1 Rank	IF2 Rank	IF2 Z-Score	IF3 Rank
16	Individuals responsible for applying laws make decisions and give directions.	-2	4	1.36*	0
17	Decision making is the balanced application of the laws and rules we make.	-1	4	1.36*	-3
41	The suppression of differences hinders decision making not the differences themselves.	2	4	1.33	0
15	Achieving a desired state of affairs is the practical aim for decision makers.	-1	2	0.89	0
1	Decision makers carefully study all alternatives using well defined goals leading to the best choice.	-4	1	0.52*	-5
23	Consulting many people about changing decision making reduces the chances for the change to occur.	-3	1	0.51*	-2
38	Recognizing and using new resources improves the sustainability of decisions.	2	0	-0.04*	3
3	Decision makers know what people want and why.	-5	0	-0.11*	-4
39	Achieving goals requires choosing to move past previous decisions without becoming attached.	2	-1	-0.49*	1
36	Changing conditions makes adjusting the way people think about issues and decisions essential.	1	-2	-0.87*	5
43	The harmony, selflessness, and sense of community in families provide a model for decision making.	1	-3	-1.13*	1
35	Using feelings allows decision makers to collect and correctly use information from new situations.	1	-4	-1.40	-1

Note: *P* < .05; Asterisk (*) Indicates Significance at *P* < .01

The authoritative application of laws and rules were at the center of decision making from a Factor IF2 perspective based on statements 16, 17, 41, 15, 1, and 23. Similarly, the discounting of statements 38, 3, 39, 36, 43, and 35 indicated Factor IF2 perspectives were indifferent to the idea that decision making was perhaps personal and required flexibility. Essentially, decision making authority began with the existing legal framework. However, statements 41, 15, 1, and 23 implied that the ethical application of law was an interactive undertaking. Public decision making, from a Factor IF2 perspective, was the *deliberative application of law* (Dryzek, 2009; Fung, 2006; Stephenson, 2007; Weir et al., 2009; Yanow, 2009).

Factor IF3

From Table 8, three Q sorts loaded on Factor IF3, explained 12% of the variance, and generated a practically significant Eigenvalue of 0.53. While this Eigenvalue fell below the 1.00 practical significance threshold, individual correlation between other factors and the relative explanatory capacity support the viability of Factor IF3. Essentially, as Brown (1980) noted, the convention that a significant factor needed an Eigenvalue 1.00 and above is "quite arbitrary and substantively meaningless, and occasionally meaningless in a statistical sense as well" (p. 40). Table 11 details information on the three Q sorts loaded on Factor IF3 *w*ith six of nine distinguishing statements significant at a level of *P* < .01. Six of the factor scores ranked higher, two lower, and one between the other two factor scores. Five distinguishing statements were magnitude three or greater. From Table 8, confounded Q sort B had correlations of 0.54 and 0.42 for Factors IF3 and IF1 respectively. Q sorts D, E, K, L, M, P, and Q had weak

Factor IF3 correlations less than 0.20. Factor IF3 had a punctuated distinction between the three factors with a shared correlation with potentially one other factor.

Table 11

IF3 Distinguishing Statements

		Factor			
		IF1	IF2	IF3	
					Z-
No.	Statement	Rank	Rank	Rank	Score
26	There are many different people responsible for decisions and they need to work together.	1	1	5	2.00*
36	Changing conditions makes adjusting the way people think about issues and decisions essential.	1	-2	5	1.69*
8	Decisions are made in small steps to allow decision makers to work together.	0	-1	3	0.94*
21	The decision makers' viewpoint is used to screen information.	0	0	2	0.89
14	Decisions express the desires of the people making the decisions.	0	-1	2	0.74*
9	A satisfactory decision is one that meets immediate needs.	-3	-4	-1	-0.35
35	Using feelings allows decision makers to collect and correctly use information from new situations.	1	-4	-1	-0.51
17	Decision making is the balanced application of the laws and rules we make.	-1	4	-3	-1.09*
29	People solving problems and making decisions repeatedly have exchanges with each other about the problem.	0	0	-3	-1.20*

Note: *P* < .05; Asterisk (*) Indicates Significance at *P* < .01

Decision making was a contextual imperative from a Factor IF3 perspective. This imperative had two dimensions. Statements 26, 21, and 14 imply a dimension of diverse engagement in which individuals explored their own interests. Statements 36, 8, and 17

implied pragmatic decision making based upon a situational need and not on a pre-existing authoritative construct. Each dimension of this contextual imperative for decision making resulted in new social constructs in which governance was the pragmatic undertaking of interacting and communicating to cope with change and generate shared heuristics of the future. A Factor IF3 perspective viewed public decision making as undertaking *meaning making as decision making* (Dryzek, 2009: Hibbert & Huxham, 2010: Stephenson, 1980; 2007; Wagenaar, 2007).

Summary

Individual perspective revealed within the I-80 SG differed based on the efficacy of regulatory authority and the appropriate approach for coping with perceived deficiencies. An advantageous point of comparison was drawn from Factor IF2 perspective that decision making must be undertaken from existing construct of authority and law. Further, from this departure point, a Factor IF2 perspective viewed the ethical application of law as a deliberative process that explores differences. Conversely, a Factor IF1 perspective approached the law and authority cautiously preferring instead to rely on decision making through a systematic organizing of process and content leading to collective action among affected parties. While Factor IF1 views focused on systematically coping with complex dynamics, Factor IF3 perspectives focused on situational coping. Similar to Factor IF1 cautious perceptions about law and authority, Factor IF3 viewed established authority structures as a hindrance to personal pragmatic problem solving. Factor IF1 and Factor IF3 perceptions contrasted concerning ill ease with law and authority, the former for its obstruction of the collective best interest and the later for its limitation of the individual self interest.

These interpretive reflections are substantiated by events encountered within this collaborative strategic planning process that cast doubt on previously unquestioned authoritative information. The region engages in fiscalized land-use with local jurisdictions openly competing for revenue-generating land uses. These practices led to a legal ruling on the annexation rights for local cities (Truckee Meadows Regional Planning, 2011). Within this political environment, it was the regional authority's practice to accept unquestioningly local jurisdiction land-use plans without regard to control totals for future regional population. Ultimately, the regional travel demand model, the authoritative information was unconstrained for planning inputs and for future fiscal resources. This authoritative information was meant to substantiate the region's planning efforts. Doubts appeared about the model's output for planning purposes. These doubts appear to have contributed to a concern with authoritative information and the process behind that information. Innes and Booher (2010) highlighted this questioning of data while advocating for joint fact finding among collaborative parties. Thus, the mutually agreed upon response to the questioning of the legitimacy of the regional travel demand model was to undertake a consensus-based collaboration modeling effort tailored to this particular situation. Interestingly, most participants providing Q sorts indicated they had a positive experience sorting the statements and stated they believed they had a clearer understanding of public decision making. However, the Q sort was conducted after the events with the authoritative information occurred. The Q sort activity likely incorporated participant reflections on these events. Finally, participants in this strategic master plan used terms such as open, transparent, talking with each other, relationships,

the need for change, and new ways of doing things in describing their work (personal

communication, 2009).

PDMSP

The supporting professionals group, PDMSP, P set contained 17 Q-sorts. Table 12

shows gender participation was balanced while professional representation was seven

engineers among other professions. Ages were diverse. Sixteen participants loaded on

one of the four factors with Q sort L being confounding. The explanatory capacity of

each factor was roughly proportional to the number of Q sort representing that

perspective. Note, Factor PF2 had a single Q-sort, N, explained 5% of the variance with a

factor loading of 0.56. As Brown (1980) noted, this is the type of single Q sort within a

factor that provides theoretical interpretive insights beyond the statistics (p. 222). Slightly

negatively correlated factors were calculated for Q sorts D, G, J, M, and O and a more

pronounced negative correlation for Q sort N. An inspection of the demographic

information revealed five on the eight significant factor loading for Factor PF1 belonged

to engineer who were nine for the 17Q sorts collected. Finally, the lone PF2 significant Q

sort was an engineer.

Factor PF1

From Table 12, eight Q sorts loaded on Factor PF1, explained 27% of the

variance, and generated a practically significant Eigenvalue of 6.69. Table 13 reveals

Factor PF1 had three of six distinguishing statements significant at a level of $P < 01$. Four

of the factor scores ranked higher, and two similar to other factor scores. Four

distinguishing statements were magnitude three or greater. From Table 12, confounded Q

sort L had correlations of 0.53, 0.56, and 0.43 for Factors PF1, PF2, and PF3

respectively. Interesting, only Q sorts N and O had weak Factor PF1 correlations less than 0.20. Factor PF1 was independence from the other three factors based upon magnitude of the distinguishing statements with potential dependencies based on a confounded Q sort and correlations with other Q-sorts.

Table 12

PDMPS Demographics and Factor Characteristics

Q-Sort	Gender	Profession	Age	PF1	PF2	PF3	PF4
A	Female	Educator	40-49	0.56X	0.05	0.32	0.36
B	Male	Engineer	50-59	0.78X	0.24	0.19	0.11
C	Female	Engineer	30-39	0.69X	0.10	0.30	0.32
D	Male	Engineer	30-39	0.61	-0.01	-0.04	0.68X
E	Female	Engineer	50-59	0.21	-0.07	0.23	0.68X
F	Male	Educator	50-59	0.30	0.20	0.66X	0.25
G	Male	Planner	40-49	0.71X	0.03	0.09	0.35
H	Male	Engineer	40-49	0.52X	0.31	0.31	0.04
I	Female	Engineer	50-59	0.66X	0.01	0.13	0.45
J	Male	Planner	60-69	0.02	-0.07	0.26	0.36X
K	Female	Planner	40-49	0.03	0.11	0.50X	0.14
L	Female	Educator	60-69	0.53	0.56	0.43	0.02
M	Female	Project Manager	40-49	0.39	-0.04	0.14	0.67X
N	Male	Engineer	40-49	0.12	0.56X	0.14	-0.25
O	Male	Architect	30-39	0.15	-0.07	0.08	0.35X
P	Female	Public Engagement	40-49	0.65X	0.11	0.04	0.13
Q	Make	Process Facilitator	40-49	0.78X	0.08	0.09	0.29
Defining Sorts				8	1	2	5
Average Relevance Coefficient				0.80	0.80	0.80	0.80
Composite Reliability				0.97	0.80	0.89	0.95
S.E. of Factor Scores				0.17	0.45	0.33	0.22
Eigenvalues				6.69	1.52	0.23	0.88
% Explanatory Variance				27	5	8	14

Table 13

PF1 Distinguishing Statements

		Factors				
		PF1		PF2	PF3	PF4
No.	Statement	Rank	Z-Score	Rank	Rank	Rank
33	By not participating in making decisions people leave their interests from being included in the final solution.	5	1.95	2	0	0
28	Giving people affected by a public action the ability to make their own decisions is important.	5	1.59*	0	0	2
34	Good decisions are judged successful based on their process and effects beyond that process.	4	1.38*	0	1	0
30	When people are dependent on each other they should negotiate the solutions to problems.	3	1.26	0	1	0
22	Without pressure to change how decisions are made, change is unlikely.	2	1.11	0	0	5
10	Making reasonable decisions is a challenge because we have to study more information than we are able.	-1	-0.60	1	5	-1

Note: $P < .05$; Asterisk (*) Indicates Significance at $P < .01$

The authority and resulting process for decision making relied on engaging in proactive empowerment. Statements 33, 28, 34, 30, and 22 vigorously supported the concept that parties to a decision were interconnected and reliant upon each other thus requiring each to be empowered to participate in the decision making process. As the rejection of statement 10 reveals, this perspective extended to the rejection of the notion of simplifying naturally complex situations. Governance was the prerogative of the government, generative communication was central to governing, and interactions were

essential to coping with complex systems. A Factor PF1 perspective of public decision making believed in *actively empowered governance* (Innes & Booher, 2004; 2005; Heath, 2007; Rhodes & Murray, 2007; Wagenaar, 2007).

Factor PF2

From Table 12, one Q sort loaded on Factor PF2, explained 5% of the variance, and generated a practically significant Eigenvalue of 1.52. Details in Table 14 show Factor PF2 had five of seven distinguishing statements significant at a level of $P < .01$. Four of the factor scores ranked higher, and three lower, than other factor scores. Four distinguishing statements were magnitude three or greater. From Table 12, Q sorts A, C, F, G, I, K, P, Q had weak Factor PF2 correlations of les that 0.20. Q sorts D, E, J, M, and O had negative correlation of -0.01, -0.07, -0.07, -0.04, and -0.07 respectively. Factor PF2 was, based on the negative correlation with Factor PF4 and the magnitude, significance of distinguishing statements, and lack of correlation with other S-sorts, independent from the other three factors.

From a Factor PF2 perspective, statements 19 and 3 implied a benevolent aspect to decision making based on the knowing and rendering of decisions. Reinforcing this benevolent perspective was the rejection of the need for change, statement 37, personal reflection, statement 42, or the need for collective decisions, statement 27. Factor PF2 viewed the legitimacy of representational government as the consistent, impersonal, and impartial application of authority through one-way communication. This perspective perceived public decision making as *exercising benevolent government* (Dryzek, 2009; Innes & Booher 2005; Webster, 2009; Weir et al., 2009; Yanow, 2009).

Table 14

PF2 Distinguishing Statements

No.	Statement	PF1 Rank	PF2 Rank	PF2 Z-Score	PF3 Rank	PF4 Rank
19	People with authority for decision are informed, reasonable, and render personally neutral decisions.	-5	4	1.49*	-4	-5
3	Decision makers know what people want and why.	-4	3	1.12*	-5	-5
4	Better decisions come from limiting and structuring participation, tighter planning, and centralization.	-5	2	0.74*	-4	-2
9	A satisfactory decision is one that meets immediate needs.	-2	1	0.37	-3	-3
37	Periods of steadiness and unsteadiness allows decision makers to create new ways of doing things.	1	-2	-0.74	3	1
42	Our views of ourselves helps develop our decision making style and hinders our use of other styles.	0	-4	1.49*	2	2
27	There are many different people responsible for decisions and they need to work together.	4	-4	-1.49*	2	2

Note: *P* < .05; Asterisk (*) Indicates Significance at *P* < .01

Factor PF3

From Table 12, two Q sorts loaded on Factor PF3, explained 8% of the variance, and generated a practically significant Eigenvalue of 0.23. Factor PF3 was deemed a viable factor despite the relatively low Eigenvalue based on Brown's (1980, p. 40)) views on the importance of theoretical verses statistical significance, successive calculation of factor correlations, and the explanatory interplay with Factor PF4. Further, as Table 15 reveals, all three distinguishing statements for Factor PF3 were significant at *P* < .01. All

factors scores for the three distinguishing statements were higher than other factor scores

and had factors score magnitudes greater than three. From Table 12, Q sorts B, G, I, M,

N, O, P, Q had weak correlations of less than 0.20 for Factor PF3 with Q sort D

negatively correlated at -0.04. Ultimately, Factor PF3 had a particular distinction from

the other three factors.

From a Factor PF3 perspective, the central concern for decision making was the

proper identification of a problem based upon the breath of concerns, issues, and complex

information. When a properly specified problem, statement 5, could be articulated from

the milieu, statements 41 and 10, the solution was obvious. Essentially, governance was

about organizing the details through communication focused on indentifying complexity.

Therefore, public decision making was *complex governance identified* (Dryzek, 2010;

Rhodes & Murray, 2007; Wagenaar, 2007).

Table 15

PF3 Distinguishing Statements

		Factors				
		PF1	PF2	PF3		PF4
No.	Statement	Rank	Rank	Rank	Z-Score	Rank
41	The suppression of differences hinders decision making not the differences themselves.	**1**	0	5	1.86*	1
10	Making reasonable decisions is a challenge because we have to study more information than we are able.	-1	1	5	1.82*	-1
5	Decision makers focus on well defined problems rather than desirable ideas to be achieved.	-3	-2	4	1.36*	-1

Note: *P* < .05; Asterisk (*) Indicates Significance at *P* < .01

Factor PF4

From Table 12, five Q sorts loaded on Factor PF4, explained 14% of the variance, and generated an Eigenvalue of 0.88. As Table 16 shows, Factor PF4 had six of seven distinguishing statements significant at a level of $P < .01$. Six of the factor scores ranked higher and one lower, than other factor scores. Five distinguishing statements were magnitude three or greater. From Table 12, Q sorts B, H, K, and P had weak correlations of less than 0.20 with Factor PF4. Q sort N had a significant negative correlation at -0.25. Factor PF4 was distinct from the other three factors.

The Factor PF4 views approached decision making from a personal perspective, as a reflective practice. Statements 42, 14, 7, and 21 reveal decision making as a personal undertaking in which both the decision and internal process were scrutinized. Further, according to statement 22, it was imperative that external pressures existed in order for the individual to improve their decision making. Therefore, individual decisions based on this reflective practice aggregated to collective decisions based upon statement 11. Collective governance came from personal governance with communication focused on individual reflection and complexity of collective governance. Ultimately, the result of these personal reflections about public decision making aggregated to reflective governance decisions. For Factor PF4 perspectives, public decision making was *personal governance practice* (Heath, 2010; Niemeyer, 2010; Rhodes & Murray; Stephenson, 1980, 2007; Yanow, 2009).

Table 16

PF4 Distinguishing Statements

		Factors				
		PF1	PF2	PF3	PF4	
						Z-
No.	Statement	Rank	Rank	Rank	Rank	Score
22	Without pressure to change how decisions are made, change is unlikely.	2	0	0	5	1.92*
42	Our views of ourselves helps develop our decision making style and hinders our use of other styles.	0	-4	1	5	1.43*
14	Decisions express the desires of the people making the decisions.	0	-3	-4	4	1.22*
7	Decision makers have certain solutions they like and apply them to many different situations.	0	-3	-3	4	1.20*
11	Organizational decisions result from individuals making their own personal decisions.	-1	-5	-2	3	0.91*
21	The decision makers' viewpoint is used to screen information.	-2	-2	-2	2	0.86*
4	Better decisions come from limiting and structuring participation, tighter planning, and centralization.	-5	2	-4	-2	-0.83

Note: *P* < .05; Asterisk (*) Indicates Significance at *P* < .01

Summary

Participant perspectives revealed about public decision making within P set

PDMSP highlighted the importance of the loci of authority. A simple example of this loci

perspective was revealed with views of the Factor PF2 individual who viewed decision

making as exercising benevolent government. The locus of authority was within the

government structure. When the loci of authority shifted to individuals, such as with a

Factor PF4 perspective, decision making became a personal reflection on the true nature

of public issues. The individual authority loci produced personal governance practice. Further, when the compelling nature of the public issues captures the loci of authority, individuals with a Factor PF3 perspective viewed decision making as an undertaking of complex governance identified. Authority was within the process of making sense of the milieu surrounding the public issue. Perhaps the most complex and unpredictable loci of authority was in assigning authority or empowerment. A Factor PF1 perspective believed the legitimacy of authority for public decision making was solely with empowered governance. Only individuals affected by a decision had authoritative standing in the process leading to that decision. Interestingly, each of these perspectives on the loci of authority comes from individuals who support public decision making with only marginal direct personal involvement in the outcomes.

Participant reflections from the PDMSP P set about the Q-sorting activity reinforced these interpretations about the nature of authority. Many participants struggled with the meaning of least and most like my point of view. Essentially, they were trying to distinguish between what public decision making should be and their perceptions of how it is actually done. As individuals providing technical support for public decision making, this third party perspective would challenge personal views about the process, content, and authority for public decision making. Many of these participants experienced the civic activism of the US 50SWG and the struggle with authority within the I-80 SG. Specifically, they were tasked with accommodating the unsubstantiated information from the County's master plan study in the US 50 SWG process and developing the consensus-based collaborative model in the I-80 SG process. Ultimately, though, participants providing Q sorts indicated an overall positive experience despite their frustrations with

differentiating statements. Each participant indicated the activity was interesting and "thought provoking" (PDMSP respondent communication, 2011).

Implication for Research Question 1

1. What are collaboration participant perspectives of public decision making?

The tree P sets of interest for this study produced a total of 10 distinct factors revealing equally distinct perspectives of public decision making. Individual factors displayed a range of internal statistical conditions and external relationships to other factors within each individual P set. Further, each factor provided nuanced perspectives on the authority, process, and content of public decision. This provided ample analytic space for employing the interpretive framework identified for this study and for ultimately surfacing the richness of data needed for abductive reasoning leading to insights. The ten factors identified within the three P set factor structures are summarized below and discussed from the potentially most collaboratively oriented to the least.

Factors PF1, UF1, and IF1 seemed to embrace collaboration. Factor PF1 perspectives implied actively empowered governance which recruits all parties, even the unorganized and underrepresented, into engaging purposeful collaborative processes. Factor UF1 perspectives suggested that collaboration generates a consensus self governance system from the diversity of relationships nurtured through the process. Factor IF1 perspectives seemed to advocate for systematic organizing for collective action which focused on engaging the widest diversity of parties with a collaborative process that meets all their needs. The perspectives of each of these three factors advocated for an active engagement process with little obvious regard for authority or content.

Factors UF3, IF3, PF4, and PF3 appeared to support collective decision making with particular caveats on how to accomplish the undertaking. Factor UF3 perspectives implied that a deliberative governance episode was a more productive version of citizen activism. Factor IF3 perspectives seemed to situate public decision making as a personal meaning making endeavor with individuals exploring and making sense of complex information in order to provide a just and equitable personal decision. Factor PF4 perspectives appeared focused on public decision making as an individual journey of personal governance practice to reach fair and ethical decisions. Factor PF3 perspectives suggested that complex governance identified the organizing of complex information in a way that provided obvious direction for proper public decision making. The perspectives for each of these four factors appeared to entangle the public decision making process with a sense of the implications of the process on personal reflections and ways of knowing.

Factors IF2, PF2, and UF2 suggested that public decision making was the primary domain of government authority. Factor IF2 perspectives implied that public decision making was the deliberative application of law in which existing laws, rules, regulations, policies, and procedures, for example, provided the precedent for decision making and were also subject to deliberation about their appropriateness. Factor PF2 perspectives suggested that proper public decision making required exercising benevolent government with decisions being rendered with morality and fairness. Factor UF2 perspectives appeared to support the concept of professionalized government with knowledgeable government experts making objective impartial decisions. The perspectives for each of

these three factors seemed focused on the idea of a rational representative model of democratic government operating as an efficient machine.

In summary, at the individual factor level of analysis which was the focus of research question 1, 10 distinct factors were identified. While each factor captured unique perspectives on the process, content, and authority of public decision making, the interpretive framework of collaborative governance, subjective communication, and complexity science highlighted certain attributes for categorization. The three broad categories of perceptions about public decision making appeared to be: (a) enthusiastic support for collaborative processes; (b) personal reflective journeys supporting collective approaches; and (c) advocating for rational representative government.

Second-order Factor Analysis

The data in Table 17 were obtained by following the same analytic strategy used in the first-order factor analysis: (a) principle components analysis; (b) personal judgment of Eigenvalues for practical significance; (c) software pre-selection of significant Q-sort; (d) and Varimax rotation. All 10 first-order factors loaded on one of three significant second-order factors: five for SOF1, two for SOF2, and three for SOF3. Factors UF1 and UF3 from the US 50 SWG P set loaded on Factor SOF1 thus substantiating the dependence observed in the first-order factor analysis. Similarly, PDMSP Factors PF1 and PF3 loaded on Factor SOF1 verifying a statistical relationship or dependence. The fifth significant first-order factor for Factor SOF1 was Factor IF1. Factor SOF2 had significant loadings from first-order factors Factor UF2 and Factor PF2. Factor IF2 and Factor IF3 loaded with Factor PF4 as the significant first-order factors for Factor SOF3. Interestingly, Factors SOF1 and SOF3 had similar explanatory capacity and 29% and

22% with significant factors loadings of five and three first-order factors respectively.

Finally, first-order factors IF1, PF2, and PF4 had slight negative correlations with other

second-order factors.

Table 17

First and Second-order Factor (SOF) Intercorrelations and Factor Characteristics

First-order Factors with Descriptive Statements	SOF1	SOF2	SOF3
UF1 consensus self governance system	0.66X	0.20	0.57
UF2 professionalized government	0.05	0.49X	0.28
UF3 deliberative governance episode	0.56X	0.27	0.38
IF1 systematic organizing for collective action	0.88X	-0.05	0.30
IF2 deliberative application of law	0.27	0.40	0.57X
IF3 meaning making as decision making	0.37	0.11	0.73X
PF1 actively empowered governance	0.87X	0.07	0.45
PF2 exercising benevolent government	0.05	0.47X	-0.06
PF3 complex governance identified	0.49X	0.37	0.10
PF4 personal governance practice	0.31	-0.06	0.69X
Defining Sorts	5	2	3
Average Relevance Coefficient	0.80	0.80	0.80
Composite Reliability	0.95	0.89	0.92
S.E. of Factor Scores	0.22	0.33	0.28
Eigenvalues	4.66	0.71	0.54
% Explanatory Variance	29	9	22

Factor SOF1

From Table 17, five first-order factors loaded on Factor SOF1, explained 29% of

the correlation, and generated an Eigenvalue of 4.66. From Table 18, Factor SOF1 had

six of 10 distinguishing statements significant at a level of $P < .01$. Six of the factor

scores rank higher, two lower, and two similar to other factor scores. Five distinguishing

statements were magnitude 3 or greater. From Table 17, Factors UF2 and PF2 had weak

Factor SOF1 correlations of 0.05 each. Factor SOF1 was distinct from other factors.

Table 18

SOF1 Distinguishing Statements

		Factor			
		2nd F1		2nd F2	2nd F3
No.	Statement	Rank	Z-Score	Rank	Rank
28	Giving people affected by a public action the ability to make their own decisions is important.	5	1.72*	-2	-1
27	There are many different people responsible for decisions and they need to work together.	4	1.44*	-4	1
44	Supportive institutions come when decisions makers focus on increasing people's participation.	3	1.21	-1	0
34	Good decisions are judged successful based on their process and effects beyond that process.	2	1.14	-2	1
29	People solving problems and making decisions repeatedly have exchanges with each other about the problem.	0	0.17*	4	-2
20	Reasonable decisions meet both the decision maker's viewpoint and desire.	0	-0.33	-3	-3
42	Our views of ourselves helps develop our decision making style and hinders our use of other styles.	-1	-0.34*	-5	4
25	Laws exclude, ban, and prohibit the essentials of decision making.	-1	-0.46*	-4	-3
16	Individuals responsible for applying laws make decisions and give directions.	-2	-0.55*	2	0
4	Better decisions come from limiting and structuring participation, tighter planning, and centralization.	-4	-1.81	2	-2

Note: $P < .05$; Asterisk (*) Indicates Significance at $P < .01$

For Factor SOF1, legitimacy for decision making came from empowering and

supporting affected individuals, statements 28 and 44, to be engaged in an inclusive

decision making process, statements 27 and 34. Empowerment authority and process

legitimacy through engagement were viewed as practical approaches to coping with

complex public issues. Further, this pragmatic perspective differed from other second-

order factor perspective with less support for legal authority, statements 25 and 16, and

an aversion to the practice of simplification, statement 4. Similarly, as statements 29, 20,

and 42 imply, this pragmatic empowerment perspective gives little credence to casual

decision making practices. Ultimately, the uncertainty of collaborative governance was

embraced, interpersonal communication encouraged, and complexity accepted. These

statements imply DIAD theory-based collaboration. From a Factor SOF1 perspective,

public decision making should be *collaborative decision making* (Booher & Innes, 2010;

Innes & Booher, 2004; 2005; 2010; Rhodes & Murray, 2007; Wagenaar, 2007).

Factor SOF2

From Table 17, two first-order factors loaded on Factor SOF2 and generated an

Eigenvalue of 0.71. While this Eigenvalue was below 1.00, a 9% explanatory variable for

two Q sorts implied Factor SOF2 had practical significance. From Table 19, Factor SOF2

had 11 of 14 distinguishing statements significant at a level of $P < .01$. Nine of the factors

scores ranked higher and five lower, than other factor scores. Seven distinguishing

statements were magnitude three or greater. From Table 17, Q sorts UF1, IF3, and PF1

had weak Factor SOF2 correlations of less than 0.20. Q sorts IF1 and PF4 were

negatively correlated at -0.05 and -.06 respectively. Factor SOF2 was independent from

the other two second-order factors.

Table 19

SOF2 Distinguishing Statements

No.	Statement	Factor 2nd F1 Rank	2nd F2 Rank	Z-Score	2nd F3 Rank
31	Using facilitation and mediation improves cooperation, group image, and decision making.	3	5	2.00	3
1	Decision makers carefully study all alternatives using well defined goals leading to the best choice.	-3	5	1.77*	-4
29	People solving problems and making decisions repeatedly have exchanges with each other about the problem.	0	4	1.34*	-2
12	Placing boundaries and using rules of thumb with sources of information leads to timely decisions.	-2	3	0.95	-1
19	People with authority for decision are informed, reasonable, and render personally neutral decisions.	-5	2	0.86*	-2
4	Better decisions come from limiting and structuring participation, tighter planning, and centralization.	-4	2	0.66*	-4
3	Decision makers know what people want and why.	-5	1	0.41*	-4
24	The power for decision making can be shared.	5	1	0.39*	5
9	A satisfactory decision is one that meets immediate needs.	-3	0	0.21*	-3
2	Decision makers prioritize public problems with the most serious always acted on first.	-4	-1	-0.45*	-4
34	Good decisions are judged successful based on their process and effects beyond that process.	2	-2	-0.70	0
39	Achieving goals requires choosing to move past previous decisions without becoming attached.	1	-3	-0.71*	2
27	There are many different people responsible for decisions and they need to work together.	4	-4	-1.55*	1
42	Our views of ourselves helps develop our decision making style and hinders our use of other styles.	-1	-5	-1.78*	4

Note: *P* < .05; Asterisk (*) Indicates Significance at *P* < .01

From a Factor SOF2 perspective, decision making occurred within an existing authoritative structure. This authoritative structure was practical, statements 12 and 9, informed, statement 19, reasonable, statements 4 and 3, and rational, statement 2. Decision making was ineffectual when too many parties participate, statements 27 and 34, and when decision makers questioned their own decision making capacity, statements 39 and 42. Specifically, governance was government, a structured, authoritative undertaking that benefits from communication intervention, statement 31. Ultimately, though, the facilitation intervention was viewed as a way to expedite the acceptance of professionally derived decision. From a Factor SOF2 perspective, public decision making should be *professional decision making* (Dryzek, 2009; Fung, 2006; Weir et al., 2009; Yanow, 2009).

Factor SOF3

From Table 17, three first-order factors loaded on Factor SOF3 and generated an Eigenvalue of 0.54. A 22% explanatory variable for three Q sorts indicated Factor SOF3 had practical significance even though the Eigenvalue was below 1.00. Factor SOF3 had six of 11 distinguishing statements significant at a level of $P < .01$. Five of the factor scores ranked higher, three lower, and three between other factor scores. Three distinguishing statements were magnitude three or greater. From Table 17, only Factors PF2 and PF3 were weakly correlated with Factor SOF3 at -0.6 and 0.10 respectively. Factor SOF3 was distinct from the other two second-order factors with existence of some dependencies.

Table 20

SOF3 Distinguishing Statements

No.	Statement	2nd F1 Rank	2nd F2 Rank	2nd F3 Rank	Z-Score
7	Decision makers have certain solutions they like and apply them to many different situations.	-1	-1	5	1.37*
42	Our views of ourselves helps develop our decision making style and hinders our use of other styles.	-1	-5	4	1.25*
14	Decisions express the desires of the people making the decisions.	0	-2	3	0.89*
21	The decision makers' viewpoint is used to screen information.	-1	-1	1	0.68
27	There are many different people responsible for decisions and they need to work together.	4	-4	1	0.41*
34	Good decisions are judged successful based on their process and effects beyond that process.	2	-2	0	0.38
11	Organizational decisions result from individuals making their own personal decisions.	-2	-3	0	0.18
43	The harmony, selflessness, and sense of community in families provide a model for decision making.	1	1	-2	-0.58*
29	People solving problems and making decisions repeatedly have exchanges with each other about the problem.	0	4	-2	-0.86*
18	When authority for making a decision is questionable adding information and changing the problem is needed.	0	0	-2	-0.97
4	Better decisions come from limiting and structuring participation, tighter planning, and centralization.	-4	2	-2	-0.97

Note: *P* < .05; Asterisk (*) Indicates Significance at *P* < .01

Statements 7, 42, 14, and 21 indicate decision making was a personal reflective

practice from a Factor SOF3 perspective. Ultimately, decisions came from an

individual's evolving understanding about the issues. From this perspective, Factor SOF3 was less concerned about empowerment of collective decision making processes, statements 27 and 34. However, these perspectives honored the aggregation individual decisions to a collective decision, statement 11. Decision making as personal reflection discounted the effects of casual conversation, statements 29 and 43. Further, this perspective rejected the manipulation of information, statements 4 and 18. Essentially, Factor SOF3 viewed sound public decision making as the personal ethical obligation of individuals engaged in *personal public decision making* (Crozier, 2010; Hatch & Yanow, 2010; Stephenson, 1980; 2007; Yanow, 2009)

Summary

Generally, the perspectives revealed in the second-order factor structure can be categorized as originating from *us*, Factor SOF1, *them*, Factor SOF2, and *me*, Factor SOF3 vantage points. Factor SOF1 emerged from first-order factor public decision making perspectives of a consensus-based self governance system, deliberative governance episode, systematic organizing for collective action, complex governance identified, and actively empowered governance. These five factor perspectives imply that the collective, *we*, needed to take action for coping with complex issues that impact multiple parties. This was collaborative decision making. Similarly, Factor SOF3 emerged from first-order public decision making perspectives that advocated for action with personal governance practice, meaning making as decision making, and deliberative application of law perspectives. Each perspective appeared to provide a nuanced view on the need for personal ethical, just, and moral public decision making. Ultimately, this perspective may imply that through individual, *I*, personal reflection on making the right

decision the overall decision would be right for all the collective parties. This was

personal public decision making. In contrast to either Factor SOF1 or SOF3 perspectives

was the SOF2 perspective of professionalized government and exercising benevolent

government. Professional government decision making appeared to deem the knowledge

of an authority superior to the collective knowledge of parties impacted by a public

decision. Perhaps this perspective of public decision making viewed government as the

arbitrator for the allocation of scarce government resources. This would be professional

decision making. This *us*, *them*, and *me* typology provides a reasonable working higher

order perspective of the 10 factors identified in the factor structures of the three P sets.

Implications for Research Question 2

2. Do collaboration participant perspectives of public decision making vary

between collaboration groups?

Yes, perspectives of public decision making had nuanced variations between

collaborative groups which the second-order factor structure illuminated. The discussion

begins with a review of the three prominent perspectives. The largest portion of

explanatory capacity came from the number one factor for each of the P sets, Factors

UF1, IF1, and PF1. From tables 4, 8, and 12, 34 of the 54 significant Q sorts loaded on

these factors with an explanatory factor value average of 26% within each P set. The

descriptive titles generated emphasize the nature of decision making processes; (a)

consensus self governance system, (b) systematic organizing for collective action; and (c)

actively empowered governance. Each of these perspectives on process came from

collections of different distinguishing Q sort statement. For instance, the I-80 SG shares

statement 28 with the PDMSP, US 50 SWG shares statement 30 and 34 with the PDMSP,

and the US 50 SWG shares no statements with the I-80 SG. However, statements 28, 30, and 34, shown below, do provide a reasonable summary of the collective perception of what constitutes good process.

28. Giving people affected by a public action the ability to make their own decisions is important.

30. When people are dependent on each other they should negotiate the solutions to problems.

34. Good decisions are judged successful based on their process and effects beyond that process.

Essentially, a decision making process should empower the effected parties, explore their interdependencies, and produce substantive action. Factor UF3, deliberative governance episode, and Factor PF3, complex governance identified, were the other two first-order factors that loaded significantly with Factor SOF1, collaborative decision making.

These five first-order factors seemed to point to distinctions between collaborations core elements of empowerment, interdependencies, and substantive action and the nuanced perspectives identified in the factor structure for each of the three first-order P sets. These differences likely stem from the individual dynamics each group coped with during the process. The I-80 SG had a large contingent of community participants that likely instilled a sense of civic activism in the ongoing dialogue that influenced the individuals with Factor US3 perspectives. The PDMSP group provided technical support for multiple collaborative processes which likely exposed them to complex and often conflicting information leading to Factor PF3 perspective.

Interestingly, first-order Factor PF3 loaded on second-order Factor SOF1 with a 0.49 correlation and on second-order factor SOF2 with a 0.37 correlation indicating a tendency toward advocating for technical expertise. Only first-order Factor UF1 showed similar orthogonal relationships with other first-order factors, specifically, at Factors SOF1 0.66 and SOF3 0.57 correlations respectively. Ultimately, SOF1 represents the collective *us* approach to public decision making that colors the varying perspectives of process, content, and authority identified within individual P set factor structures.

Personal public decision making, Factor SOF3 emerged from first-order factors in two P sets, I-80 SG and PDMSP. First-order factors for Factor SOF3 accounted for 13 of 54 significant Q sorts and average explanatory variance of 13.3%. However, within the I-80 P set, the combination of Factors IF2 and IF3 accounted for 26% explanatory variance, equal to Factor IF1. In terms of the second-order factor analysis, Factor SOF3 accounted for 22% explanatory variance. Personal reflection was significant in public decision making. Interestingly, an inspection of the distinguishing statements for these three first-order factors determined there were only common statements between Factors IF2 and IF3. They shared a negative perspective on statement 35 and differed on statements 17 and 36, Factor IF2 perspective preferred Statement 17 and Factor IF3 perspective preferred statement 36.

17. Decision making is the balanced application of the laws and rules we make.

35. Using feelings allows decision makers to collect and correctly use information from new situations.

36. Changing conditions makes adjusting the way people think about issues and decisions essential.

The two perspectives described as the deliberative application of law and meaning making through decision making appeared to rely on the same underlying reflective attitude to public decision making process. This personal reflective perspective was central to Factor PF4, personal governance practice. In personal public decision making, the perspective of Factor SOF3 reflected the process experiences of the participants. For the I-80 SG, this was likely the personal reflection participants underwent based on the breakdown of trust with existing technical processes and their outcomes. The PDMSP participants likely experienced similar trust and values tensions while supporting public decision making processes.

Professional decision making was a distinct perspective in the US 50 and PDMSP P sets with Factors UF2 and PF2. Factor SOF2 was identified from four of 54 significant Q sorts with an average explanatory variance of 7.5%. In terms of the second-order factor analysis, Factor SOF2 accounted for an explanatory variance of 9%. This represented the persistent perception of the rational decision making profession where experts know best. An inspection of the distinguishing statements for Factors UF2 and PF2 identified agreement for three statements. Both agreed they supported statement 4 while discounting statements 27 and 42.

4. Better decisions come from limiting and structuring participation, tighter planning, and centralization.

27. There are many different people responsible for decisions and they need to work together.

42. Our views of ourselves helps develop our decision making style and hinders our use of other styles.

As professionals, the Factor SOF2 perspective would be able to objectively identify the necessary information based upon what they believe was necessary for the decision making. Further, as professionals, they were the ones with the authority for decisions and including other potentially impacted parties merely complicated the decision making. In short, these were the government employees that Yanow (2009) identified as the over professionalized experts. Ultimately, as their small and rather random presence throughout the three P sets implied, these were entrenched perspectives. Unfortunately, as this second-order analysis revealed, these perspective may have a disproportionate amount of influence.

Consensus Statements

In Q technique, consensus statements provide little insight into distinguishing the unique perspectives each factor identified within each P set represents. In Q-methodology, consensus statements potentially provide insight into collective perspectives between P sets. This insight was enhanced with a second-order factor analysis of the 10 combined first-order factors from three P sets of interest. All consensus statements were compiled from the four first and second-order P sets. The Q-statements in Table 21 represent the 10 distinguishing statements consistent across all P sets. These statements represent notions that stimulated visceral positive and negative responses from Q sort participants. Each of these statements constantly sorted to the least and most like my view extremes of the forced sort distribution. These statements provide a counterpoise for the most frequently identified consensus statement.

Table 21

Second-order, US 50 SWG, I-80 SG, and PDMSP Common Distinguishing Statements

No.	Statement
1	Decision makers carefully study alternatives using well defined objectives and finding the best choice.
3	Decision makers know what people want and why.
14	Decisions express the desires of the people making the decisions.
16	Individuals responsible for applying laws make decisions and give directions.
17	Decision making is the balanced application of the laws and rules we make.
27	There are many different people responsible for decisions and they need to work together.
28	Giving people affected by a public action the ability to make their own decisions is important.
42	Our views of ourselves helps develop our decision making style and hinders our use of other styles.
43	The harmony, selflessness, and sense of community in families provide a model for decision making.
44	Supportive institutions come when decisions makers focus on increasing people's participation.

Table 22 provides a tally of the occurrence of statements as a consensus statement for each of the first and second-order P sets. Statement ordering rational begins with second-order (2nd) consensus statements and associated occurrences within the first-order P sets. This rational continues with the highest occurrence frequency statements among first-order P sets and concludes with single occurrence statements among first-order P sets.

Table 22

Second-order, US 50 SWG, I-80 SG, and PDMSP Consensus Statements

No.	Statement	2nd	US50	I80	PDNSP
31	Using facilitation and mediation improves cooperation, group image, and decision making.	X	X*	X*	X*
10	Making reasonable decisions is a challenge because we have to study more information than we are able.	X*	X	X*	
37	Periods of steadiness and unsteadiness allows decision makers to create new ways of doing things.	X*	X*	X	
8	Decisions are made in small steps to allow decision makers to work together.	X*	X*		X*
26	There are many different people responsible for decisions and they need to work together.	X	X*		X*
32	Giving attention to the process and conflict improves decision making.	X*	X*		X*
45	Working together on problem lets people share resources and form new ways of interacting.	X*		X	X
23	Consulting many people about changing decision making reduces the chances for the change to occur.	X	X*		
33	By not participating in making decisions people leave their interests from being included in the final solution.	X*	X		
38	Recognizing and using new resources improves the sustainability of decisions.	X	X*		
13	It is more important to figure out what to do than why something is when making a decision.	X*		X*	
22	Without pressure to change how decisions are made, change is unlikely.	X*		X*	
30	When people are dependent on each other they should negotiate the solutions to problems.	X		X*	
6	Decisions are made regularly so there is no need to fully know the consequences of alternative.	X*			X*
15	Achieving a desired state of affairs is the practical aim for decision makers.	X*			X

No.	Statement	2nd	US50	I80	PDNSP
5	Decision makers focus on well defined problems rather than desirable ideas to be achieved.	X*			
18	When authority for making a decision is questionable adding information and changing the problem is needed.	X			
36	Changing conditions makes adjusting the way people think about issues and decisions essential.	X*			
41	The suppression of differences hinders decision making not the differences themselves.	X*			
40	Our individual experiences provide improved grasp of issues and eventual decision making.		X	X	X
2	Decision makers prioritize public problems with the most serious always acted on first.		X*	X	
11	Organizational decisions result from individuals making their own personal decisions.		X	X*	
35	Using feelings allows decision makers to collect and correctly use information from new situations.		X*		X*
24	The power for decision making can be shared.			X*	X
7	Decision makers have certain solutions they like and apply them to many different situations.		X*		
9	A satisfactory decision is one that meets immediate needs.		X		
20	Reasonable decisions meet both the decision maker's viewpoint and desire.		X		
29	People solving problems and making decisions repeatedly have exchanges with each other about the problem.		X		
4	Better decisions come from limiting and structuring participation, tighter planning, and centralization.			X*	
19	People with authority for decision are informed, reasonable, and render personally neutral decisions.			X*	
21	The decision makers' viewpoint is used to screen information.			X	
34	Good decisions are judged successful based on their process and effects beyond that process.			X*	

No.	Statement	2nd	US50	I80	PDNSP
12	Placing boundaries and using rules of thumb with sources of information leads to timely decisions.				X*
25	Laws exclude, ban, and prohibit the essentials of decision making.				X*
39	Changing conditions makes adjusting the way people think about issues and decisions essential.				X

Note: $P > P < .01$; Asterisk (*) Indicates Significance at $P > .05$

Summary

The consensus statement from the four individual first and second-order P sets provide a sense of what was similar between groups and what distinguished them. For instance, the only consensus statement across all four P sets was statement 31 which advocates for facilitation and mediation in public decision making processes. Additional similarities were detected in statements 8, 10, 26, 32, 37, 40, and 45 which were present in three of the four P sets. Statements 8 and 10 imply a collective view that government may be just muddling through since inspection of the data indicates these statements were uniformly in negative sort positions in factor arrays. A similar inspection of factor arrays for statements 26, 32, 37, 40, and 45 revealed neutral to positive sort positions. Collectively, these statements imply collaborative participants readily identify potential opportunities under changing conditions in which working together has the potential for mutual gains results. Comparing these statements with common distinguishing statement in Table 21 indicated that the sense of authority appeared to be the most distinguishing element of collaboration for participants.

Second-order consensus statements compared to first-order P set consensus statements reveal a level of neutrality within the first-order factor structure significant enough to be reflected within the second-order factor structure. An inspection of second-

order and US 50 SWG consensus statements revealed a mild negative position for statement 23 and positive positions for statements 33 and 38. Taken together these statements indicated the US 50 SWG participants uniformly felt that the process must be inclusive for a chance of succeeding. Similarly, second-order and I-80 SG consensus statements had statement 13 in a negative, 22 in a neutral, and 30 in a positive position. Taken together these statements suggested the I-80 SG participants were committed to working together until they found the right solution regardless of what was going on around them. And finally, second-order and PDMSP consensus statement 6 had a near uniform -4 position while statement 15 had a neutral position. Taken together these statements indicated the position that PDMSP participants' decision making was a purposeful undertaking focused on solving problems.

The themes of inclusiveness from the US 50 SWG P set, commitment from the I-80 SG P set, and purposefulness from the PDMSP P set amplified the experiences each of these groups had working in collaboration. Specifically, the US 50 SWG participants included a range of community advocates, the I-80 SG participants dealt with working through untrustworthy information, and the PDMSP participants were tasked with supporting decision making process whatever the dialogue topics were. To some degree, inclusiveness, commitment, and purposefulness were universal properties for collaboration.

Implications for Research Question 3

3. Do collaboration participant perspectives support collaborative public decision making?

Collaborative participants revealed perspectives that supported collaborative public decision making. The results from the second-order factor analysis indicated five first-order factors representing 30 of 47 factor loaded Q sorts were represented by Factor SOF1 labeled collaborative decision making based on statements germane to DIAD theory-based collaboration. Further, three first-order factors representing 13 of 47 factor loaded Q sorts were represented by Factor SOF3 labeled personal public decision making with statement supporting collaborative principles from a persona reflective perspective. Overall, 43 of 47 factor loaded Q sorts supported collaborative principles from eight distinct perspectives embodied in eight of 10 distinct first-order factors from three different P sets. Further support for the claim that collaborative participants support collaborative decision making came from consensus statements. These consensus statements suggested disdain for just muddling through when opportunities presented themselves for engaging in potential mutual gains problem solving with the principles of inclusiveness, commitment, and purposefulness.

In comparison, the remaining 4 of 47 factor loaded Q sorts contrasted with the supportive perspective for collaboration. These participants were represented in Factor SOF2 labeled professional decision making. This perspective viewed the authority of government as the decision maker as superior to other parties. Further, government decision makers were objective professionals and experts on the content of the problems. This appears to be an entrenched perspective.

Outcomes

The following discussion summarizes the outcomes from this analysis of the data in relation to the three research question for this study. Factor analysis of the three first-

order P sets produced three factors for the US Stakeholder Working Group, three factors for the I-80 SG, and four factors for the PDMSP group. These 10 factors provided a spectrum of perspectives on public decision making. The single prominent, including explanatory capacity and significant Q-sorts, factors for each of the three P sets indicated a pronounced positive view for collaborative processes. Each factor, however, arrived at these perspectives through different sets of statements. The remaining seven first-order factors generally organized into two additional broad sets of perspectives. The first perspective focused on public decision making from personal reflective vantage while supporting collaborative principles. The second broad perspective differentiated from other perspectives by appealing for rational representative government as the model for public decision making. These three categories of perspectives provided a summary of the 10 individual and nuanced perspectives from the three factor structures and provided the exploration of perspectives for research question one.

The second-order factor analysis using the normalized Q sort structures of each of the 10 first-order factors identified a higher order factor structure with three factors. These three factors provided a typology of public decision making resembling the broad categories identified during inspection of the 10 first-order factors. This collaborative, professional, and personal public decision making typology implies *us*, *them*, *me* perspectives of process, content, and authority. The collective *us* perspective was prominent within each P set with differences based on nature of issues each group was coping with: (a) US 50 SWG and civic activism; (b) I-80 SG and lack of trust in the data; and (c) PDMSP and coping with identification and organizing of supporting information. Participants in each of the P sets presented perspectives, identified within the factor

structures, which focused on the personal aspects of public decision making. These *me*

perspectives viewed the process, content, and authority as intrinsically residing in the

personal moral and ethical reflection of the individual grappling with the complexity and

generating new meanings. The third process, content, and authority higher order

perspective differed to *they,* the government, to provide professional expert public

decision making. This higher order typology compared to first-order factors indicates that

indeed perspective on public decision making differ between collaborative groups as

research question two explored.

An inspection of consensus statements across the four first and second-order

factor analysis identified consistencies and nuanced differences. Overall, collaborative

participants may view typical public decision making as unfocused and inept. Further,

they viewed changing conditions as opportunities to engage in substantive decision

making processes meant to produce equally substantive results. Further, the collaborative

principles of inclusion, commitment, and purposefulness were identified among the three

P sets. When these perspectives were counterpoised with distinguishing statements

common to all four P sets, the true nature of authority for decision making appeared to be

a defining element. This element of authority may be the focus of the minor group of

collaborative participants with perspectives supporting professional decision making.

Throughout the first-order factor analysis, second-order factor analysis, and examination

of consensus statements there appeared consistent support for collaborative ideas and

principles manifested in multiple ways. Therefore, research question three substantiated

collaborative practitioners' claims of participant support for collaborative public decision

making.

These outcomes were based on Q-methodology's requirement for factor interpretation. This study applied an interpretive framework generated from the literature covering three elements of collaborative theory: (a) collaborative governance, (b) subjective communication, and (c) complexity science. While the intent was to apply this interpretive framework consistently, the requirement for abductive reasoning may have influenced this approach. Obviously, other interpretations could have been made for individual factors and their relationship to each other. The interpretive meanings reached with this analysis were based on Q technique results and my practitioner experiences with the different P sets. The analytic results of identifying and interpreting the first and second-order factors in this study provided a fertile environment for the conclusions drawn in the following discussion in Chapter 5.

Chapter 5: Conclusion

Collaboration increasingly serves as the way actors achieve goals beyond what any single actor is capable of achieving alone. Collaboration is not altruism. It is pragmatic problem solving seeking mutual gains (Booher & Innes, 2010; Innes & Booher, 2010). Further, collaboration has been identified across the public policy spectrum as the means to improving public policy outcomes (Booher & Innes, 2010; Hou & Kinoshita, 2007; Gazely, 2010). While the study of collaboration distinguishes content, process, and authority (Innes & Booher, 2004; Hibbert & Huxham, 2010), this study focused on process. Specifically, collaborative governance practitioners have reported that process participants favor collaborative public decision making (Booher, 2004; Booher & Innes, 2010). Since these self-referential claims were not independently verified or the dimensions of these participants' perspectives explored, this study sought to fill the gap to the participant perspectives and confirm claimed preference for collaborative decision making. This was accomplished by examining diverse participants engaged in collaborative governance processes at the local and regional level and assessing their perspectives of public decision making. Insight into individual perspectives about collaborative public decision making potentially improves a collaborative practitioner's capacity for generating deliberative democratic norms for societies' stakeholders striving for improved public policy outcomes.

This Q methodology study explored the perspectives of diverse multi sector stakeholder participants in three P sets while applying conceptual and interpretive frameworks from collaboration research. The conceptual framework was based on the diversity, interdependence, and authentic dialogue (DIAD) theory-based collaborative

processes model (CCP, 2010). Specifically, DIAD theory-based collaboration strives to bring diverse interdependent actors together to engage in authentic dialogue during a consensus based process (Booher & Innes, 2002; Innes & Booher, 2010). Two P sets were participants in DIAD theory-based collaborative processes: I-80 SG and US 50 SWG. The third P set, PDMST, consisted of individual consultants who provide profession support services for public decision making including collaborative decision making processes. Further, the conceptual framework of DIAD theory-based collaboration informed the technical elements of Q technique: (a) concourse generation, (b) Q sample Fisherian design, (c) P set selection, conditions of instruction, and (d) procedures for identifying operant factor structures. The interpretive framework drew on the literature exploring collaborative process dynamics organized into three categories: (a) collaborative governance, (b) subjective communication, and (c) complexity science. This interpretive framework provided different vantage points for exploring factor interpretations and abductive reasoning (Brown, 1908; McKeown & Thomas, 1988; Ramlo & Newman, 2011). Using the foundational principles of Q-methodology, the gaps in the literature about collaborative participants preferences for collaborative public decision making were filled with the following three research questions:

　　1. What are collaboration participant perspectives of public decision making?

　　Each of the three P sets had factor perspectives supporting structured, purposeful, and inclusive decision making processes. Additional factor perspectives focused on the role of existing and changing civil and personal authority

　　2. Do collaboration participant perspectives of public policy decision making vary between collaboration groups?

Perspectives varied between the three P sets based on the lived experience embodied in the collaborative process and roles engaged. US 50 SWG participants viewed the process as civic activism. I-80 SG participants viewed the process as speaking truth to power. The PDMSP viewed the process as empowered participation.

3. Do collaboration participant perspectives support collaborative public decision making?

Overall, participants in the three P sets supported collaborative public decision making. Second-order factor analysis revealed three factor perspectives for the three P sets: (a) collaborative decision making, (b) professional decision making, and (c) personal public decision making. Collaborative and personal public decision making valued structure, purposefulness, and inclusive decision making processes from social collective and personal reflective perspectives respectively. Professional decision making remained tied to linear deterministic conceptions of decision making. The detailed discussion of these results follows.

Research Findings

The three first-order P sets were US 50 SWG, I-80 SG, and PDMSP and they revealed three, three, and four factor structures respectively. Interpretation of their individual factor structure yielded 10 distinct perspectives of public decision making: (a) Factor UF1 and consensus self governance system; (b) Factor UF2 and professionalized government; (c) Factor UF3 and deliberative governance episode; (d) Factor IF1 and systematic organizing for collective action; (e) Factor IF2 and deliberative application of law; (f) Factor IF3 and meaning making as decision making; (g) Factor PF1 and actively empowered governance; (h) Factor PF2 and exercising benevolent government; (i)

Factor PF3 and complex governance identified; and (j) Factor PF4 and personal

governance practice. These results were obtained through reflection of participant

statements about Q-sorting and the processes overall, the lived experience of P set

participants, and the interpretive framework based on collaboration research. Briefly,

participant statements about Q-sorting reinforced the learning and meaning making

aspects of Q-sorting (Ramlo & Newman, 2011; Wolf, 2009). Comments about specific

statements and sorting strategies were integrated into the factor interpretations.

Further, the P set lived experiences were based on the content, process, and

authority attributes of collaboration. The US 50 SWG involved community advocates

involved with the County's parallel master planning process. These community advocates

deemed the County's process as not being transparent enough based on their US 50 SWG

collaborative experiences. The I-80 SG participants discovered they did not trust the

regional travel demand model that provided the authoritative information for all

transportation planning decisions. Finally, some of the PMDSP participants were

involved with each of these two groups while they coped with the issues faced in their

individual DIAD theory-based collaborative processes. All three processes explored the

breadth of content, process and authority attributes.

Q sort reflection and lived experiences coupled with the interpretive framework of

collaborative governance, subjective communication, and complexity science highlighted

certain attributes for categorization of these individual unique factors. Category one was

enthusiastic support for collaborative processes and included Factors PF1, UF1, and IF1.

Category two was personal reflective journeys supporting collective approaches and

included Factors UF3, IF3, PF4, and PF3. Category three was advocating for rational

representative government and included Factors IF2, PF2, and UF2. These 10 factors and three broad categories provided the spectrum of perspectives collaborative participants held and addressed research question one.

The second-order factor analysis revealed three factors from the 10 first-order normalized factor sorts. Factor SOF1 loaded on first-order Factors UF1, UF3, IF1, PF1, and PF3. An interpretation of the distinguishing statements judged the perspectives embodied in Factor SOF1 as supporting collaborative decision making. Factor SOF2 loaded on first-order Factors UF2 and PF2 with distinguishing statement leading to an interpretation of the embodied perspective as professional decision making. Factor SOF3 loaded on first-order factors IF2, IF3, and PF4. Interpretation of the distinguishing statements revealed the perspectives embodied in Factor SOF1 of engaging in personal public decision making. Overall, the second-order factor structure reinforced the lived experience differences between P sets engaged in collaborative efforts. The US 50 SWG involved community advocates who participated with a sense of civic activism that influenced their perceptions leading to loading two factors on factor SOF1, collaborative decision making. Similarly, PDMSP loaded two factors on collaborative decision making based on their experiences supporting the uncertainly of collaborative content and processes. The I-80 SG dealt with trust concerns about technical data while speaking truth to power. These experiences generated more introspective perceptions of the decision making process thus loading Factors IF2 and IF3 with PF4, the reflective support professionals, to reveal Factor SOF3. Factors UF2 and PF2 loaded on Factor SOF2 and represented a persistent residual perspective of decision making as a clear rational expert oriented undertaking. Ultimately, perspective of public decision making

did vary between the three P sets based on their individual lived experiences with the process, content, and authority thus addressing the focus of research question two.

An inspection of consensus statement frequencies reinforced the emerging view from the first and second factor analysis that collaborative participants do support collaborative decision making. Uniformly agreed upon consensus statements from all four P sets supported the need for facilitated dialogue, an uneasiness for ad hoc muddling through decision making, and a desire to seize opportunities to inclusively explore mutual gains solutions. Additionally, from US 50 SWG participants' perspective generated under civic activism was reinforcement for the need for inclusiveness. I-80 SG participants uniformly supported commitment as a principle of collaboration based on their trust concerns with authoritative information. Stemming from the PDMSP perspective generated in support of decision making processes, the collaborative sense of purposefulness was revealed. Research question three focused on the collaborative practitioner claim the participants' support collaborative public decision making and this study substantiates that claim (Booher, 2004; Booher & Innes, 2010; Innes & Booher, 2010).

Implications for Social Change

This study improved understanding of the dimensions of individual perspectives of public decision making in light of expanding collaborative practices. Results supported collaborative practitioner claims that process participants generate preferences for collaborative public decision making. Specifically, the results established an initial typology for how these participant perspectives were organized. This initial typology will provide collaborative practitioners and theorists with the contextual means to work with

collaborative participants in terms of social and or personal perspectives of public decision making. Contextual feedback, particularly in the case of the interpersonal dynamics generated in facilitated DIAD theory-based processes, could improve collaborative outcomes. Improved outcomes are directly related to generating positive social change. Perhaps more significant is the potential that advocating for collaborative approaches to address ever increasingly complex and divisive wicked problems could provide the means to generate the deliberative capacity fundamental for democratic societies. Ultimately, the results of this study imply that engaging in genuine collaboration is a life altering experience that fosters the deliberation often missing in our overly representative democratic decision making practice.

Recommendations for Action

Collaborative practice includes facilitation and coaching of diverse, often conflictual collaborative participants. Theories, such as DIAD theory-based processes and principles, or conflict resolution guide the overall conduct of the process. The tacit contextual interactions between practitioner and participants and among participants are guided by heuristics, models, and typologies among other representations of dynamic interactions. These representations of dynamic interpersonal interactions are invaluable for maintaining collaborative values and principles in the middle of potentially contentious dialogues. The results of this study provide collaborative practitioners typologies of the perspectives participants have about public decision making. Perspectives on decision making are integral to all phases of collaborative process ranging from the organization and convening to discussions about the legitimacy of information to what Kaner et al (2007) term the *groan zone*. The groan zone is the phase

of collaborative engagement when all the participants are coping with large amounts of information, an unpredictable and uncertain process, and the need to feel a sense of control. During each of these phases of the process, formal and informal discussion or assessments based on the typologies of perspective of public decision making would provide the collaborative practitioner with a sense of how the group feels and avenues to improve future conversations.

Validation of collaborative practitioner claims of participant preferences for collaborative public decision making implies action beyond the collaborative processes themselves. Organizing sponsors for collaborative approaches to generating public policy can add civic capacity building benefits to the rationale for sponsorship. Since it is unlikely the wicked problems of society will be solved with a single collaborative process, the prospect of successive collaborative processes generating the necessary additional civic capacity amplifies the need for collaboration. Sponsors now have a compelling argument for the benefits of taking a long view of collaboration as an approach to public decision making as opposed to traditional processes for coping with wicked problems.

Ultimately, collaborative practitioners and organizing sponsors need to pay attention to these study results. Several strategies could be used to disseminate the results of this study. A scholarly manuscript could be prepared and submitted to an academic journal. This provides reference opportunities for the ongoing work of collaborative theorists. An article manuscript could be prepared and submitted to professional publications associated with planning and policy. This provides information directly to collaborative practitioners. Abstracts could be prepared and submitted to professional

conferences for presentation. Finally, the web-based Q-sorting program could be introduced to various groups engaged in problem solving or policy development as a way to assess their group's perspectives on public decision making. This dissemination approach potentially presents the results of the study to theorists and practitioners. Each of these approaches should be undertaken to get the information to the individuals who potentially benefit the most.

Recommendations for Further Study

This study used a small representative sample of collaborative participants. Two of the P sets were DIAD theory-based processes in which theorized interpersonal dynamics were assumed to have been accomplished. Each of these limitations brackets the results of this study. Several potential topics of inquiry were identified during this study:

● Most and least like my, view conditions of instruction do not capture an individual's perspective on what they believe public decision making is and what they think it should be.

● Additional P sets of non collaborative groups would broaden the higher level perspective provided by a second-order factor analysis.

● A pre and post application of the Q sort to participants at the beginning and end of a DIAD theory based process would provide additional perspective on the nature of the potential life changing experience the process dynamics generated.

● A pre and post application of the Q sort to participants at the beginning and end of a non collaborative process would provide additional perspective on the nature of the process dynamics generated.

● Collecting and additional Q sort from one of the P sets with this study would provide insight into the long term stability of the perspectives identified with this study.

Each of these potential avenues for further study would enhance the understanding of individual perspectives of public decision making and the practice of collaboration.

This study sought to substantiate efficacy claims identified previously through phenomenological methods that participants in collaborative processes support collaborative public decision making. This Q methodology study corroborated these claims thus advancing the civic capacity building benefits of collaboration. Further, this study identified multiple ways collaborative participants perceive their support of collaborative public decision making ranging from the collective *we* to the reflective *me*. These perspectives will be invaluable for practitioners engaged in contextual work within the collaborative process for supporting dialogue about decision making. Ultimately, though, the value of this study lies in rigor and validity Q methodology provides in participant learning and researcher exploring and explicating the breadth of perceptions about collaborative public decision making.

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Appendix A: Q sample

Table A1

Q sample

| Effect Interactions | Statement Number | | Q Sort Statement |
	Concourse	Q-sample	
Machine/Content (ac)	1	1	Decision makers carefully study all alternatives using well defined goals leading to the best choice.
	3	2	Decision makers prioritize public problems with the most serious always acted on first.
	7	3	Decision makers know what people want and why.
	13	5	Decision makers focus on well defined problems rather than desirable ideas to be achieved.
	16	7	Decision makers have certain solutions they like and apply them to many different situations.
	25	12	Placing boundaries and using rules of thumb with sources of information leads to timely decisions.
	43	21	The decision makers' viewpoint is used to screen information.
	47	23	Consulting many people about changing decision making reduces the chances for the change to occur.
Machine/Process (ad)	11	4	Better decisions come from limiting and structuring participation, tighter planning, and centralization.
	15	6	Decisions are made regularly so there is no need to fully know the consequences of alternative.

Effect Interactions	Statement Number		Q Sort Statement
	Concourse	Q-sample	
Machine/Process (ad) continued	17	8	Decisions are made in small steps to allow decision makers to work together.
	19	9	A satisfactory decision is one that meets immediate needs.
	21	10	Making reasonable decisions is a challenge because we have to study more information than we are able.
	26	13	It is more important to figure out what to do than why something is when making a decision.
	66	30	When people are dependent on each other they should negotiate the solutions to problems.
Machine/Authority (ae)	23	11	Organizational decisions result from individuals making their own personal decisions.
	29	14	Decisions express the desires of the people making the decisions.
	31	15	Achieving a desired state of affairs is the practical aim for decision makers.
	34	16	Individuals responsible for applying laws make decisions and give directions.
	35	17	Decision making is the balanced application of the laws and rules we make.
	37	18	When authority for making a decision is questionable adding information and changing the problem is needed.
	39	19	People with authority for decision are informed, reasonable, and render personally neutral decisions.

Effect Interactions	Statement Number		Q Sort Statement
	Concourse	Q-sample	
Machine/Authority (ae) continued	46	22	Without pressure to change how decisions are made, change is unlikely.
Organism/Content (bc)	51	25	Laws exclude, ban, and prohibit the essentials of decision making.
	56	26	There are many different people responsible for decisions and they need to work together.
	59	27	There are many different people responsible for decisions and they need to work together.
	83	35	Using feelings allows decision makers to collect and correctly use information from new situations.
	86	36	Changing conditions makes adjusting the way people think about issues and decisions essential.
	90	39	Achieving goals requires choosing to move past previous decisions without becoming attached.
	95	41	The suppression of differences hinders decision making not the differences themselves.
	98	42	Our views of ourselves helps develop our decision making style and hinders our use of other styles.
Organism/Process (bd)	63	29	People solving problems and making decisions repeatedly have exchanges with each other about the problem.
	68	31	Using facilitation and mediation improves cooperation, group image, and decision making.

Effect Interactions	Statement Number		Q Sort Statement
	Concourse	Q-sample	
Organism/Process (bd) continued	72	32	Giving attention to the process and conflict improves decision making.
	77	34	Good decisions are judged successful based on their process and effects beyond that process.
	88	37	Periods of steadiness and unsteadiness allows decision makers to create new ways of doing things.
	100	43	The harmony, selflessness, and sense of community in families provide a model for decision making.
	73	45	Working together on problem lets people share resources and form new ways of interacting.
Organism/Authority (be)	41	20	Reasonable decisions meet both the decision maker's viewpoint and desire.
	49	24	The power for decision making can be shared.
	62	28	Giving people affected by a public action the ability to make their own decisions is important.
	76	33	By not participating in making decisions people leave their interests from being included in the final solution.
	89	38	Recognizing and using new resources improves the sustainability of decisions.
	93	40	Our individual experiences provide improved grasp of issues and eventual decision making.
	79	44	Supportive institutions come when decisions makers focus on increasing people's participation.

Curriculum Vitae

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Ph.D. Public Policy and Administration, 2012
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Masters of Arts in Public Policy and Administration, 2004
California State University, Sacramento, Sacramento, CA

Bachelor of Science in Civil Engineering, 1986
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Experience

Senior Planner/Analyst - Collaborative Practitioner – Graduate Student
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Construction Manager
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US Department of State, Overseas Building Operations
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Substitute Teacher (Graduate Student)
September 2003 to June, 2004
American School of Yaounde, Yaounde, Cameroon

Operations Engineer (Graduate Student)
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County of Sacramento Department of Transportation
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Transportation Planner/Analyst (Graduate/Student)
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State of Nevada Department of Transportation
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Transportation Project Manager
September 1989 to February 1992
State of Nevada Department of Transportation
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Rotational Engineer/Design Engineer I
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State of Nevada Department of Transportation
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Publication:

2002, Launching a Successful Traffic Operations Center, Transportation Management +
Engineering. Vol. 7, No. 5.

Selected Conference Publications and Presentations

2011, Public Outreach- Technology in Decision making. American Planning Association
(APA) Nevada Conference. Sparks, NV, October 19-21.

2010, Exploring Event Phenomena and Outcomes: Combining Q and Phenomenology
with NVivo. ISSSS Conference. Akron, OH, October 7-9.

2010, Public Outreach- Technology in Decision making. American Planning Association
(APA) Nevada Conference. Las Vegas, NV, September 29-October 1.

2010, Evaluating Collaborative Planning Accountability as Complex Adaptive System:
The I-80 Corridor Study Evaluation. American Society of Public Administration
Conference. San Jose, CA, April 8-13.

2009, Collaborative Planning, Action Research, and Public Policy Decision making.
ISSSS Conference. St. Louis, MO, October 8-10.

2008, Network Links: A Q Methodology Study of Collaborative Planning Participants and Implications for Public Decision making. American Society of Public Administration (ASPA) National Conference. Dallas, TX, March 7-11.

2008, What is in the Crystal Ball: Panning and Uncertainty, Art of the Long View, and US 50 East Corridor Study. Transportation Research Board (TRB). Washington, DC, January 10-15.

2007, It is Getting Rough Out There: Making the Case for Genuine Collaboration for Coping with Increasingly Complex Transportation Planning Environments. ITE District 6 Conference. Portland, OR, July 13-15.

2007, Access Management: Tapping Local Knowledge to Develop an Actionable Plan. Co-authored with Bryan Gant, ITE Technical Conference, San Diego, CA, March 25-28.

2005, Who is Driving the Bus? Land Use and Mobility. Fall Transportation Conference. Las Vegas, NV, September, 24-28.

2003, Sacramento ITS Regional Partnership: An Evaluation of Collaboration. ITE Annual Conference. Seattle, WA, August 24-28.

2002, Traffic Operations Centers and Mobility: A Public Policy and Administrative Paradigm for Successful Launching. ITE Annual Conference. Philadelphia, PA, August 14-19.

2002, Measuring Performance for Sacramento's Watt Avenue ITS Transit Signal Priority Improvements. ITE Annual Conference. Co-authored with James Wright. Philadelphia, PA, August 14-19.

2000, The Learning Curve for Roundabout Intersections. ITE District 8 Conference. San Diego, CA, June 19-23.

Awards

Best Conference Presentation:
2007, What is in the Crystal Ball: Panning and Uncertainty, Art of the Long View, and US 50 East Corridor Study. Co-authored with Bryan Gant and Sandi Stanio. TRB 11th National Tools of the Trade Conference. Portland, OR, September 17-19.

Student Paper Award:
2009, Collaborative Planning, Action Research, and Public Policy Decision making. ISSSS Conference. St. Louis, MO, October 8-10.

Certification and Licensures

Certificate in Collaborative Governance, Center for Collaborative Policy/California State University, Sacramento

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Affiliations

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