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THE MENTAL DEMANDS OF MARINE ECOSYSTEM-BASED MANAGEMENT:
A CONSTRUCTIVE DEVELOPMENTAL LENS

BY

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DISSERTATION

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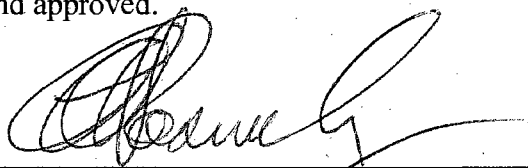
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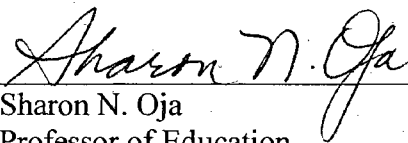
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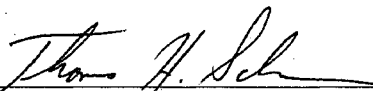
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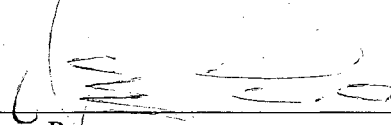
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ABSTRACT

THE MENTAL DEMANDS OF MARINE ECOSYSTEM-BASED MANAGEMENT:

A CONSTRUCTIVE DEVELOPMENTAL LENS

by

Verna DeLauer

University of New Hampshire, May, 2009

Ecosystem-based Management (EBM) is a relatively new and promising approach to the management of marine systems. EBM is holistic by seeking to include all stakeholders affected by marine policy. Stakeholders may include individuals from all levels of government, academia, environmental organizations, and marine-dependent businesses and industry. This dissertation lays out the substantive differences of marine EBM stakeholder engagement processes versus other, single sector processes. EBM processes are more complex than existing stakeholder engagement mechanisms, to sufficiently require a more sophisticated conceptual understanding of the process and the people involved. There are implicit cognitive, interpersonal, and intra-personal demands of EBM that are not addressed by current literature. This research seeks to understand the mental demands of EBM. A constructive developmental framework (from the field of developmental psychology) is used to illuminate how decision-makers reason or make sense of the ideals and values underlying EBM, the mutual relationships that must be built among management sectors, and the personal experiences and emotions that

accompany change. The research considerations include useful lessons for facilitating an ecosystem-approach to policy formation by understanding the mental and emotional capacities of those responsible for change.

CHAPTER 1

THEORETICAL FOUNDATIONS

Problem statement

Marine ecosystems are complex mosaics of ecological, chemical, biological, geophysical, and human interactions. They are valued for the services they provide for humans such as recreation, food, pharmaceuticals, shoreline protection, climate regulation, and tourism. Human disturbance specifically threatens these interactions and services through destruction of habitat, pollution, and displacement of native fauna and flora. These impacts result from decisions made by private citizens, businesses, and municipal, state and federal governments. Ecosystems may only be sustained through protection of ecological structure, functioning, and key processes (McLeod et al., 2007).

The current single-sector, single resource approach to management attends to human activities such as coastal development, fisheries and transportation, each in isolation from the others. This single sector approach fails to address, much less maintain, the integrity of the interactions between the sectors, leading to a loss of valued ecosystem goods and services, and ultimately to a diminishment in potential human well-being. Single-sector approaches are called less effective because they tend to treat interactions and cumulative impacts across sectors as unimportant (Rosenberg, 2008).

Within this single sector management context, fundamental ecological and socio-economic linkages are ignored. Consequently, ecosystem-based approaches to

management (EBM) are at the forefront of progressive science and policy discussions. Both the U.S. Commission on Ocean Policy (USCOP, 2004) and the Pew Oceans Commission (POC, 2003) reports call for a better understanding of the impact of human activities on the coastal ocean.

In the United States, there are more than 20 federal agencies that manage over 140 ocean statutes (Crowder et al., 2006). A history of disjointed, single sector management has resulted in a one-dimensional view of ecosystems, administrative systems, and the socio-economic drivers that affect them. In contrast, an ecosystem-based approach is inherently multi-dimensional. Decision-makers¹ must orient their view to all components of an ecosystem, including human interests. EBM also introduces new elements of tension when coordinating and integrating disparate interests. It adds layers of complexity to an already complex situation.

Due to added complexity, resource managers and policymakers engaged in marine management in the United States grapple with the challenge of taking EBM from concept to practice to move beyond decades of fragmented management (Parenteau et al., 2008). There are few documented successful case studies of the implementation of an ecosystem approach to management in its entirety. Is this because decision-makers are in over their heads (Kegan, 1994)? Do the implicit expectations and mental demands of EBM practices require a complexity of logic and reasoning that outweighs participants' capacities? Is this one possible reason for little implementation? In order to maintain ecosystem integrity, decision-makers must be capable of expanding their views to understand the complexity within and between these systems.

All definitions of marine EBM consider humans as part of the ecosystem (POC, 2003; USCOP, 2004; McLeod et al., 2005). Yet, literature to date is weighted toward the ecological characteristics of marine EBM without considering human systems and the dynamics that diverse decision-makers introduce to the process. While natural scientists recognize the importance of socio-ecological linkages, they often lack the expertise to integrate knowledge of human systems—including a deeper understanding of decision-makers themselves. In 2005, over 200 scientists and resource managers in the United States endorsed the Scientific Consensus Statement on Marine Ecosystem Management (McLeod et al., 2005). This document lays out the underlying principles and characteristics of the approach, particularly that humans are part of the ecosystem. This definition, and others like it, refers to the impact humans have on parts of ecosystems and conversely, the impact ecosystem services have on human well-being. What's missing, from all definitions of EBM, is the fact that humans are also part of the decision-making process about ecosystems; they have a responsibility to the marine environment through the decisions they make. Definitions about EBM, to date, lack insight about the ecology of human decision-making. In addition, they implicitly assume that all stakeholders have the capacity to manage in the way the definitions suggest – to adapt to a different set of principles when given the mandate or enough information to do so.

Chapter 1 lays out the substantive differences of EBM stakeholder engagement processes versus other, single sector processes. These participatory processes involve individuals at all levels and competencies within an organization or agency and sometimes individuals outside of government and academia such as those within industry, e.g. recreational fishing, marinas. This chapter suggests that EBM stakeholder

engagement processes are more complex than the existing single-sector decision-making mechanisms and thus, require a more sophisticated conceptual understanding of the interconnectedness of ecosystems and the people within them. In short, there are scientific, social, institutional, and deliberative changes that must take place to move beyond current management approaches. This research uses the lens of human development to understand the mental capacities of the individuals responsible for change. Environmental decision-making is not only about what decisions are made but how individuals come to their decisions, the thinking patterns, reasoning, and the feelings that lead to the kind of contribution they make to the process.

Chapter 1 also uncovers the cognitive², interpersonal³, and intrapersonal⁴ complexities of ecosystem-based management decision-making. Using human development as a guide, this chapter investigates the ways in which decision-makers are making sense of the ideals and values underlying EBM, the mutual relationships that must be built among sectors, and the personal experiences and emotions that accompany change. Chapter 1 provides the theoretical foundation for the remaining chapters which delve into the research results.

Chapter Summaries

Chapter 2: Methodological Considerations. Chapter 2 describes the overall methodological approach to the research. A picture is painted of a day in the life of the Massachusetts Ocean Partnership, the case study for the research. Speculations are made about the lack of qualitative research used to examine environmental policymaking and case study methodology is assessed for use in this particular research and generally,

within natural resource management. Lastly, personal insights about the research are shared including personal struggles, challenges, and epiphanies.

Chapter 3: Perspective-taking on Self and Others. Chapter 3 reflects more specifically on the interpersonal, cross-sector interactions that occur to incorporate ecosystem considerations in decision-making whether or not there is a fundamental change in governance regimes. The interpersonal changes that come with cross-sector interactions are discussed. For example, in what ways are understanding and integrating new perspectives critical for disparate sectors to work in harmony around shared goals?

Chapter 4: Creating & Accepting Change. Chapter 4 describes the political, institutional, scientific, and individual changes suggested by an ecosystem-based approach. The claim is made that decision-makers' perceptions of change and their reasoning around acceptance of change is directly related to their developmental capacities. Discussion centers on the importance of acknowledging individuals' capacity to change as well as the implications of ignoring it.

Chapter 5: Understanding the Process - Mindsets in Action and Interaction. Chapter 5 reflects on how participants understand the MOP decision-making process. Individual exchanges during MOP meetings illustrate how participants with different mindsets interact with one another and in relation to the topic at hand. The assertion is made that the degree to which individuals can be self-initiating in creating new stakeholder engagement processes, rather than responding to prescribed decisions, is inextricably linked to their developmental capacities.

Chapter 6: Research Considerations and Implications. Chapter 6 suggests ways to use developmental psychology to facilitate EBM stakeholder engagement processes that are appropriate for decision-makers' cognitive, interpersonal, and intra-personal capacities. With appropriate processes, decision-makers can be better equipped to tackle new approaches to coastal ocean management.

Background

Ecosystem-based management raises a lot of intriguing questions among scientists and resource managers. The literature suggests the kinds of management capacity most important for an EBM approach to get beyond institutional and individual barriers to change (MEAM, 2008). Most overlooked in the literature are the new mental demands the EBM approach places on decision-makers themselves and their capacity to meet these demands.

Ecosystem-based Management challenges the typical single sector, resource-by-resource approach to managing marine resources. It advocates for the entire marine ecosystem to be considered. In this context, management seeks to integrate environmental, economic, and societal interests. This approach poses challenges for the traditional decision-making paradigm. Historically, coastal ocean resources have been viewed as inexhaustible and without intrinsic value (Norse, 2003). This approach to management dictates that open access to natural resources takes priority over preservation and conservation (Parenteau, 2009). It is arguable whether EBM constitutes a fundamentally different approach or merely a more sophisticated extension of familiar practices (Murawski, 2007). Regardless of one's view on this debate, EBM adds more

complexity to an already complex set of issues and thus may benefit from a different decision-making paradigm.

Current management has fundamentally weak interactions across sectors with little attention to the cumulative impacts across sectors (Rosenberg, 2007). This chapter focuses on changes in the decision-making process that should occur across sectors when managing with an ecosystem-approach. Specifically, what do these changes mean for the individuals involved? Can one assume that individuals involved need only adopt a different set of guidelines to be capable of instituting this management change? Under EBM, political borders evolve to consider ecological borders; therefore decision-making is cross-jurisdictional (POC, 2003; USCOP, 2004; Mcleod et al., 2004). Coordination and cooperation occurs among governing bodies and relevant decision-makers. Public policy is ultimately shaped through a deliberative process among disparate sectors. Gains and losses to each are made explicit and considered from the holistic perspective of protecting common, shared resources.

Massachusetts Case Study

At federal, state, and regional scales in the U.S., there is no adequate mechanism for implementing EBM nor is there an overarching federal mandate (Parenteau, 2008). As ecosystem-based approaches gain momentum some are trying to pass legislation to change current policy. This dissertation is based on the analysis of a public/private partnership in Massachusetts. This Partnership seeks to engage stakeholders more inclusively in state environmental policymaking. (Further description of case study in Chapter 2) In 2004, a Massachusetts statewide Ocean Management Task Force concluded

that the coastal ocean's ability to provide ecosystem services was threatened; the current framework for managing public trust ocean resources was inadequate to respond to intensifying demands. The Task Force urged the development and implementation of a comprehensive approach to ocean management to ensure the ocean's continued capacity to serve the economic, ecological, and social needs of the Commonwealth (MOP, 2007).

In June 2008, legislation was signed and the Oceans Act was enacted.

Massachusetts became the first state in the nation to "pursue ecosystem management of offshore waters through federal, regional, and state coordination and cooperation" (Massachusetts Ocean Task Force, 2007). Currently, individual agencies manage individual activities. In the near-term, this change includes the development of an EBM plan for the 1500 miles of Massachusetts coastline and 1.6 million acres of sub-tidal lands. Under the Oceans Act, the Secretary of the Executive Office of Environmental Affairs has authority over coastal ocean resource management. All agencies and decision-making bodies are required to manage in tandem with the ocean management plan with a few caveats. An advisory council of natural and social scientists from various sectors is working directly with the Secretary to ensure that decisions are based on the best available science.

In Massachusetts, there is currently no direct mechanism to connect disparate sectors on a regular, on-going basis. Nor is there a regular mechanism to integrate management strategies with relevant scientific and socio-economic information (MOP, 2007). The Massachusetts Ocean Partnership (MOP) is the case study used in this dissertation. A separate entity from government, MOP attempts to create this necessary mechanism for cross-sector interactions as a safe way to hash out individual differences

and learn about EBM using an interactive and integrated decision-making process. This approach to decision-making requires putting aside individual interests to some extent, and forming common goals. The nature of communication evolves from little interaction among or between sectors to regular, ongoing communication where positions are not easily reduced to a single perspective. Ambiguity about roles, uncertainty about ecological ramifications of decisions, and diffusion of power are only clarified and relieved through processes of open communication. In the words of one MOP participant:

(MOP) is a kind of a partnership of a very strategically selected group of different interests with a strong interest in ocean resources and ocean uses. It gets together to really talk about and chart a course for a vision for moving legislation and state-enabled ocean management planning. (The Partnership is meant to have) very important conversations where constituents are getting together and sharing their concerns in a more supportive or less spotlight or hostile environment as you know a public hearing might be or a meeting up at the state agency building. Creating the atmosphere to have and build communications and through those communications, build a partnership to find out where the common vision and shared goal is and provide the resources and things necessary to make that happen.

However, when asked, not all MOP participants describe MOP in this way. Some believe that MOP is more than a communication conduit; they believe that it is developing a type of process that will fundamentally change how diverse stakeholders perceive one another. They believe that those involved in MOP are pioneers who are learning how to agree to disagree, together, in a learning community. Others simply see MOP as a supporter to government fulfilling a niche by providing resources that state government can not offer. Yet others are very skeptical of MOP and its intended mission.

The Implicit Cognitive, Interpersonal, and Intrapersonal Demands of Marine

Ecosystem-based Management

As management in Massachusetts moves toward a balance between ecological integrity and sustainable human use, the values underlying management approaches, and the reasoning which underlies those values, must also evolve. When considering the complex interactions of the ecological, economic, and social dimensions of environmental policy, there are inevitable differences in what people value and how they manage competing values. These values are as fundamental as philosophical outlooks or as specific as weights given to competing costs and benefits of decisions. Values disagreements are at the core of environmental disagreements generally, and they are even more prominent in disagreements that arise across multiple administrative sectors and stake-holder interests (Smith, 2003). This makes an already complex set of issues and relationships even more challenging.

Inherent, and yet unacknowledged, in the MOP process and integrated coastal ocean management are cognitive, interpersonal, and intrapersonal demands that participants are assumed and implicitly expected to have the capacity to meet. These include:

- Capacity to Conceptually Understand Complex, Multiple Variables
- Capacity to Acknowledge Personal Responsibility and Ownership
- Capacity for Empathy for Competing Sectors and the Individuals that Comprise Them
- Capacity to Attend to Multiple Perspectives at Once
- Comfort with Ambiguity

- Capacity to Reflect on and Differentiate Among Management Implications

These expectations are not about intelligence or being able to learn new information.

Rather, they are about the complexity and perspective into which individuals understand, embody and enact them.

Capacity to Conceptually Understand Complex, Multiple Variables

EBM is predicated on a holistic view of ecosystem dynamics, one that includes the impacts of human activities on the environment and the impact of ecological change on people. This orientation requires of the individual stakeholders, a capacity to conceptualize and integrate multiple, complex sets of variables in the decision-making process and to understand how those variables interact as they change over time and space. It also necessitates prioritizing shared goals over individual ones, thus setting aside one's own personal interests in deference to a greater good, all of which one may not be in agreement with. One MOP participant recently commented that "the devil is in the details" when EBM implementation is discussed. One must get beyond the superficiality of EBM jargon to the substantive essence of this new approach. However, can one assume that all EBM stakeholders can do this?

Capacity to Acknowledge Personal Responsibility and Ownership

When decision makers think of EBM as something "out there," something that a mandate, authority, or agency tells them they need to "make happen," they are hindered from making their own vital connections and seeing their own roles within the decisions they make. The implicit demands of EBM must be "taken in" and owned as something

for which individuals feel personally responsible. Inherent within EBM principles is shared decision-making. Therefore, solely relying on external authority (in the form of upper management or a mandate) diminishes one's personal responsibility to developing shared principles. Under an EBM framework, decision-makers are responsible for responding to multiple threats to the marine environment all at once. They are responsible for focusing on an interlocking set of ecosystem services rather than on single resources. This requires a personal and tangible connection to the process and its consequences as critical and essential to recognize and accept such responsibility. It is often assumed that all adults, especially competent professionals, can do this. Do all adults, no matter how well educated, have the capacity to internally manage this level of complexity and to separate their sense of self from their affiliation?

Capacity for Empathy for Competing Sectors and the Individuals that Comprise

Them

Tradeoffs among sectors and interests must be made explicit in EBM. Current single-sector approaches enable individual sectors to maximize their own interests despite the implications to others. When there are no shared goals and objectives among sectors, trade-offs are at best implicitly considered, and policymaking is often dominated by interest groups (Rosenberg, 2008). When sectors coordinate, communication about tradeoffs are usually more explicit. Deliberation, rather than coercion or political pressure, is the mechanism for decision-making. For these conversations to occur, individuals must feel accountable to one another by understanding the impact of their sector's activities on others and the cumulative, intra and inter-sectoral impacts. What are

the ways in which individuals make sense of common goals and the accountability to each other?

Capacity to Attend to Multiple Perspectives at Once

Stakeholders must understand in what ways coordinating and collaborating leads to an increased ability to achieve shared goals and objectives. Conceptually, this requires not only understanding the imperative to constrain individual needs for the common good, but the capacity to set them aside while attending to and addressing the common good in the decision-making process. Since there is no federal mandate to take an ecosystem-based approach, dialogue among decision-makers is a necessary condition to come to shared goals, overcome disagreements, or agree to disagree. Decisions must be made despite individual and sectoral disparities in resources, expertise, knowledge, and conceptual understanding of EBM. Again, can one assume that all stakeholders will uphold this?

Comfort with Ambiguity

Debate continues as to whether enough science is known and/or synthesized to move forward with EBM. Marine scientists most engaged with this issue point to several scientific needs including a better understanding of the interconnections between humans and the biophysical components of the ecosystem and the cumulative impacts of human use on ecosystem functioning and economic activity. These gaps in scientific knowledge are uncertainties that decision-makers must acknowledge and approach in a precautionary manner. Based on the available information, decision-makers must weigh existing

scientific information with socio-economic needs. This requires a certain degree of comfort with ambiguity to make difficult trade-off decisions without distinct direction. In addition, one must feel comfortable with the shifting interpersonal boundaries that take shape with more cross-sector communication. Sectors and the individuals that comprise them are connected to and affected by one another in new ways. At first, these new relationships may seem dauntingly complex and fragmented (Daloz, 1996). What are the capacities of the stakeholders to engage on this level of ambiguity and personal responsibility?

Capacity to Reflect on and Differentiate Among Management Implications

Single-sector management is focused on predicting future consequences, mitigating for impacts, and then implementing management. An ecosystem-based paradigm requires these steps, and adds an adaptive component - adaptive across sectors – (not that single sector isn't adaptive but it is not adaptive across sectors) As new information and knowledge is attained, managers must be flexible to shift approaches. A critical component of adaptive management is self-reflection. This requires that decision-makers take the time, but more importantly have the capacity to reflect on their decisions and actions and the impact of them as well as differentiate among variables contributing to the implications of their management decisions.

These eight implicit demands may seem obvious or simple to attain. In theory, perhaps they are obvious or simple. In practice, however, they can be quite demanding on the capacities of the adult mind. If not understood or ignored, EBM processes are likely to default to old practices. If understood, they can become fertile grounds for learning

about perspective-taking, empathy, role reversal, mutuality, patience, equality, and acknowledgement (Daniels, 2007). If the mental demands of EBM are considered, marine management processes can be commensurate with decision-makers current mental processing capacities (Jaques, 1994).

Analytic Framework - Constructive Developmentalism

Adult Development – Stage Theories

Individuals within the field of human development consider the evolution of the individual's mind over the course of their life. There are theories on cognitive development, emotional development, moral development, ego and conceptual development – a broad discipline (Hoare, 2007). It is helpful to think about adult development as a framework and within that framework are a variety of lenses for understanding an adult's mental navigation through life. There are broad approaches that anchor the framework. These are categorized as the behavioral/mechanistic approach in which past behavior predicts future behavior, the psychoanalytic/cognitive approach in which individuals construct meaning through interaction with their environment, the contextual/socio-cultural approach in which development can't be understood apart from its socio-cultural context, and an integrated approach (Baumgartner, 2001). This research focuses on a theorist within the psychoanalytic/cognitive approach using a sequential stage model of adult development, Robert Kegan. This research uses adult development as a tool to better understand EBM decision-making and does not offer a broad overview of the field.

Stage theorists place growth along a continuum on which an individual is actively constructing meaning from his/her experiences (Baumgartner, 2001). Movement forward is based on an individual's interaction with his/her social and cultural environment (experiences). The characteristics of an experience dictate, in a sense, whether that experience promotes mental growth and in what ways. An individual, at times, stays balanced along the continuum while at other times, he/she transitions forward (ability to integrate new experience/information), or temporarily retreats backward (mental overload). Movement, or the lack thereof, is affected and influenced by the experiences themselves, the other people involved in those experiences, their interactions with the individual, and by the individual's internal mental processes (Loevinger, 1987).

The family of stage theories is modeled after developmental psychologist, Jean Piaget's cognitive developmental approach where the mind is in a constant state of organizing and reorganizing new and existing knowledge with each experience. One's thinking evolves through interactions between mental processes and the outside environment (Johnson, 1991). This type of logical thinking, according to Piaget, governs one's understanding of emotions and values. Within the last forty years, theorists have branched out from a cognitive developmental perspective to include social-emotional development.

Ego-Self Development Focus. This research looks most intensely at ego/self development. These stage models focus on the self in relation to other. Other can be another person, an entity, and ideology or a group/community. As the self evolves, one transitions from self-protective and manipulative to having a desire for reciprocity and

mutuality to having a need for autonomy and integration. As one travels along the mental growth continuum, one can differentiate oneself from other in a more complex and complete manner. Jane Loevinger describes ego as both a structure with its own logic and a process that actively constructs meaning (1987). It can remain in balance and gravitate toward experiences that maintain that balance. And, it can use interpersonal relationships and experiences as fodder for growth. There is a natural resistance of the ego to change so that if there is a threat to one's current worldview or one's personal reality, the ego reacts in different ways depending on its complexity and capacity (Levine, 1989).

Loevinger asserts that how one's ego constructs reality can influence how one makes meaning and how one behaves. For example, if an individual is at Loevinger's conformist stage where social acceptability is at the utmost importance, he/she may not understand a worldview that relies on individualism and sees dependence as a weak characteristic. In an environmental deliberation, this can contribute to miscommunication and conversation at cross-purposes.

Constructive Developmentalism. In addition to this research being about ego-self development, a constructive developmental lens is used. Constructive developmental stage theories focus on how individuals construct their reality and how both that reality and one's construction of it changes over time. In essence, these theories look at the lens by which an individual takes in, organizes, understands, and analyzes his/her experiences (Kegan et al., 2001).

The different theories of constructive development that focus on meaning making capacity all have the same basic tenets (Adapted from Sprinthall, Sprinthall, & Oja, 1998; Kegan et al., 2001):

- Development is distinct from notions of life tasks or life phases.
- Development is more than the accumulation of new information and represents qualitative changes in the ways we know – how we know.
- Societal role and task demands on adults frequently outpace their current developmental capacities.
- Development evolves through ongoing interaction between a person and his/her environment.
- Developmental capacity is consistent across life domains, e.g. work, relationships, parenting, etc.
- Development is a lifelong process and takes considerable time between sub-stages.

The analytic framework used for this research is a constructive developmental theory developed by Harvard Developmental Psychologist, Robert Kegan. His theory is used because it does not look solely at one's knowledge construction or cognitive capabilities; it looks at the whole person. He goes beyond Piaget's theory of mental growth as a strictly cognitive process to incorporating interpersonal and intrapersonal experiencing as an integral part of meaning making (Kegan, 1982). Kegan stresses that meaning making is central to one's personality and is a fundamental activity of a human being (Popp & Portnow, 2001). As an individual's meaning making capacity grows, their construction of meaning is more complex and this increasing capacity extends over the

course of one's life. Similarly to other stage theorists, Kegan asserts that age is not a defining factor of one's developmental capacities. Instead, individuals who are close in age may construct meaning, out of the same experience, in very different ways. How one handles a particular life situation is a product of how one is making meaning of it and this can differ between individuals of the same age. Unlike some of the other stage theories, Kegan's stage theory transcends gender. The idea that meaning making is tied to mental growth and that growth is a process of balance, instability and integration can be applied across race, gender, and culture (Kegan, 1982). The quality of one's experiences is the determining factor of where someone falls on the developmental continuum. Race, age, gender, and culture can influence one's experiences and therefore, one's development. However, none of these variables is a direct cause of someone's mental growth.

Kegan describes his theory of the self in terms of subject and object (1982). As one's meaning making gets more complex, one can differentiate oneself from other in new ways. What the self was once embedded within (was subject to) becomes object and the self becomes embedded in a new subjectivity. At each stage, the self has a more complex view of itself and itself in relation to the world. As capacity increases, one can not only differentiate between oneself and another but sees the other as part of one self and thus, integrates it. To put it simply, everyone has their own mental picture of reality - of how the world works. Each individual has blind spots or pieces of that picture that are missing. The pieces are there but they are not yet seen so they can't be thought about, manipulated, or perceived in new ways. As one's cognitive, interpersonal, and intrapersonal ways of making meaning gain capacity, those blind spots become visible even as new blind spots emerge.

While other constructivist theories are interesting and even pertinent to this research, Kegan's theory and methodology helps to get at the cross-sectoral interactions within the case study, particularly how participants make sense of their roles and their relationships. Then it is possible to investigate how someone thinks about the process conceptually and how they reason about it emotionally.

Similar to other stage theories, Kegan sees individual meaning making as a continuum of increasing complexity with identifiable stages and sub-stages. For the purpose of this dissertation, these stages are termed *mindsets*. Each meaning making system, or mindset, describes how an individual is reasoning or making sense of his/her experience at any given time, i.e. what is real to them. By looking at an individual's mindset, one understands how the complexity of their thinking and feeling shapes their decisions and interactions. Mindsets are useful to distinguish the different ways in which people make sense of their experiences. Here they are used to illustrate and organize crucial characteristics of the research participants in relation to the case study as a whole.

An individual's mindset doesn't change merely in response to more information. Individuals are constantly engaged with the world around them and organize meaning and interpret information based on their current mindset (Popp & Portnow, 2001). An individual's mindset evolves when their current assumptions no longer fit a given experience and in response they experience an internal conflict about the way that they know - not *what* they know but *how* they know. How someone knows is what is referred to as one's current mindset or one's current logic. One's mindset governs their thinking over an extended period of time and shapes how they perceive reality. When an individual is faced with a challenge to their current way of making meaning, such as

when faced with a significant shift in the ways they are expected to carry out their role (as in the change from single-sector to cross-sectoral management), they make sense of the challenge based on how they already know. Sometimes, however, they accommodate a new way of knowing. Over time, accommodating new information gives rise to a qualitative shift in their mindset. As an individual accommodates new ways of knowing, they actively reflect on old ways of knowing (Jordan, 2002). There is an increased internal awareness of how they were making sense of things and how they have progressed. As Kegan says, it is not a matter of increasing differentiation alone but of increasing relatedness to the world (1982). They now have a new, more complex perspective on themselves and the world around them, which brings with it new understandings that can shed light on old uncertainties. The capacity of someone's reasoning does not determine their personal nature or personality. Thus, a person with a more complex meaning making system is not a better person than another. Rather, he/she has different and more complex cognitive, interpersonal, and intrapersonal capabilities (Levine, 1989).

Kegan's theory uses four overarching mindsets with 21 transitions between them. The following bullet points are qualities of individuals within each of these four mindsets and their possible implications for EBM decision-making. These include:

1. Instrumental Mindset
2. Interpersonal Mindset
3. Self-authoring Mindset
4. Inter-individual Mindset

As someone moves along the mental growth continuum, they may exhibit a mix of two subsequent mindsets demonstrating their transition from one to the next but can not reason beyond their current capacity. Also important to note is that one's mindset does not change with context. Individuals do not exhibit qualities of one mindset at home and another at work. Meaning making capacity is consistent across life domains. Transition is slow to occur and if change does occur to a completely new mindset it happens over a period of years (Lahey, 1988).

It is important to note that the mindsets discussed in this dissertation reflect implicit values. In other words, **this research analysis is not imposing value on individuals' meaning making. Rather, it captures the value individuals of different mindsets add to the stakeholder engagement process.** The mindsets are useful ways of capturing a cluster of characteristics that distinguish one individual orientation from another. They are not labels, value judgments, or meant to rigidly classify participants. One mindset is not better or worse than another; but they do have different capacities for understanding and integrating complexity. The mindsets used in this dissertation help to distinguish the mix of players taking part in the MOP initiative by identifying certain traits. They are used descriptively not normatively.

The following are general characteristics that reflect individuals operating fully at one of the four overarching mindsets and their possible implications for EBM decision-making. Included are these four mindsets as defined by Kegan because they capture the meaning making capacity of most adults in North America. However, the Instrumental Mindset, as described below, is not used in this research as there are no participants exhibiting this mindset.

Qualities of an Instrumental Mindset (Adapted from Popp & Portnow, 2001)

- Concrete orientation to world.
- Self is identified with and defined through one's self-interests which stem from concrete needs, purposes, wants or consequences to self.
- One's description of self is concrete, external or by one's physical characteristics or material possessions.
- Dualistic thinking – right vs. wrong.
- Strong reliance on rules to know how to accomplish something and to do it the right way.
- No capacity for abstract thinking or generalizing.
- Tit-for-tat mentality.

A basic principle of ecosystem-based management is the need to interact across sectors and with individuals who hold different interests and values. Creating shared goals, and processes for getting to these goals, is essential to consider tradeoffs. Kegan's theory illustrates that individuals operating within the Instrumental mindset, who are involved in tradeoff discussions, understand them in concrete terms. Other participants may likely be seen as pathways to maximize their interests. These individuals, with an Instrumental mindset, are not acting out of spite - rather they are interacting the only way they know how. If these individuals are particularly reliant on rules, having a mandate and clear lines of authority may be essential for them to believe that an EBM approach can work. At present, EBM is still a complex, abstract concept to decision-makers (Taylor, 2008). Individuals who do not have the capacity for abstract thinking will not fully grasp the discussion.

Qualities of an Interpersonal Mindset (Adapted from McGuigan & Popp, 2007)

- Literal understanding of processes – descriptive rather than reflective.
- Unquestioned conformity to peer, social, or legal norms.
- Guilt, hyper-awareness of others needs even if those are imagined, e.g. “I am responsible for your feelings and vice versa”.
- Differences perceived as threatening.
- Assumptions are invisible and therefore, unquestioned.
- Others are validation, orientation, and authority for one’s self. The self is identified by its relationship to other people or ideas.
- Intolerant of ambiguity.
- Criticism is experienced as destructive to self – need a sense of belonging, driven by need to be understood by and connected to a person, group or philosophy.
Acceptance and approval important to self worth.
- Not solely responsible for own decisions – make decisions under a mental partnership with another.

Decision-makers operating within the Interpersonal mindset rely on authorities and experts for guidance. They come to these processes representing and identifying with their affiliation. They may only feel comfortable moving beyond current management approaches if their peers are willing to take the challenge with them or if given permission by a respected authority. Facilitators need to be mindful of the desire for approval and group acceptance that these participants may need. Dealing with different interests may seem threatening. They may try out cross-sectoral interactions in an effort to be part of the process but may feel torn by their feelings of loyalty and obligation to

their affiliation. Reflection on personal assumptions about other people or the process may be difficult unless guided by someone whom they trust. Participating in cross-sectoral discussions without clear direction may be confusing and feel threatening to their roles as representatives of their affiliations. Loyalty issues may compel them to disengage or become rigid in their stance.

Qualities of a Self Authoring Mindset (Adapted from McAuliffe, 2006)

- Aware and sensitive to others feelings but not responsible for them and vice versa, e.g. Takes responsibility for what happens to oneself at work rather than blame others.
- Differences are respected and valued.
- Former assumptions can be examined, accepted or rejected.
- Can hold contradictory feelings at once - self can disagree with self.
- Concerned with consequences for personal integrity and meeting one's own standards.
- Integrates others perspectives including criticism as one perspective among many – evaluates by one's own standards.
- Can be self-initiating, correcting and evaluating rather than dependent on others to frame problems and determine if things are going well.
- Guided by one's own visions.
- Conceives of processes from the outside - can see one's part in relation to the whole.
- Unable to transform current meaning making system – sees this as a threat to self.

In cross-sectoral interactions where tension can be high, individuals exhibiting this mindset focus on the ideas and values separate from the people expressing them, i.e. the arguments aren't personal. They may be inclined to embrace the challenges of cross-sectoral interactions because they are not personally threatened by difference. Their engagement in the process is primarily ideologically or philosophically driven rather than by their affiliation. Individuals exhibiting this mindset reflect on the present and think through innovative ideas critically without personalizing rejection or disagreement.

Qualities of an Inter-Individual Mindset (Adapted from Rooke & Torbert, 1998)

- Self is multi-faceted.
- Engages with others to self evaluate and even transform current worldview.
- Experiences internal paradox, contradiction, and ambiguity as normal.
- Able to consider or even create new paradigms.
- Allegiance is to larger principles not rules and has a willingness to enact principles in innovative ways.
- Embraces the tension of not knowing something to purposely take on multiple perspectives on issues.
- Recognizes that ambiguity is the norm and that standards and methods are constructed in a world in which dialogue is the only foundation for knowing – understands that all knowledge is constructed through human interaction – more willing to engage in collaborative inquiry where meaning emerges.

Some theorists believe that only individuals exhibiting the above characteristics lead innovative initiatives to success (Torbert, 1991). EBM principles as suggested in the

literature are most in-line with these characteristics: taking on multiple perspectives, advancing despite ambiguity, using deliberation and dialogue as a means for action and learning, and creating, not just giving lip service to, new paradigms (Aldred, 2002; Baber, 2005; Forester, 2000; Yaffee, 1999).

Trends show that approximately 25% of adults in the U.S. and Canada exhibit a self authoring mindset with about 10% with an Inter-individual mindset (Kegan, 1994; Laske, 2008; N. Popp, personal communication, November 4, 2008). As noted, education and age play a role but are not determinative of mindset. Approximately 45% of adults exhibit the Interpersonal/Institutional transition and approximately 30% exhibit the Instrumental/Interpersonal transition, i.e. both complexities are present in someone's current logic. The minority of individuals exhibiting these more complex mindsets have capacities that are most complimentary to the implicit cognitive, interpersonal, and intrapersonal demands of ecosystem-based management. However, one can not pick and choose who manages the marine environment. EBM is about cross-sector interactions and progress is achieved by communication among and between decision-makers of different mindsets. More insight is needed into how different mindsets interact with one another and how those interactions affect policy formation processes. Again the question of whether or not participants in these processes are in over their heads is a relevant one. It should be reiterated that the mindsets described above and used in the definition are not imposing value on individuals but rather, are capturing the value each individual brings to EBM processes.

A meaning making theory that looks at the whole person, like Kegan's, is especially pertinent to ecosystem-based management. EBM theory requires different

ways of operating, thinking, and being. Individuals try to make sense of it given their current ways of knowing. There is a sense of urgency around EBM given the degrading state of coastal ocean resources. Constructive developmental theories offer a window into one's personal reality and how they make sense of this change. Once known, stakeholder engagement processes can be approached in a way that is favorable to decision-makers' current capacities. In other words, knowing the capacity of someone's thinking changes expectations of them and what they are able to understand, and can thus suggest ways to enhance the process in order to maximize everyone's participation.

There is a body of learning styles literature that stresses this point but from a different perspective (Fazey et al., 2005; Folke, 2005). Essentially, individuals have different approaches or ways of learning and there should be education methods in place that are appropriate for different styles. In other words, not all individuals learn in the same way (Kolb, 1984). Some people are visual learners and some are auditory learners. Some learn through reading and writing and some learn kinesthetically (Fleming, 1992). Kegan's theory refers to both informational and transformational learning. Applying these ideas of learning to EBM, stakeholders may have expert knowledge of the science or policy behind the marine environment. They may be able to articulate what they know (the content) very well during a deliberation and influence others and the process/outcome by their claims. This type of informational learning is critical to environmental decision-making and is also quite prevalent. Less obvious or considered, though, are the transformational aspects of learning which can encourage someone to reflect on how one knows and even change one's perspective (Portnow et al., 1998). Transformational learning is the progression that is described in subject-object theory;

which is not about adding new information but transforming the very way someone makes sense of information so it's not *what* one knows but *how* one knows. And *how* one knows is what compels a person to make decisions that make sense to him/her given his/her current mindset. EBM stakeholder engagement processes inevitably include individuals with different mindsets. How they make sense of EBM, what they value about it, how they see themselves in relation to the responsibilities it entails depends, to a large degree, on their mindsets.

Further Considerations

The developmental capacities of the adult mind must be understood if coastal ocean management is to evolve. Stakeholder engagement processes can be and in fact, implicitly are classrooms for development. These processes can provide a safe space for ongoing communication and reflection among diverse interests. Engaging decision-makers in developmentally appropriate ways can create a climate in which individuals try out, rather than pre-judge, new experiences and approaches to facilitate change. One can't assume nor expect that all individuals equally understand new methods of deliberating. In other words, just setting ground rules for respectful and inclusive deliberation may do nothing for communication if those rules are understood with different degrees of capacity.

In developmental terms, stakeholder engagement processes can provide holding environments (Kegan, 1994). These environments support and acknowledge individuals in their current way of thinking and feeling and when appropriate, challenge one's current meaning making systems to embrace change. By deliberately creating a process for self

discovery, decision-makers can experience functions of EBM such as taking on new and multiple perspectives, acting adaptively, tolerating ambiguity, and believing and engaging in deliberation (McAuliffe, 2006). Coastal ocean decision-makers either wrongly assume that each person has the capacity to exercise the above characteristics or they generally approach decision-making in the same way without recognition of capacity differences. Consequently, they take this for granted from the onset of the stakeholder engagement process (McGuigan & Popp, 2007).

Trans-disciplinary collaborations are essential to fully understand the impacts of new approaches to marine management on decision-makers. Ecosystem-based management is an approach to address one complex environmental issue among many. Environmental practitioners, ecologists, and psychologists should be working collaboratively on a regular basis to address all large-scale environmental concerns. With a rapidly changing environment, the mental capacities of individuals, who collectively determine the fate of our ecosystems, can not be ignored.

In the following chapters, the focus is on the complexities of mindsets which have a significant affect on decision-making in the MOP process and are the major findings of the research. These include:

- Capacity to have a perspective on oneself and others;
- Capacity to create and accept change; and,
- Capacity to understand and contribute to the decision-making process.

Each chapter describes and discusses what individuals involved in this Partnership are able to understand about EBM and what implicit demands they are able to integrate into their thinking and feeling. The final chapter offers implications and considerations for

approaching natural resource management from a constructive developmental perspective as a way of forwarding innovative thinking in the field.

Chapter Notes

1*Decision-makers: All those who have a responsibility for management of public resources such as resource managers, policymakers, science advisors, industry spokespeople, etc

2*Cognitive = Abstractness, ideals, values

3*Interpersonal = Mutual relationships

4*Intrapersonal = Inner states/reflective emotions

5*Stakeholder engagement = Purposely engaging groups or individuals who are impacted by or who impact a natural resource

CHAPTER 2

METHODOLOGY

Chapter 1 laid out the theoretical foundations for the research related to ecosystem-based management (EBM) and human, adult development. This chapter offers a promising picture of how a qualitative approach to social science research can contribute to the natural resource management field. Further, it contends that case study methodology, in particular, can help practitioners answer questions that statistics can not. This chapter provides background research on the case and a review of research aims, case study protocol, and analysis techniques. It offers opinions about this methodology in relation to those aims. Lastly, the chapter shares personal insights including challenges and epiphanies that occurred during the course of the research.

A Qualitative Approach to Social Science Research: Offering New Ways to Examine Natural Resource Management

In a recent EBM newsletter, a scientist asks, “Is our pursuit of the ideal EBM process blinding us to simpler but still good solutions?” (MEAM, 2008) He argues that there are simpler solutions and scientists and practitioners are making it complicated. This research provides the argument that it is complicated and that its complexity needs to be worked through. Social science research has the promise of working through that complexity in a way that natural science cannot. Particularly, social science research that

is qualitative in nature can provide insight into human populations and processes to understand their values, beliefs, experiences and emotions, and how those contribute to management decisions. This section explores the promise of social science research that is qualitative in nature and specifically, discusses the usefulness of case studies.

One of the consistent struggles with implementing an ecosystem approach is having a deeper understanding of the interrelationships between and among ecological structure and functioning and human activities. It is imperative that there be research and data about the human dimensions of EBM despite and because of the challenges of creating trans-disciplinary connections. Understanding the human dimension of ecosystems is inherent in all the definitions of EBM. Particularly, the human dimension is categorized under a few broad themes: individual attitudes and perceptions about and behaviors toward the coastal ocean, human use of the coastal ocean, and individual and organizational decisions affecting the coastal ocean. As mentioned in Chapter 1, the human dimension in these definitions does not include human decision-making about ecosystems.

Practitioners are calling for trans-disciplinary and trans-sector engagement processes to build reciprocity and cooperation between natural and social scientists and among the disparate groups that have a stake in the coastal ocean. For example the National Oceanic and Atmospheric Administration (NOAA) put a human dimensions strategic plan into place. Scientists and science organizations are also calling for diversified research on the social aspects of EBM and other large-scale environmental issues. For example, a recent early-career scientist meeting held in New England called for cross-disciplinary understanding among social and natural scientists conducting

marine-related research. Specifically, they addressed the need for a better understanding of qualitative approaches to data collection and analysis to investigate human behavior, attitudes and perceptions in new ways.

Without a good grasp of the value of different research disciplines and methodologies, resource managers, policymakers, and scientists struggle to integrate social and ecological factors into EBM decision-making. Many are still unclear of what is meant by “human dimensions” as touched upon above. There is some social science research on environmental decision-making and political processes related to EBM (mainly quantitative) and often these focus on improving public education and participation and/or improving management with a goal of “getting people to understand” EBM (Endter-Wada et al., 1998). However, getting people to understand more information about EBM may not be what’s needed. This research points to the transformational type of understanding that must occur in how someone understands EBM.

There are qualitative data that can be collected that will capture cultural traditions, worldviews, social values and meaning making – all with the goal of better understanding people. In order to shift the focus toward an integrative social and natural research agenda that respects both qualitative and quantitative methods, scientists of different disciplines and methodologies need opportunities to interact. These interactions need time to develop to get beyond jargon and misconceptions. They need financial and institutional support to collaborate on more holistic research. There is widespread recognition that more social science is needed in EBM (Endter-Wada, 1998; NatureServe, 2008; COMPASS, 2008; Leslie et al., 2008). For example, different types

of economic analysis are gaining strength within natural resource management and, according to some, are the primary tool for understanding human values. However, economic analysis does not need to operate independently of other social science disciplines. If economists and those doing research about human attitudes and behavior (quantitative or qualitative) collaborate one can get at the origin, basis, and meaning of behavior (Kumar, 2008).

Education, psychology, sociology, and anthropology are all research fields that have vital information to contribute to environmental policy and natural resource management literature. Individual, group, institutional and cultural behaviors, values, mindsets, attitudes and motivations can be studied. These disciplines can support and add value to economic research. They can inform how people make meaning, form values and perceptions, and behave in relation to the natural environment or to others. This type of information can be particularly helpful when practitioners are struggling with putting EBM into practice.

The Nature and Potential of Case Study Research

Case studies can be used in new ways to help practitioners look forward rather than backward and gain understanding of stakeholder engagement processes as they are occurring. The newest literature on marine EBM calls for both qualitative and quantitative approaches to understand ecological and social interconnections (Leslie et al., 2008). One qualitative methodology that is particularly appropriate for understanding environmental policymaking processes is case study. Interviews and observations can be insightful techniques for getting at the types of discourse used by policymakers and

managers and their underlying values, meanings, and perspectives. This methodology and its data collection techniques can facilitate understanding of different or innovative types of management processes and can be similarly useful in a comparative study across management approaches. Because these methods lend themselves to narrative, a researcher can ask questions that get at “why” and “in what ways” to add substance to all of the research asking the “what” and “how much” questions. For example, economic research looking at the human uses of the coastal ocean can be enhanced with why people do what they do. Because qualitative data are rich with attitudes, opinions, feelings, and meaning, one can use this methodology to understand, for example, how collaborations work from the participants’ viewpoints. Despite the usefulness of case studies, they are typically used to review a management system or policy decision thus, a retrospective approach (COMPASS, 2006; Yaffee, 2008). However, case studies can be used to look forward, such as in this research, and offer recommendations for the future by understanding how processes and events unfold in the present. The benefits of studying a case in real time are that the process is more transparent since it is being documented as it is happening. From a researcher’s perspective, it enables one to focus on the process itself rather than the outcome (which is the aim of this research. It also allows the researcher to preserve initial understandings to track how situations come to be. If a research is able to see the process unravel in real-time, they are more likely to understand it from the perspectives of those involved.

The following are the types of questions that are being pondered by those trying to implement an ecosystem-based management approach yet there is very little research

addressing these. Qualitative research using case study methodology can answer these questions in ways they haven't been answered before.

Type of question that some economists are tackling:

- What are the human causes and consequences of changes to coasts and oceans?

Type of question that qualitative research can answer to add value to the answer above:

- In what ways are individuals responding to these changes, what do these changes mean to them, and what are the underlying motivations for their behaviors, attitudes, and mindsets?

Type of question that some economists are tackling:

- What market and non-market values do individuals place on the marine environment?

Type of question that qualitative research can answer to add value to the answer above:

- From where does this value orientation stem? How do individuals choose among competing values (e.g. environmental sustainability, economic stability, etc.)?
- In what ways do values translate into actions? In what ways do they translate into decisions (both personal and policy)?

Type of question that some economists are tackling:

- What are the necessary incentives for embracing change— in personal behavior, societal expectations, business practices, and resource management – to adapt to an ever-changing environment and move forward with EBM?

Type of question that qualitative research can answer to add value to the answer above:

- In what ways are certain incentives for change important to individuals, institutions and the culture being studied? How can EBM stakeholder engagement processes provide opportunities for learning and adaptation?

It is not realistic to believe or hope that all questions about natural resource management can be explained through numbers or statistics. Nor is it realistic to only address questions about ecosystem-based management through natural science research. Integrating social and natural science research is critical to understanding the range of variables inherent in EBM. Similarly, integrating qualitative and quantitative methodologies is critical for getting at human behaviors and attitudes and their underlying values, meanings, and motivations. Case studies, when used empirically, can provide both reflective and forward-looking assessments, both which are crucial for managing resources adaptively. However, there are obstacles to overcoming the misconceptions about case studies.

One of these arguments is that case studies produce simply anecdotal information. Because of the ways of building theory, one is not always looking to prove that something is correct or incorrect (Flyvbjerg, 2006). Rather, one is searching for and exposing what can be learned and understood.

In addition, generalizability is often thought of as a limitation of the methodology's ability to add value to environmental policy research and be applied to a broader context (Leslie et al., 2008). A case study does not necessarily have to be carried out a variety of times in a number of different contexts to be considered generalizable. For example, MOP is a case study of significant value because it is considered a unique case. This group is creating the first-in-the-nation ocean management plan. Clarifying the

deeper meanings behind the process and its participants in this case can add more to the literature on EBM than simply understanding the challenges and successes of the various initiatives attempting EBM. This latter type of case study is quite popular (Yaffee, 2007; TNC Global Marine Initiative, 2008; COMPASS, 2008). The degree of insight one achieves from going in-depth into the MOP case vs. defining basic characteristics of many case studies can help the EBM cause move forward.

One has to keep in mind that generalizability can be thought of in two ways – generalizing about a specific group or population or generalizing about the nature of a process (Gobo, 2001). This latter way of generalizing is how this research can contribute more broadly to the field; it generalizes about theory. This is often referred to as theoretical sampling (Strauss & Corbin, 1990). For example, the sample in this research was chosen to study the diverse representativeness of stakeholders involved in collaborative ocean management. The goal was to maximize variation. Three significant findings or concepts were selected as being particularly relevant to this diverse sample. How, one may ask, does this make this study theoretically relevant in other contexts? Again, the goal of case study research is not to generalize to a larger population but to *“specify the condition under which phenomena exist, the action/interaction that pertains to them, and the associated outcomes or consequences. This means that the theoretical formulation applies to these situations or circumstances but to no others...an internal generalization”* (Strauss & Corbin, 1990). This is an expanded notion of a case study. A case study is not a monolith. Within it are interconnections of relationships between and among individuals, sectors, and institutions. This research assesses the web of meanings participants place on themselves, each other and the process. It does not look at the

number of people who exhibit certain cognitive capacities but rather how these capacities manifest in interaction with one another and in relation to the process. In other words, the results can not be directly applied to a case in, say, California. There are different players with different issues and capacities. But the notion of using constructive developmentalism to assess the interconnections among people and environmental policymaking can be generalized. A constructive developmental lens can alert a researcher to what one needs to pay attention to in order to support stakeholders in the process of changing current ocean management decision-making (Sandelowski, 1996).

In addition to theory being generalizable, it is critical to note the importance of context to qualitative research. Qualitative researchers focus on the particulars of an experience thus attending to the depth, richness, and details of a case (Schram, 2006). According to Schram (2006) because of its attention to contextual meanings, qualitative research can be considered both specific and circumstantial. This is especially relevant to this particular research. This research offers considerations and recommendations specifically for the chosen case study and broader applications for the use of constructive developmentalism (theory). However, there are meanings garnered from this case within this context that can be attended to in other similar but not identical settings and contexts (Patton, 2002). These meanings or concepts, such as those that are the significant findings of this work, can be used to provide other researchers a general sense of direction and reference when conducting research of a similar nature (Blumer, 1986). Hence, a broader application of the research is attained from a specific set of meanings and/or concepts.

Aims & Protocols for this Case Study

Research Aims

- I. To understand what participants found to be significant about the MOP process and more generally, EBM.
- II. To understand participants' capacity for understanding EBM and MOP – identify Mindset.
- III. To identify characteristics of mindsets in relation to this context of meaning making.
- IV. To investigate the field of coastal ocean management through a constructive developmental lens.

Practical Aims

- V. To help process facilitators integrate differences in mindsets more appropriately and strategically.
- VI. To weave developmental theory and ecosystem-based management together to create more effective and inclusive (optimal) stakeholder engagement processes.

The formation of a public/private partnership which sought to engage stakeholders in a different way than has been done before in the U.S. was analyzed to address the research aims. The Massachusetts Ocean Partnership is a broadly representative public/private partnership seeking an evolution in the management and understanding of public trust coastal ocean resources (MOP, 2007). This evolution is described in similar terms as an ecosystem-approach to management. The Partnership represents a wide range of ocean interests including local, state and federal government, marine-dependent business and industry, conservation organizations, educational/scientific research institutions and others. Through a grant from the Gordon and Betty Moore Foundation, they are supporting the state in developing an ecosystem-

based management plan for Massachusetts waters. According to MOP participants, this

Plan includes:

- integrated management across sectors, resources and agencies;
- ecosystem management principles that incorporate human activities;
- input from the public;
- support of major affected groups and organizations;
- a process for adapting the plan to respond to changing conditions; and
- support for sustainable marine industries.

MOP supports the state's and others' efforts by:

- facilitating collaboration and problem solving on tough issues among diverse stakeholders;
- fostering effective integration of science and management; and
- leveraging financial and human resources.

MOP was selected as a case study because of its timeliness, but most importantly because of its attempt at carrying out a process whereby EBM principles are valued and integral to decision-making. It brings together the diverse interests of the science, policy, and industry sectors who typically do not coordinate efforts in this particular way. The MOP process is trying to instill a sense of personal and collective responsibility so that the onus to change doesn't default to one management sector. The state of Massachusetts is in its first phases of comprehensive, integrated ocean management. It is in these first phases where stakeholders and MOP participants are just conceptually grasping EBM and weighing the pros and cons to the interests of each individual, the collective group, the public, and the ecological systems being managed for public use. It is a unique case in

that it is the first U.S. state to institute a comprehensive ocean management within its waters. The uniqueness of the MOP process is part of what makes it interesting. However, the collection of participants is not necessary singular. Rather, they are somewhat reflective of what one might expect in any group of decision-makers. MOP is a ripe case to investigate an ecosystem-based management process in its infancy when participants are just starting to make sense of EBM in practice. It is also a ripe case to gain insight into participants' meaning making as they struggle with and/or embrace a new way of operating in their daily lives. In essence, MOP is creating the opportunities for the cognitive, interpersonal and intra-personal aspirations of EBM described in Chapter 1.

Overall Approach & Rationale

A primarily qualitative approach was used as it deals with the character or nature of a phenomenon. A case study research design was used to understand the dynamics present within a single, real-life context – the MOP stakeholder engagement process. Research participants included twenty-two individuals involved with MOP. They informed the construction of the overall case study. Patterns within and across the collective case of research participants were systematically examined through three data collection techniques. This research was not about any one individual research participant. Rather, its focus was on the individuals in relation to the MOP process. The purpose of this was to understand how participants, when making sense of the same set of variables, could contribute to the overall case in substantively different ways (Sandelowski, 1996).

Data Collection Techniques

Subject Object Interview. The Subject Object Interview (Kegan et al., 1988) was first introduced in the early 1980s to understand the developmental complexity of psychiatric patients. It consists of a semi-structured interview that invites participants to describe the meaning behind their experiences using a series of 10 subject cards which include *Angry, Anxious/Nervous, Success, Strong Stand/Conviction, Sad, Torn, Moved/Touched, Lost Something, Change, Important to Me*. Data that exhibit meaning making characteristics are hypothesis-tested. Some of the questions asked to test hypotheses include: How does a person defend their position? Is their position flexible? What does it cost to maintain it? What does the person take responsibility for? Researchers using this technique are not as concerned with the *what*, the content of information, but *how* each participant organizes his/her experiences.

The Ecosystem-based Management Interview. A semi-structured interview was used to explore ways in which the MOP participants thought about and understood ecosystem-based management and their relationship to the MOP process and other participants.

Participant Observation and Meeting Transcripts Discourse Analysis. This technique provided the opportunity to record meaning making as it happened within a dynamic group process as opposed to one-on-one interviews. An analysis of the discourse provided examples of subject object data and underlying value orientations in action.

Protocols

Setting. MOP participants work and live throughout Massachusetts. Meetings and interviews took place at several locations over a three-month period.

Subject Selection Criteria. All 41 MOP participants were asked to participate in the study. More than 20 responded favorably. Respondents were compared based on their affiliation and expertise until it was determined which of them reflected the diversity of the interests of the group at large. Final participants were chosen from the science and management communities, industry, and private sector. There were fifteen male and seven female participants which reflected the gender ratio of the broader group. Half of the participants had PhDs and half had a master's or bachelor's degree which was representative of the broader group. The goal was to obtain a variety of interests to understand how individuals with diverse perspectives would work together despite differences in interests.

Triangulation. Triangulation is critical to qualitative research whereby all three data sources are used as three forms of evidence to prove and support findings. As mentioned earlier, qualitative studies are not designed to allow systematic generalizations to some wider population (Yin, 2003). Instead one can generalize that the development of a theory in one time and place may differ in another setting where the same type of process was used. This fit in nicely with assessing developmental complexity and its relationship to EBM as there are other similar EBM processes. Developmental complexities of the participants will surely vary by setting but a similar range of

complexity among participants will most likely be seen in other settings as it was seen here.

Data Analysis

Subject/Object data were analyzed using *A Guide to the Subject-Object Interview: Its Administration and Interpretation* (Lahey et al., 1986). This methodology has a quantitative analysis component (the scoring of hypothesized bits of data). Due to its uniqueness, it has its own specific protocols for being administered and analyzed. Interrater reliability means that scores must be within 1/3 stage or mindset 80%+ of the time. Dissertation committee member, Dr. Nancy Popp, an expert in the administration and scoring of the Subject/Object Interview, was the second scorer. Test-retest reliability shows that individuals test similarly when re-tested within the same time frame. Inter-item consistency means that developmental distinctions do not vary among interview cards nor do they vary among domains of life, e.g. work and love life (Lahey et al., 1986, 1988). Lastly, construct validity means this measure compares with other similar measures that look at similar theoretical constructs.

The EBM interview and participant observation and transcript analysis data were organized using a software program called HyperResearch. In qualitative research, analysis and data collection begin simultaneously and the relationship between the two are continuous, evolving, contracting and merging.

Next is a description of the analysis process (Schram, Unpublished Manuscript). Excerpts are chosen from meetings and interviews to illustrate how the significant finding related to how participants understand the MOP process (Chapter 5) comes about. Four

research participants are the focus of this section. Each exhibits a different mindset (Interpersonal, transitional Interpersonal/Self-authoring, Self-authoring, and Self-authoring with some Inter-individual). Their pseudonyms are Laura, Kate, Anthony, and Sam.

Writing Field Notes. A bound journal was kept throughout data collection and analysis for personal notes that were not considered data but rather a place for hunches, questions, and emotional reactions. This was particularly useful after the subject/object interview where immediate, gut feelings could be recorded.

Example A: Field Note Excerpt - Real-time Description of MOP Meeting – Focus on Kate

The physical atmosphere of MOP meetings is nearly always pleasant. They are held at a convenient location for most with comfortable lighting, seating and atmosphere. And the food is generally quite delicious. Chairs and tables are arranged in an oval-like shape with two flip charts at one end. None of these descriptors is unique given the number of meetings I've attended on similar subjects. What is noteworthy though is the thought that the hired MOP coordinator (now Director) puts into making participants feel emotionally comfortable too. I will call her Kate for the purposes of this dissertation. As participants show up, Kate is there to greet them either immediately or soon thereafter. She carefully makes the rounds at lunch too. Some of these participants are new to the group. They enter hesitantly and sometimes on guard. Not all have personally chosen to be there rather they have been appointed by a supervisor or have heard of this effort through the grapevine and feel that if they don't participate, their interest will be forgotten. Kate's ability to chat with people "where they're at" is amazing. She has a laugh with an old-timer from the lobster industry then wins over a skeptical statistician (for the time being) and then engages a state politician like it was nothing. A taste of Merlot, a taste of Pinot Noir, and a taste of Chardonnay – all have their purpose if you like wine. And Kate likes building connections among and between the many flavors of individuals in the room. She has become, for many, a person to focus on when the conversation gets tough or someone feels excluded. She is the person to make eye

contact with when you walk in. She is the bridge and it's up to each individual to determine whether they will make it across.

Example B Field note excerpt – Dialogue about MOP process

In this dialogue, these participants are trying to make sense of MOP's role and set goals and objectives.

Laura: I am concerned about the role of MOP in the future – can we really make any impact without enforcement capabilities?"

Sam: Why do groups become paralyzed when the rubber meets the road? What does reality look like for us? These are noble goals but how will they work pragmatically? Consensus just does not work. Based on my experience, we have never come to consensus nor can we come to a majority.

Anthony: I am struggling because I like to have a story I can understand. Is the story to develop a management plan for MA waters? That's tough. What I can swallow is that we have an opportunity to learn by doing because the legislature does have an interest in this. Why don't we do an experiment in developing a management plan and learn by doing and share those lessons as widely as possible. I don't subscribe to a group of private citizens funded by a private foundation to tell the voters what their state should do. This will be a very difficult sell.

Sam: I thought this was an experiment. It's an important spin to think of it that way.

Laura: I have a great concern that we can get destroyed by a bad piece of legislation coming through.

Hypothetical Paraphrasing: Leona, Anthony and Sam bring three perspectives to the conversation. Leona is concerned with MOP's relationship to the state and the pending legislative mandate that would institute a comprehensive ocean management plan for state waters. Anthony is offering a perspective on how he believes this process could work to be accepted outside of MOP and make an impact. Sam brings a skeptical perspective of the process based on his own previous experiences with these types of undertakings.

Creating Episodic Threads. A workable data set was developed and organized using three data sources and field notes. A preliminary vision was developed given what the data were showing. Excerpts from three data sources were pieced together to form themes. The following is an example of piecing together excerpts from Laura, Kate,

Anthony, and Sam during the EBM research interviews. They are discussing how they think the MOP process is going.

Example C: Episodic Thread - EBM Interview Excerpts

Laura: "It was hard right up until the last couple of meetings to figure out what the hell we were doing there. It seemed we were having meetings about having more meetings. We were talking about ocean management and yet we weren't going to write the plan. And sometimes we talk about well, let's try to perceive writing the plan."

Kate: "Um, un-comfort with the process. There were times when there was tension decision points – decision junctures that came up where we had to either figure out to go the process high road and be more inclusive and try to take into account the full opinions of all versus the pressure to take the process short-cut per se and get to a decision more quickly by basically just making a decision in advance and then making the process around it look okay."

Anthony: "It seems it hasn't been thought out yet what exactly is going on. The thing that has been missing for me is some kind of context. That is important because if you don't have that context then it is hard to know if the things that you say you are going to do make sense, so I have been trying to push for that context and for me once I understand that it is much easier to say ok so what should we do in order to support that."

Sam: "It has struck me that to really do the job that's necessary, maybe it's completely impractical until you are terrified, but to do the proper job, we need a new paradigm and we don't get a new paradigm if we work within the system, on the other hand if we work outside the system, outside the funding system, the preconceived conceptual structures, maybe we get nowhere and so I continue to be yin-yang on the subject."

Open Coding. Key codes and themes were identified and defined toward the development of working theories (based on threading together excerpts like the ones above). It became clear that the MOP process itself was very important for participants. Hence, the participants' understanding of the MOP process was explored. A brainstorm began of all of the potential paths that could lead to understanding this better. Ninety codes or analytic possibilities were created. The same illustrations are used below as

above but they are assigned codes or themes. The codes/themes are listed within parentheses after each excerpt and are in bold. Some have more than one code. At this point, the codes were broad and static. Eventually, they got more specific and active.

Example D: Open Coding – Dialogue about MOP Process

Laura: I am concerned about the role of MOP in the future – can we really make any impact without enforcement capabilities?” (**Concern with authority**)

Sam: Why do groups become paralyzed when the rubber meets the road? What does reality look like for us? These are noble goals but how will they work pragmatically? Consensus just does not work. Based on my experience, we have never come to consensus nor can we come to a majority? (**Cynicism of process; Pragmatism**)

Anthony: I am struggling because I like to have a story I can understand. Is the story to develop a management plan for MA waters? That’s tough. What I can swallow is that we have an opportunity to learn by going because the legislature does have an interest in this. Why don’t we do an experiment in developing a management plan and learn by doing and share those lessons as widely as possible. I don’t subscribe to a group of private citizens funded by a private foundation to tell the voters what their state should do. This will be a very difficult sell. (**Context-orientation**)

Sam: I thought this was an experiment. It’s an important spin to think of it that way. (**Assume adaptive nature of process**)

Laura: I have a great concern that we can get destroyed by a bad piece of legislation coming through. (**Focus on power of authority and rules**)

Example E: Open Coding - Excerpts from EBM interviews

Laura: “It was hard right up until the last couple of meetings to figure out what the hell we were doing there. It seemed we were having meetings about having more meetings. We were talking about ocean management and yet we weren’t going to write the plan. And sometimes we talk about well, let’s try to perceive writing the plan.” (**Discomfort with MOP’s vs. state’s role**)

Kate: “Um, un-comfort with the process. There were times when there was tension decision points – decision junctures that came up where we had to either figure out to go the process high road and be more inclusive and try to take into account the full opinions of all versus the pressure to take the process short-cut per se and get to a decision more quickly by basically just making a decision in advance and then making the process around it look okay. (**Interpersonal; Introspective; Concern with doing the right thing**)

Anthony: “It seems it hasn’t been thought out yet what exactly is going on. The thing that has been missing for me is some kind of context. That is important because if you don’t have that context then it is hard to know if the things that you say you are going to do make sense, so I have been trying to push for that context and for me once I understand that it is much easier to say ok so what should we do in order to support that.” (**Pragmatism; Understanding context leads to better gauge of success**)

Sam: “It has struck me that to really do the job that’s necessary, maybe it’s completely impractical until you are terrified, but to do the proper job, we need a new paradigm and we don’t get a new paradigm if we work within the system, on the other hand if we work outside the system, outside the funding system, the preconceived conceptual structures, maybe we get nowhere and so I continue to be yin-yang on the subject.” (**New paradigm; Reflection-in-action**)

Marking Potential Paths of Inquiry. Codes were examined and given the research vision, several paths of coding were explored with the understanding that the vision might eventually change and would certainly evolve. At this point, codes were narrowed a bit more to include the following codes. At this point, the codes were still quite static.

- Affiliation
- Assumption/generalization
- Authority/power
- Communication
- Consensus
- EBM
- Expectation
- Context-oriented
- Goal-oriented
- Inclusiveness of other perspectives
- Leadership
- Learning
- Trust
- MOP’s role
- Process
- Personal role
- Self evaluation
- Reflective
- Responsibility
- Success

Writing Initial Memos & Questioning Them and Applying and Comparing

Promising Frames. This time was spent doing journaling that was retrospective, interpretive, and analytic in nature. Speculation and questioning about the few paths of data occurred and codes that were not significant were weeded out. For example, some of the themes (such as *Affiliation, Consensus, Trust, and Hope*) could be subsumed under the theme, "*Inclusiveness of other perspectives.*" Some of the codes did not really describe the essence of what was happening; they described the content of what was being talked about, for example codes - *EBM and MOP's role*. These codes were eliminated. Codes such as *Context-Oriented* and *Goal-Oriented* were actually more characteristics of individuals than they were illustrations of something broader so they were eliminated. The code *Responsibility* was important at this point but it was not yet linked to the idea of change. The *Capability to Reflect on Oneself* was important but again, it was not yet linked to something broader. The code *Assumption/Generalization* was also eliminated because it was more descriptive of the way in which certain participants expressed themselves. It was not a theme that expressed something about the cumulative impact of the individual research participants on the process. Lastly, all of the codes could be linked to a participant's sense of the MOP process. Therefore, participants' understanding of the process became in and of itself significant. Now a more substantive research vision was formed. Yet, there was more to it than just how participants made sense of the MOP process. There were significant aspects of participants' understanding that were equally as significant, such as how someone came to their perspective about the process and how they made sense of the change inherent in the process. Themes or categories were continuously considered as well as linkages

among them. The data were mined again and again for each of the remaining codes. Important questions were considered such as: what were the data saying and which code(s) most accurately describe that when tested against the data.

Selective Coding. The themes were refined and three major themes related to perspective-taking, change, and process were selected as being significant. To determine what was significant, either the data expressed which themes encapsulated others to describe what was occurring or particular attention was paid to pieces of the data that were paradoxical or beyond what was expected. Once a good chunk of the data was conceptually eliminated, significant pieces were tested by tracking thematic variation found across data sets, to see if they were truly comprehensive. They were examined across the three data sources, across meeting transcripts (chronologically), and across participants. This next excerpt is an analytic commentary of the theme Understanding the Process (Chapter 5). This commentary was a result of the excerpts used in this chapter from Laura, Kate, Anthony, and Sam, in addition to many other data points.

Example F: Selective Coding - Analysis of a Major Theme – Regarding the Process

Deliberation in the MOP process is not about aggregating interests of participants but rather using open communication to illuminate the motivations behind participants' involvement. The way in which participants make sense of their interests is tied to the way in which they perceive the process. These perceptions influence how people interact during MOP processes – how they adapt to new information and values – how they see authority and power – how they are motivated and how they understand the motivation of others. All of these are aspects of process and affect process interpersonal dynamics. Each person brings a different mental map to the process and reconfigures the map based on new information and understandings. (Hajer, 1995) The extent to which participants integrated MOP process characteristics into other aspects of their lives varied. As one's mindset demonstrates more complexity, he/she can differentiate between

what is superfluous to other aspects of one's life and what is integral to it (Phillips et al, 1998).

I observed that generally, there was a strong commitment to personal change and growth among participants. Reasoning behind that commitment varied, e.g. I endorse this unique process because it is a positive change for my interest; I endorse this unique process because I have found my own voice within it; I endorse this unique process because of the goals it can achieve in creating a community of disparate interests.

Writing Integrative Memos. Integrative memos were the very first drafts of the analysis chapters where interpretations were described and excerpts from the data were added to support them. These have been refined and now comprise chapters 3, 4, and 5 of this dissertation.

Developmental Linkages. Throughout the aforementioned process, developmental linkages were always integrated into the analytic process. The research aims were to explicitly understand meaning making and what different mindsets contribute to or detract from the process as a whole. The final step in the analysis was to look at the three significant findings in relation to the mindsets of the 22 research participants.

Methodological Implications and Limitations

As mentioned earlier, case study methodology was chosen to delve deeper into a specific process happening in a specific place at a specific time - the Massachusetts ocean management planning process. Using three data collection methods, the research uncovered how individuals understood the process given their current meaning making capabilities and how these variations in meaning play out during discussions. The motivation was to watch meaning making as it evolved. In the natural resource

management field, case studies are not always equated with empirical research nor do they always employ it. They are often used to gain anecdotal information and do not include a triangulated data set. It may not be possible to get as rich or as complete a picture of decision-makers without triangulating three data sources in an analysis, particularly the comparisons between one-on-one interviews and watching the group in action. Because three types of data were cross-examined, the final analysis was stronger and more robust.

The data collection was labor intensive – approximately 66 hours of interviews and 16 months of engagement with and observation of the MOP process. The analysis was even more intense – coding every interview and meeting transcript, scoring developmental interviews, narrowing codes over and over until significant findings were uncovered. This intensity is not unique to qualitative research, but before embarking on a case study, one should consider the time constraints of the research. However, the richness of the data outweighs the time constraints and work needed to approach natural resource management from a new perspective. During analysis, the data were returned to over and over in new ways. Once significant findings were found with the help of management and retrieval software (HyperResearch), hard-copies of the transcripts were reviewed several more times to continue to build a more complete picture of the case. The minutia of the sentiments, thoughts and feelings that were key to the findings were reviewed to re-engage (conceptually) with the participants of the research. In addition to the recursive nature of the research, there was a strong iterative component. The research vision kept evolving but eventually it reached a point in which adding more data just meant adding more complexity not more useful information. The first picture of the case

was quite broad, the second was less so but with more detail. There were many more iterations to follow until the quality of the research vision surpassed the quantity of elements captured within it. Thus, data collection and analysis were not mutually exclusive.

Lastly, the strengths and limitations of the data collection methods will be discussed. The developmental interview was a strong technique. The Subject/Object Interview was critical for staying close to the interviewee's train of thought, their self awareness, awareness of other, and their underlying motivations and vulnerabilities. Because of the semi-structured format, it was easy to build trust with participants by discussing essentially what they wanted to discuss. There was a tremendous opportunity to take an interest and learn about participants' hopes, fears, and current preoccupations. It was personally rewarding. Interviewees often commented on how much they enjoyed it and felt that it helped them to express some feelings they had not yet articulated. Some interviewees divulged their innermost thoughts and feelings related to very personal matters. Some had tears. Some laughed. Some had tremendous hardships to share. Some needed someone to listen. It was rewarding to be a researcher under these circumstances.

The EBM interview was critical for understanding how participants made sense of the EBM concept and their roles within MOP. This interview was semi-structured as well but did not give participants as much freedom to guide the direction of the discussion. There were a number of pre-determined questions that were used to get at the aims for the interview. One drawback of having pre-determined questions was that they sometimes stopped the flow of natural conversation. In addition, interviewees had varying degrees of involvement and interest in MOP so interview questions had to be tailored to meet each

individual where he/she was at and that tailoring happened in real time. This was awkward at times and did not always yield data that contributed to the research aims.

In addition to the two types of interviews, MOP meetings, over the course of 16 months, were observed. Though note-taking verbatim (or as close as possible) was tiring, the close relationship with the process itself was critical in interpreting the authenticity of the events. In addition, the longevity of the data collection (16+ months) was important for gaining perspective on the process and at the same time, learning from it.

Thinking has evolved about the consequences of the researcher's presence within human subject research. It is now thought that there is not a relationship between being at or part of the research setting and the credibility of the research itself (Schram, 2006).

There is a difference between engaging in the experiences of others, from their perspectives, and directly experiencing the context in which others find themselves within. It used to be thought that one's presence influenced the participants' meaning of an experience. However, now scholars assert that the presence of a researcher can actually enhance a participant's "subtle understandings" of their experience which can't be observed passively. As mentioned earlier, some participants of this research stated that they felt they had the opportunity, because of the interviews, to think through and reflect on MOP in new ways. Regardless, though, the primary aims of this research were to uncover mindset characteristics and those would not change in response to a researcher's presence. They are fundamental to who someone is at a given point in their life.

Personal Insights

Overall, it was very rewarding to get to know the research participants in unexpected ways. Taking notes immediately after an interview or meeting was helpful, particularly notes about personal biases, preconceptions, and misconceptions. Keeping the original aims in mind during the analysis was a personal challenge. It was easy to get preoccupied with the mindsets of the participants and what changes to the MOP process could add to their mental growth. While this was interesting, it was not the intent of the research. The research was not about finding the ideal candidate for EBM or the interpersonal dynamics of the individuals. Rather the intent was to find ways to get to more inclusive policy decisions and optimal stakeholder engagement processes and to develop a fresh set of assumptions and expectations about decision-makers with a goal of enabling EBM to succeed to its fullest extent.

CHAPTER 3

PERSPECTIVE-TAKING ON SELF AND OTHERS

Conversations to date on marine ecosystem-based management reveal a paradox. Some of the literature suggests that in single species management, attention is on the dynamics of particular species and doesn't explicitly consider interactions between species (Rosenberg, 08). Recent literature also suggests that there is a significant lack of interactions between sectors managing human activities and an even greater gap of understanding of the interconnections between ecological and human systems (Leslie et al., 08). Just as important, but missing from current literature, is a call for a better understanding of the perspectives of the managers, scientists, policymakers, and industry groups who contribute to the current management system. If coastal ocean management is to progress to protect ecosystem integrity and maintain human-dependent services, it is critical to explicitly and empirically investigate how stakeholders are making sense of it all. After all, it is these individuals who are positioned to either protect or exhaust marine resources.

The following is one of the more prominent definitions of marine EBM:

Ecosystem-based management is an integrated approach to management that considers the entire ecosystem. The goal of ecosystem-based management is to maintain an ecosystem in a healthy, productive and resilient condition so that it can provide the services humans want and need. Ecosystem-based management differs from current approaches that usually focus on a single species, sector, activity or concern; it considers the cumulative impacts of different sectors (McLeod et al., 2005).

By breaking down these sentences, one discovers additional meaning inherent in the definition. “Ecosystem-based management is an integrated approach to management that considers the entire ecosystem.” Underlying this sentence is the sentiment that the human perspective of coastal oceans must be broadened. “The goal of ecosystem-based management is to maintain an ecosystem in a healthy, productive and resilient condition so that it can provide the services humans want and need.” Underlying this sentence is the perspective that it is a responsibility to conserve and sustain ecological value in order for humans to continue to benefit from ecosystems. “Ecosystem-based management differs from current approaches that usually focus on a single species, sector, activity or concern; it considers the cumulative impacts of different sectors.” Implicit in this sentence is the need for dialogue and deliberation among sectors and reflection within sectors about impacts to ecosystem goods and services. As the jargon and terminology used to describe EBM is broken down, more explicit meanings emerge. In short, the definition of EBM is calling for decision-makers to take and hold three perspectives at the same time: a holistic perspective on the marine environment, an introspective perspective on one’s responsibility to it, and a reflective perspective on one’s actions and interactions in relation to others.

How do decision-makers come to personal perspectives about ecosystem-based management? How do the varying degrees of perspectives on EBM and on one’s responsibility to it manifest during decision-making? Can EBM stakeholder engagement processes become mechanisms for taking on new perspectives? Chapter 1 laid out the theoretical foundation of constructive developmentalism which informs these questions. What is known is that throughout the United States approximately 44% of coastal

managers, for instance, have less than a working knowledge of EBM (CSC/NOAA survey, 2008) This chapter focuses specifically on the role perspective-taking plays in how stakeholders reason about this lesser understood type of management and their role within it. For this research, perspective-taking is defined simply as the capacity to evaluate and/or reflect on something. However, this chapter speaks to the degree to which one has the developmental capacity to do this. Developmental capacity, in this case, means the degree to which stakeholders can and do author their own perspective, i.e. the degree to which a stakeholder can create his or her own perspective, ideology or identity, manipulate it in their minds, weigh it against others, and set standards for themselves based on an internal authority (Kegan, 1994). As discussed earlier, there are often implicit assumptions that all stakeholders can do this. This chapter argues and illustrates that not all of them can.

Perspectives about the Massachusetts Ocean Partnership

The Massachusetts Ocean Partnership (MOP) was chosen as a case study because it provided a setting in which to investigate the interplay between learning about EBM and participants' current perspectives (Fazey et al., 2005). MOP is a context in which people make meaning. The more people participating, the more meanings, perspectives, and behaviors come into play. The unsaid is that when people come together around a single sector mandate, they likely share an implicit background of assumptions, values, expectations, and routines for decision-making. All of this is lacking when participants come together in an EBM process. This lack of shared/taken for granted background makes the process less stable / more dynamic. The complexity of the conversation shifts

and reconfigures itself as each person reacts and acts according to how they see it (Phillips, 1998). Individuals, in meetings like those facilitated through MOP, pay attention to what is already in line with their existing perceptual framework (Leovinger, 1976). When there is discord between their perceptions/values/beliefs and what's being discussed, they search for some meaning that coheres to what they already know, some frame of reference for understanding.

MOP was described in the two previous chapters. The first 16 months of MOP enlisted volunteers, who were considered to be representative of various sectors, to form a collaborative partnership. The mission was and still is to support the Massachusetts state government in implementing comprehensive, multi-use coastal ocean management or EBM. This research focused on those first 16-months during which the Partnership created its strategic and science plan. An incidental, but not inconsequential, result for this phase was MOP's becoming the state's mechanism for cross-sectoral communication. Because MOP is separate from government, participants were asked to "come to the table and leave professional hats at the door." Inherent in MOP's mission is the philosophy that both personal and collective responsibility is needed to change current management approaches to sustain natural resources. In this way, the onus will not default to any one sector.

MOP participants generally understand the EBM concept and describe it in similar ways using similar terminology (MOP, 2006). However, how they make sense of its implementation and their role and others' roles within it differs substantially among participants. For example, some participants want to have joint ownership of decisions made through Partnership discussions. Others want to defer to a selected governing body.

Some believe consensus is crucial for success. Others don't think consensus is possible nor do they feel it is important. Some see MOP as a safe meeting place to hash out individual differences. Others see it as an ill-defined mechanism that works better in theory than in practice. Such wildly different perspectives among participants calls to attention the differences in how they make sense of the directives of MOP as a facilitator of cross-sectoral interactions. Are these merely differences in opinion or fundamental differences about the very way in which participants understand the task at hand?

Summary of Overarching Mindsets & Mindset Transitions Used in the Analysis

(see Chapter 1 for review of characteristics of each mindset)

The following is a reminder of the mindsets used in this research and their transitions. Included is a chart that summarizes the mindset and other characteristics of each research participant. Note that this chart is only included in this analysis chapter and can be referred to throughout if needed. Again, these mindsets are not value judgments about participants; they are characteristics of how individuals make meaning of MOP and EBM.

- Interpersonal
- Interpersonal with some self-authoring
- Interpersonal (Dominant) and Self-Authoring
- Self –Authoring (Dominant) and Interpersonal
- Self Authoring with some Interpersonal
- Self-Authoring
- Self-Authoring with Inter-individual

The following chart represents the current mindset each participant exhibited during the research.

Key:

Interpersonal = 3

Transitional = 3/4 or 4/3

Self-Authoring = 4

With Inter-Individual = 4(5)

1. Chart of Mindset Scores

Participant	Mindset	Age	Education	Gender
One	3/4	34	PhD	F
Two	4(3) - 4	56	MS	M
Three	3	33	MS	M
Four	4	51	PhD	M
Five	4-4(5)	64	PhD	M
Six	3	33	MS	F
Seven	4	54	PhD	M
Eight	4	52	PhD	F
Nine	4-4(5)	49	MS	F
Ten	4/3	49	PhD	M
Eleven	4-4(5)	54	PhD	M
Twelve	4/3	37	PhD	M
Thirteen	3/4 - 4/3	54	PhD	M
Fourteen	3	56	BS	M
Fifteen	4-4(5)	50	PhD	M
Sixteen	4	N/A	PhD	F

Seventeen	4	72	PhD	M
Eighteen	4	66	MS	M
Nineteen	3/4 - 4/3	46	MS	F
Twenty	3-3(4)	40	MS	M
Twenty-One	4	54	MS	M
Twenty-Two	3(4)	43	BS	F

1. Chart of Mindset Scores

There were no major correlations between mindset, age, gender, or level of education.

However, some points to note are:

- No one under 49 exhibits a full Self-authoring mindset.
- Anyone exhibiting any Inter-individual mindset is at least 49 years old and has a master's degree.
- Everyone in their 30s exhibits some degree of the Interpersonal mindset.

The data were analyzed to understand the extent to which participants describe and/or reflect upon their roles and others within MOP and the concept of EBM. The following areas are analytic distinctions related to perspective-taking that provide a framework for discussing the analysis. The phrase analytic distinction is used throughout the analysis chapters to signify a characteristic within a theme that is particularly significant among mindsets. A summary chart is used at the end of each section to reflect on each mindset's characteristics related to each distinction.

- Connection to Affiliation
- Reacting versus Self-Authoring
- Capacity for Self Reflection

- Perception of Other

This next section systematically goes through the analysis of each of the analytic distinctions with discussion points to follow. An overall discussion which incorporates all research findings is in chapter 6. It is important to make the following points to help the reader better understand some of the nuances of the analysis. There are excerpts throughout all analysis chapters that illustrate how individuals exhibiting each mindset think about the analytic distinctions. Some of the text is **bold** to highlight thoughts and feelings that are particularly illustrative of that mindset. In addition, participants often refer to the “legislation” or the “mandate” because, at the time, a mandate for comprehensive ocean management was pending. Since then, it has been put into law.

Analytic Distinction 1: Connection to Affiliation

The following are excerpts from participants exhibiting different mindsets. They are discussing how their affiliation shapes their perspectives about the MOP process. These excerpts are primarily responses to questions asked during the EBM interview. Each mindset is discussed separately, illustrating how similar issues can mean different things to each.

Interpersonal Mindset. Participants exhibiting a predominant Interpersonal mindset come to their perspectives about MOP and their roles within it largely through the authority of their professional affiliations. These affiliations may be to their organization or agency or to another person, usually someone whom they regard as an expert on the subject. Others with a more complex meaning making capacity may also

come to MOP because of their affiliations, but the difference is in the ways they “hold” their affiliation, i.e. how identified they are with it and how they make sense of it. Here is one participant’s response to the question about why she is engaging in this process. Note that her response does not explain a personal theory on her participation but rather, more literally, why she is physically serving the role.

I think just because I serve more of a coordinating role in the region and can have a good sense, **a good bird’s eye sense of what (my affiliation) can bring to the table** and also sort of high-level politics that might be brought to their partnership in a positive light, and also because, **well (Personal affiliation) asked me and she is one of my all time favorite mentors so the bottom line is that is why I did it. But, I think the reason why she asked me is because of my multi-faceted role within (my affiliation) in the region and sort of what I represent there.**

”Because I was asked” is a common response for those with Interpersonal mindsets when asked how and why they came to MOP. Similarly, personal affiliation to someone involved is also important.

Perspectives on MOP related to affiliation can also mean, for someone with an Interpersonal mindset, acting from a need not to be excluded from something perceived as influential. The thought of exclusion leads to a fear that one’s affiliation and consequently, one’s self will be the victim of changes in marine policy. “You’re either at the table, or on the menu,” said one participant. There is a sense that one’s role in a process like MOP is to ensure there is inclusivity, specifically of one’s particular affiliation. The need for equality is a strong value for those with an Interpersonal mindset. They need to feel that in exchange for their participation, others will reciprocate by considering their interest. MOP and EBM-type processes are something they join or get on board with; these processes are a new kind of affiliation. However, they must first

trust that their interest is being heard and accepted by others in order to consider something an affiliation.

In conversation, an individual exhibiting an Interpersonal mindset has trouble separating himself from his affiliation particularly when the process, like MOP, is challenging him to do so.

Just talking about these issues together is a change but there is a tension here. I'm interested in the mechanizations and the process. It's troubling to me to not talk about and react to the legislation. We wouldn't be doing this without the support of XX (my affiliation).

This person seems to see the MOP process as being inextricably linked to the legislation, i.e. He does not separate the two in his mind and has a hard time reconciling any opposition between them. Similarly, others with this mindset are concerned that those outside of the MOP process will see the legislation and MOP as one in the same, without distinction between them.

Interpersonal – Self-Authoring Transition. In the transition to a Self-authoring mindset a tension starts to exist between someone's affiliation and his or her new capacity to see themselves and their ideas as distinct from their affiliation. Where they are in that transition determines how they define their responsibility to that affiliation. Participants who exhibit both the Interpersonal and Self-authoring mindsets feel comfortable separating MOP and the legislation but are concerned with balancing the needs of the state government (referred to above) and the needs of other interests. Here is a response to the last excerpt.

We need to balance both science and management with the legislation. It's critical that we integrate all.

This demonstrates a new capacity to consider two possibly opposing perspectives. In general, Interpersonal/Self-authoring participants may mention affiliation but also mention more personal reasons for getting involved with MOP such as, "I am someone who is interested in policy work. I am someone who is interested in trying to get a better idea of how you would actually do EBM." Or "I am sort of fascinated by the intersection of science and policy and seeing how that comes together and how scientific information actually gets used or not in making decisions. It is a personal interest." There also starts to be a tension between competing priorities and personal and professional boundaries start to emerge. They no longer allow someone in authority to be the sole determiner of their time or values; They begin to realize some of their own internal authority. They begin to feel a sense of equality. However, there is still a profound and fundamental sense of loyalty and obligation to one's affiliation, even as one with this transitional mindset struggles to define his or her own internal authority.

Self-Authoring Mindset. Participants exhibiting a full Self-authoring complexity interpret "affiliation" in a different way when discussing their perspectives about MOP. Here, one participant, who demonstrates a Self-authoring mindset, speaks about MOP as an affiliation.

I've spent a lot of time in the public policy arena and in the Atlantic and Pacific watching the evolution of oceans...I've watched the decline of marine life and coastal oceans and that's exactly what MOP addresses. MOP is trying to **build a community of interests that recognizes that there are a variety of competing interests for the use of the oceans and we have to work out common grounds as to how the interests can work together rather than all individualistically trying to pursue selfish interests.** I look at it as a commons situation.

Note the use of the word *community* in the excerpt above. The idea of community is a strong thread throughout the Self-authoring interviews. Community tends to be defined, by these participants, as a group of diverse individuals coming together to learn. This type of learning community becomes an affiliation of sorts where difference rather than similarity is valued, expected, and is the underlying principle for coalescing. They don't "belong" to a particular affiliation rather they create their own affiliation; they create and are creating it via the MOP process. Consider an exchange at a MOP meeting between Interpersonal and Self-authoring participants. The Interpersonal participant is concerned with fitting in and ensuring that the interest of her affiliation is not forgotten. The Self-authoring participant responds indirectly with his belief that there is concern for small businesses which he encompasses within "local communities" and that he hopes a budding partnership will begin.

Interpersonal participant: **I hope that this is a balanced initiative that supports all stakeholders and values small businesses along the waterfront. I want to make sure that there is access for everyone and everyone can continue to make a living.**

Self-Authoring response: **I believe in what local communities are all about. I want to forge local community and government partnerships. I hope we can set the benchmarks for success and that all other groups start following us.**

The individual exhibiting an Interpersonal mindset uses the word hope. The use of that word, in and of itself, isn't necessarily noteworthy. It is interesting in this excerpt, though, because she speaks about the initiative as if it is being imposed on her and on all other stakeholders. She is in a reactive mode to an initiative she sees as "out there," and defined by/created by someone else. She does not have a sense that she can manipulate and own the process. The Self-authoring person responding states his belief as a personal

conviction, as someone who feels a sense of ownership of the process; that he is responsible for contributing to its creation.

Analytic Commentary - Connection to Affiliation

Differences in how someone relates to the idea of affiliation can be powerful motivators or disincentives for collective change. The challenge and opportunity is that MOP and EBM stakeholder engagement processes provide a context in which meaning makers of different interests and capacities are purposely coming together to create change; in fact, the ongoing, intentional cross-sectoral dialogue alone is change. What does it mean, though, to have collective thinking? That everyone comes to one person's interest's way of thinking? That everyone comes to the same way of thinking, or that everyone freely thinks out loud together and shapes and reshapes their own thinking and collectively comes up with a new way of thinking? From a developmental perspective, how someone thinks about and engages in collective thinking differs among meaning making complexities.

The strength of those exhibiting Interpersonal mindsets is that they get the idea of connection and thrive on it. Their limitations exist in being able to separate from and differentiate among the various connections and embrace their differences as a means to self-growth. It is difficult for them to step back from their own affiliation and embrace a different, and perhaps competing, affiliation. If they are to make a connection, they want it to be harmonious and agreeing. Disagreement and conflict tend to be very difficult for them, which leads them to try to avoid it.

The strength of the Self-authoring mindset is that it is inherently about learning in connection with others who are different. It is about actively seeking out and constructing new knowledge and understanding through dialogue with others. These individuals are interested in developing a new kind of affiliation, a community of discourse. Within this community, they are comfortable with giving room for things to evolve which, in turn, helps to create a whole new process and understanding for everyone. The limitations of a Self-authoring mindset are their identification with their own set of values and beliefs in how things “should be.” They may be too invested in their own perspective and unwilling to change their mind which can cause the process to stall.

Mindset	Connection to Affiliation
Interpersonal	Literal description; Inclusion-belonging; equality; trust; MOP process tied to state process; loyalty
Interpersonal / Self Authoring	Personal/professional balance; personal/professional boundaries
Self-authoring	Learning community; create own affiliation – MOP process as value-added to state process; both representative of affiliation and an agent in his/her own right
With Inter-individual	N/A

2: Analytic Summary 1 - Connection to Affiliation

Analytic Distinction 2: Reacting or Self-Authoring

The following are excerpts from participants with different mindsets discussing their perspectives about their role in MOP or the role of MOP generally. What’s unique is the way in which participants see the process as either prescribed or open to interpretation. Those of an Interpersonal mindset tend to see the process as created “out

there” by someone else. Those of a Self-authoring mindset tend to see it as an open-ended process awaiting the group’s actions.

Interpersonal Mindset. One Interpersonal participant refers to her role as a “groundtruthing” one to make sure that what scientists say is applicable to management. MOP’s Interpersonal meaning makers tend to hold values that are prescribed by authorities, like one’s affiliation or cultural group. They tend to create their sense of reality through another’s frame of reference such as a leader they respect. The need to hold others’ perspectives to a test results from seeing themselves and their roles in the process as loyalists of and protectors of their own affiliation and interests. Their loyalty to and identification with their particular affiliation is the guide to their participation in MOP. They enter into the MOP process as one that is prescribed for them and they want to ensure their interests fit into what is prescribed. They play more of a reactive role – one in which they react to others and the process rather than actively creating it. Depending on one’s mindset, this way of making sense of the MOP process causes one to act with trepidation. This participant is responding to a question about endorsing the MOP process and strategic plan.

So we’re behind it, **we just don’t wanna have the XX make a knee-jerk plan that ends up causing all kinds of havoc for small businesses** that already have to go through just dozens and dozens of layers of permitting and regulation to do the smallest thing on the water front. **I fear that the die may already be cast** and words like EBM suggest that we just want marine protected areas everywhere. I want to make sure that there is access for everyone and everyone can continue to make a living.

For others a prescribed process lessons one’s responsibility.

I am very comfortable in the (MOP) dialogue. **I haven’t been put on the spot** but again it is state waters and **I have the luxury of being a (AFFILIATION)**. How separate is the MOP process from the legislative piece, I can imagine that makes others much more uncomfortable than me because **it is not really my business**. I

can't lobby for that, I can't work toward it. As a (AFFILIATION), **I would be reacting to that legislation passing.**

Interpersonal meaning makers are descriptive when discussing what MOP should do, i.e. they describe the content, the "what" that needs to be addressed.

There are more competing uses for ocean resources. **Marina space is exhausted** even though it's expanded now. I would've thought 5-6 years ago that it expanded to its maximum in MA but it continues to expand and (there are) other trade-offs whether it's habitat for shellfish or other important things. The bigger the marina, the bigger the boats, and the more maintenance. **Dredging needs to go on** and more demands for dredge material. **The ocean is considered an easier place** to get that kind of material so there are more projects whether it's energy, telecommunications, transportation. **We need to get the politicians to pay attention and help approve the framework** – the governance we need at the state level to create ocean critical mass. I think that's what we need.

Self-Authoring Mindset. As the Interpersonal meaning maker's capacity grows, a kind of personal theory or sense of reflection on MOP begins to take shape. The content is described as well as their conception of it. Notice the way this Self-authoring participant talks about this as his perspective. He is not removed from the process.

So **in my view** if this is a successful effort, it will actually **begin to push the envelope on what gets done from a management perspective.** There will be more **integration**, more analysis of cumulative impacts. **But that will only be partly success. If it did just that, it would fail in my mind** if it didn't also try to advance the science behind this and try to understand how you would not just practically do it but try to think about it **and use it as a way to inform other processes.**

This participant identifies multiple aspects of success and comes with multiple, diverse ways to put it to use – implement and apply it - regardless of his own affiliation's interests. Individuals exhibiting Interpersonal mindsets have a deep interest in their own sector's issues and concerns but have difficulty critiquing those concerns or stepping outside them to embrace competing concerns. They experience doing that as being disloyal to their own affiliation.

Self-Authoring with Inter-Individual. Lastly, there are four participants who exhibit the Self-authoring mindset yet also exhibit the transition towards the Inter-individual mindset. In some instances, this makes a difference in terms of the capacity with which they reason about a situation or idea. For example, in the case of actively generating theory, there is a strong sense of personal responsibility, theory and reflection on that theory yet there is a hint of something more. There is uncertainty weaved into their theory about what is MOP's purpose, yet, with a clear understanding that ambiguity is part of experience.

We don't really know what MOP is yet and that's been a repeated discussion at every meeting. People are there to some extent out of curiosity. If it's going to happen, you want to be there when it happens and want to be able to influence it and make sure it comes up with what you want it to be. I think that's what keeps people coming but I also think it keeps people away and on their guard. **We don't really know how open people have been because we haven't gotten to anything tough. It would be great to see all of the thought bubbles behind all the nice words. We haven't been challenged yet. It's been hard in that it's been grueling and there's been a lot of uncertainty but ...**

Analytic Commentary - Reacting or Self-Authoring

Fully being the author of one's own meaning making system is fully exhibited by 12 of 22 participants in this study. One may imagine that having so many individuals each with a strong sense of self, with self-generated ideas, may be a hindrance to a collaborative problem-solving process. The strengths of Self-authoring meaning makers can also be considered limitations depending on the context of the situation and the mix of individuals involved. Self-authoring individuals bring their own perspective to the MOP process and continue to develop their own perspective in response to new information and understanding. They recognize that others have their own interpretations

and biases and they advocate for these other views in pursuit of the mission of MOP.

Interpersonal meaning makers react to the many perspectives put forth which allows them to maintain loyalty to affiliation. In conversation, these differences in mindsets often play out as passive and active discussion participants. This is addressed further in Chapter 5 but essentially those with an Interpersonal mindset speak up to ask questions, give examples, or clarify something about their affiliation’s interest while those with Self-authoring mindsets, offer new theories for the group to explore. These new theories are not always fully understood by all the participants and this significant point is often missed by Self-authoring participants who implicitly assume that they are understood.

Mindset	Connection to Affiliation	Reactive or Self-Authoring
Interpersonal	Literal description; Inclusion-belonging; equality; trust; MOP process tied to state process; loyalty; identification with affiliation	Prescribed values; Test others’ perspectives to the “right” one; differences perceived as threatening
Interpersonal / Self Authoring	Personal/professional balance; personal/professional boundaries	N/A
Self-authoring	Learning community; create own affiliation – MOP process as value-added to state process	Tied to self-generated theory
With Inter-individual	N/A	Uncertainty/ ambiguity inherent in own perspective

3. Analytic Summary 2 – Connection to Affiliation, Reactive or Self-Authoring

Analytic Distinction 3: Capacity for Self Reflection

The following are excerpts of participants with different meaning making complexities discussing their own perspectives on the MOP process. They range from a

need to feel included and a desire to feel comfort from others to a need for self expression and open dialogue.

Interpersonal Mindset. Participants with a predominant Interpersonal mindset primarily reflect on how others perceive their input or their role. When asked about their voice in the process, they refer back to the collective voice of their affiliation, e.g. agency, sector. Whether through an affiliation or the MOP process itself, they tend to be keenly aware of what they believe to be the effects of their participation through the eyes of others. They judge the process by how they think others respond to them and their affiliation's interests.

At the first meeting, **the thing that I said they should do is what they are going to do.** I said that I thought they should do a blueprint on management and that is what they are going to do **so I think my voice has been heard.**

They internalize the many perspectives of others in the group. Consequently, they are very aware and focused on how their thoughts and opinions are the same as or different from others. Self reflection is described in relation to sameness or difference. Differences are generalized to "other(s)" when reflecting on the motivation of participants.

Everyone's obviously interested in their own thing (in MOP). It's diverse. There are social scientists. **Me and the social scientists have of course very little in common with how we see the world.**

Over time once perceived differences evolve to feelings of connection for some. This connection is often due to an initial trust of those perceived as authority and eventually transferred to others.

I didn't walk in that room (MOP meeting) at all initially and feel comfortable. I was surrounded by people who were senior to me and certainly more educated. The room was dominated by scientific types which I'm not. It was initially an intimidating environment. **I came to see over time that through the facilitation**

and leadership, a lot of my fears went away and my comfort level grew. And that's partly their style of soliciting opinions from quiet people and also getting to know the expertise in the room.

For those with an Interpersonal mindset connection to others means reciprocity and doing unto others as you want them to do unto you. "How can we not talk about these hard issues if we're going to ask others to do so with an aim of mutual understanding." A Self-authoring response is less about mutuality and more about understanding differences. "We have to be careful about threats and opportunities because everyone defines them differently. We want people to have the experience of having a different dialogue. Show them not tell them."

Self-Authoring Mindset. Those exhibiting a Self-authoring mindset also talk about their comfort level with the process and their role within it. The idea of comfort is not based on sameness or trust with others. These individuals reflect that it may be necessary to move beyond one's personal comfort zone when the process conflicts with one's personal theory.

I assumed that since I'm on a science advisory panel, **I was there for that reason and that makes sense.** But it seems it hasn't been thought out yet what exactly is going on. **I have been pushing for some context in these meetings and once I understand the context, it is much easier to say okay this is what we should do. I am a little uncomfortable with that because I am comfortable with myself as a (PROFESSION) and I am not comfortable with myself as a big thinker but in order for me to get to the point where I'm comfortable participating as a (PROFESSION), I need to understand the context.**

Self-authoring participants often reflect on the threads needed to complete a mental picture in their minds of their experience. If something lacks comprehension, they seek to find it by engaging others to help make sense of all the interconnections as they

relate to the overall context of the experience (Merriam et al., 2006). The following is an excerpt of a participant explaining just that.

Just going back to my last statement about the legislation – **thinking about it from that perspective maybe it is a good thing that there wasn't something tangible there to be dealing with. People had an opportunity to speak generally about the value of working together.** It's kind of hard to say that's not a good thing. But **actually spending time together talking about it and working through the same conversations.** I mean that's always something that's interesting. **Everybody has this perspective at a different time. You think you've gotten something resolved and then the discussion keeps mulling over things again and again and again and allowing that to happen and not cutting it short I think is really important. It's (the MOP process) been really at the group's pace and the leadership hasn't been pushing towards a predetermined outcome.**

Analytic Commentary - Capacity for Self Reflection

Literature suggests that the capacity to adapt oneself, self-correct and reflect requires a Self-authoring mindset (Daloz, 1986). Some of the participants with Interpersonal mindsets are able to broaden their perspectives because of supportive challenges from trusted others. One participant describes how she felt out of her element at first and very skeptical of the whole process. Yet, because of the kindness of the facilitator and the inclusion from other members, she started to reflect on her fears and discomfort and open up to new possibilities. This, however, took time – nearly a year of on-going interactions. Individuals of all mindsets create meaning that enables them to feel safe and familiar. With supportive challenge, there comes a trust to extend oneself to new ways of knowing – not necessarily a full transformation from one mindset to another but a glimpse at what could be (Daloz, 1999). Seeing individuals like the one mentioned here is exciting for a researcher particularly if the broadening in perspective is not just what they perceive but how they perceive – the mental and emotional process of forming

a more complex perspective. From an outside perspective, the transition from Interpersonal to Self-authoring can be quite rewarding as one starts to see oneself in completely new ways. It can also be quite daunting and difficult to make sense of the conflicting sides of the self. For the self-reflection theme in particular, it is critical to have a trained facilitator guide the MOP process. She plays an important role for the Interpersonal meaning makers. They trust her and see her as an authority who is neutral and has their best interest in mind. She is a conduit for them to experience different ideas and uncomfortable exchanges.

Mindset	Connection to Affiliation	Reactive or Self-Authoring	Self Reflection
Interpersonal	Literal description; Inclusion-belonging; equality; trust; MOP process tied to state process	Prescribed values; Test others' perspectives to the "right" one; differences perceived as threatening	Comfort – I was made to feel comfortable; Self viewed from perception of other; Concern with sameness/ difference to other; comparison to other members
Interpersonal / Self Authoring	Personal/professional balance; personal/professional boundaries		Strong self reflection; Other barrier to realizing self's needs (particularly 3/4)
Self-authoring	Learning community; create own affiliation – MOP process as value-added to state process	Tied to self-generated theory	I found what I needed for myself – self-comfort; Clear separation between self/other
With Inter-individual	N/A	Uncertainty/ ambiguity inherent in own perspective	N/A

4. Analytic Summary 3 – Connection to Affiliation, Reactive or Self Authoring, & Self Reflection

Analytic Distinction 4: Perception of Other

Motivation of others is commonly reflected upon by all participants. Throughout both the EBM and the developmental interviews, participants comment on motivation of other MOP partners, co-workers, state authorities, family, and friends. How participants perceived someone's underlying motivations differ among mindsets.

Interpersonal Mindset. The strong link to affiliation and authority is a recurring theme when those exhibiting an Interpersonal mindset discuss their perspectives of others involved with MOP.

And so, even though they (MOP facilitators) asked and said you (participants) are not signing your office up to support this document. This is you personally. **I think for most people who work for agencies and XXX, they go into meetings with the mindset of their agency, not just them personally. I think they are there to see what this is. They are not mandated to do this so they are not going to speak up. If they were mandated, they would speak up but because we are getting together and trying to create this, they are there to listen.**

Similarly to the Interpersonal excerpts under the affiliation theme, affiliation comes up again as a motivating factor for them – influencing how they act and react. There is not clear differentiation between one's personal feelings and ideas and the ideas perceived to be upheld by the affiliation. Their affiliation, in fact, seems to be a guide or template for their participation.

Interpersonal / Self-Authoring Transition. In the excerpt below, a participant who is just starting to exhibit some Self-authoring starts to see that differentiation but still sees others suppressing personal feelings and ideas to uphold the relationship to the affiliation.

I think the partnership was blessed to have adept facilitators who were able to keep conversations on topic and identify areas of friction, entertain them but not

wallow in them. I don't think that resulted in further polarization. I'd like to think that some of these barriers are starting to come down and people were not on the defensive by the end of this and really starting to feel like there was a level of trust that was being built and shared. **I do think some parties basically remained entrenched in the party line. Whether that party line was the message they were forced to carry and maybe they believe differently personally or professionally, I don't know. I'd like to think that would be the case and they were doing what they thought they had to do.**

With participants who are in transition in between the Interpersonal and Self-authoring mindsets, upholding a responsibility to an affiliation is a fine balance between responsibility to other and responsibility to self. A responsibility to the self and its perspective, as well as understanding the "truth" of others from their own perspective, is the balance beam.

It's like **two channels** I'm thinking of. One is developing a substantive rapport with the group so there's a **mutual respect**. They understand what I bring to the table and I value their expertise because of the role they fill. But to me **equally as important** is establishing a **personal, professional connection** because I really care about how these people do in their jobs because it affects the overall success of what we're trying to do together so I try to **take an interest in understanding their challenges, their road blocks**.

Simultaneously, this participant upholds her Interpersonal need for mutuality among participants but equally as important is her Self-authoring need to understand others' differences and define her own difference in stance. To do this, she must hold both her need for mutuality and her need to form a realistic picture of the others' different perspective. This is a balance for her.

Self-Authoring Mindset. Balancing the needs of self and other is not a concern for fully Self-authoring individuals and those with Inter-individual mindsets. There may be many more variables that pull on one's personal and professional sense of responsibility. When discussing barriers to MOP's success, they reflect on others as though they, too, are juggling many variables.

One of MOP's challenges will be convening groups as they're working toward harder positions or consensus on tangible things – **find ways of setting the table so people will feel that they really have to be there** – that they're going to miss out on something if they're not there. Because some obviously haven't been attracted enough to come and it's tough because everybody is busy and these are long meetings and a lot of conference calls. It's a lot if you're not bought in. **You have to really believe in the concept, the big picture – not just that it'll be a value to you.**

Note the concern about paying attention to the underlying needs and interests of others rather than the concrete standpoints of others (Jordan, 2002). She separates herself from the other thereby creating the mental space to attend to others in a more conceptual way.

Self-Authoring Mindset with some Inter-Individual. Similarly, those with some Inter-individual mindset are quite intrigued by the many variables that make people tick and are particularly interested in better understanding that as a way toward self-understanding. This next excerpt is from one of the participants who wants to get a different perspective from his own on the logging happening in the old growth forests of the Olympic Peninsula. To do this, he engages a logger in conversation. Note his last line. Unlike those participants straddling the Interpersonal/Self-authoring balance beam, there is no line to be drawn. He is "available" to have his thinking re-oriented by another. These parts of himself are integrated. Note also that he is speaking about difference as interesting not threatening.

(Talking with him) **completely re-oriented my thinking** about the issue because I'd never had direct contact with anybody in that part of it." **Interviewer: What compels you to put yourself in these positions to be reoriented?** "People are much more irrational and hard to follow and complex but I believe it's possible to model their dynamics and to predict how they will react to a change in state of the rest of the natural system. **I view this as essential preparation for doing anything innovative or useful in conversation.** I really want to know every nuance of every single person so I can understand how they work. **People**

are interesting. It's rewarding to learn about how people deal with the world. It's better than television. I don't know where to draw the line professionally.

Pertinent differences between Interpersonal and Self-authoring mindsets are the extent to which they reflect on why another person does what he/she does, the extent to which they recognize another's underlying reasons for acting in such a way, and the extent to which they recognize and readjust their own interpretations, needs, motives, and reaction patterns to another. The participant in the last excerpt considers his counterpart's reasons for his/her attitude to imagine and understand someone else's reality. He is aware that his reality is separate from another's and that they are both whole pictures of reality. Particularly in his developmental interview, this participant's Inter-individual peeked through as he reflects upon his own motivation. What's interesting about this next excerpt is that as he reflects on his own motivation, he not only notices his own internal contradiction that he believes people mean well but can also have a dark side but he actively and explicitly makes a decision about how he is going to think. As he begins to see and accept the many sides within him and his contradictions, he begins to see and accept others and their contradictions (Sinnott, 2006).

I've decided to believe that most people mean well. I have many, many experiences to the contrary. It's interesting to know what motivates people in my profession to do this kind of stuff. And I'm wondering how many others have had to face that same decision to **deliberately exercise faith in humanity** and in people... **I think it's a prerequisite for accomplishing anything like bringing communities together** to discuss how they're going to relate to the world, setting up systems for stewardship. **It just requires a general trust that people share certain values.** They value their children's lives. They value the future. They value that life remain glorious in its diversity and complexity. You have to otherwise, it's pointless **but that said, that ambition leads people like myself toward humungous projects that can really only be approached with immense cynicism.** And in those projects, which I'm still not sure why I get involved in, I have been double-crossed, been hurt very badly, become very ill - had horrible experiences. It's always because of a real minority of people, like 1 or 2 in a region the size of east Africa or North America. 1 or 2 but **those**

individuals are so bad that they restore my faith in one other thing – evil. They're really genuinely are evil people and it only takes a couple to make these challenges that we're involved in seem sometimes insurmountable.

Particularly important to note about the last two excerpts is the empathic voice that comes through in his words. Each of us engages with other people all the time, people who are different from us. Throughout most of these engagements, perspective-taking capacities stay intact. However, there are some interactions that are so powerful that they become transformative, i.e. a new way of making meaning is constructed. He explicitly faces and acknowledges contradictions in his own way of knowing. It was only within the interviews with participants who exhibited some Inter-individual structure where these internal contradictions were mentioned.

Analytic Commentary - Perception of Other

I'm (about to cross the border into Canada) and I noticed a couple of customs officers – border guys – whoever they are walk down and they're coming right to me. They say, do you speak English and I say yes. And they said well you can't cut line. You have to turn around and go to the end of the line. And that made me pretty angry right away- well wait a minute I said, I didn't cut line. I actually got out of line to get my passport. And they just turn their back on me and started walking away and said you have to go back to the end of the line. And that's what made me angry. **I wasn't given an opportunity to explain that I thought what I did was pretty responsible – didn't do anything out of turn.** They're claiming that I hopped the line and I have to go to the end of the line (laughter) so I thought it was both silly and it just made me angry that that **this is probably how they treat people all the time.** How could that even happen? How could that be important with so many things in the world going on today and **they must have important things to do there at a border crossing, given our day and age with the terrorism and homeland security both here and in Canada** but I just thought that was kind of absurd, made me angry it was so absurd.

This excerpt is taken from the developmental interview of a participant with an Interpersonal mindset. From here he goes on to say that eventually he starts to feel sorry for the two border guards, particularly the younger guard who was "following the lead of

the older guy.” What’s interesting about this excerpt is the way in which he conceptualizes these two guards. He has difficulty separating his emotions and opinions and his conception of their motives. With probing, he does not mention or seem to be aware that there may be another interpretation of the guards’ motives other than what he describes. He believes he is acting responsibly and is looking for reciprocity from the guards and does not mention or seem to see that there may be many factors influencing the guards’ actions.

As one transitions into a Self-authoring mindset and beyond, there is an increasing ability to step outside oneself or one’s perceptions and separate from one’s own view to observe and reflect on all the subtleties of what is happening. When this happens, the conclusion one forms about another isn’t entirely framed by one’s own feelings and interests (Jordan, 2006). Consider this excerpt from a participant exhibiting some Inter-individual mindset. Notice how his discussion of “other” is more removed, almost philosophical rather than emotional. And he, like a previous excerpt, also speaks of internal contradictions.

Interviewer: What are the barriers within MOP to creating a new paradigm?

Participant: Well, I think **preconception** is certainly one. **I have plenty of preconceptions it is not that I’m out of that loop but certainly, preconception and its handmaiden -fitting within existing structures -they kind of reinforce one another,** and there are the absolute realities that we have governmental structures and funding structures, both of which are the foundations of any action that can be taken and those structures change slowly so it is not surprising that those concepts keep coming up. It is why I say maybe there is not another way and I think that’s why those people that guide us with their own concepts and don’t put down any good ideas that don’t fit with their views are very facile. **Maybe there is no other way than to use the old concept sort of rethreaded. I think that if anyone, particularly some of the organizers, heard me say that, they would say -geez, let’s throw him off. But, I am an enthusiastic supporter,** I just worry that things are declining faster than any of these processes can really make any difference, maybe that is just a fact of life on this earth.

Ongoing dialogue and exchange of different ideas, within an emotionally safe meeting space, can be critical for those with Interpersonal mindsets in order to buy-into cooperating with diverse interests and to start separating oneself from other. For example, if the idea of a new paradigm is going to go any further, discussion must take place to flesh out the different meanings participants hold for the concept. Dialogue for nearly all participants is a sort of education about oneself and one another. For Interpersonal individuals whose conceptions of other are more closely tied to oneself, open dialogue helps them to reflect on how their initial perception of someone may be reconceived. They become less defensive. Differences don't seem as threatening to one's sense of self as one begins to separate oneself from other and gain perspective (McAuliffe, 2006). In other words, open, honest, and inclusive dialogue is a way to create new possibilities and interactions (Isaacs, 1999).

Analytic Summary 4

Mindset	Connection to Affiliation	Reactive or Self-Authoring	Self Reflection	Perception of Motivation of Others
Interpersonal	Literal description; Inclusion-belonging; equality; trust; MOP process tied to state process	Prescribed values; Test others' perspectives to the "right" one; differences perceived as threatening	Comfort – I was made to feel comfortable; Self viewed from perception of other; Concern with sameness/difference to other; comparison to other members	Affiliation as motivation for others
Interpersonal / Self Authoring	Personal/professional balance	N/A	Strong self reflection	Differentiation self/affiliation; careful balance

Self-authoring	Learning community; create own affiliation – MOP process as value-added to state process	Tied to self-generated theory	I found what I needed for myself – self-comfort; Clear separation between self/other	Others as multi-dimensional
With Inter-individual	N/A	Uncertainty/ambiguity inherent in own perspective	N/A	Multi-dimensional essential in dialogue for learning

5. Analytic Summary 4 – Connection to Affiliation, Reactive or Self-authoring, Self Reflection, & Perception of Motivation of Others

Perspective-taking on self and others takes on many forms. This chapter laid out developmental difference in perspective-taking within four analytic distinctions central to the MOP process: Connection to Affiliation, Reacting vs. Self-Authoring, Self Reflection, and Perception of Other. The excerpts were chosen from developmental interviews, EBM interviews, and meeting transcripts to show a range of examples of meaning making complexities manifesting within different contexts.

What does this all mean for environmental decision-making? At the very least, understanding “where someone is at” with their capacity to have and take on new perspectives is helpful to setting expectations for which EBM tenets are achievable given existing learning mechanisms. MOP facilitators can build a learning community by setting up processes that speak to participants where they are and acknowledge differences in meaning making. In addition, there is a tremendous opportunity with processes like MOP that are focused on cross-sectoral decision-making to become venues for developmental growth. Time, continuity, support, and practice are essential elements for developmental growth. MOP’s structure currently supports these elements. There is

time, outside of government, for participants to hash out individual differences. There is continuity among members and they are continuously courted to remain involved. The meetings provide a supportive environment to “leave your affiliation at the door” and speak openly. The nature of MOP is to provide capacity for these diverse individuals to practice trying out new perspectives, get clearer about their own, and/or understand others’. MOP can become a model for other EBM-like processes by being even more intentional about these elements. Kegan calls this type of environment a “holding environment” in which an individual’s environment has three functions: 1. To support them where they are developmentally, i.e. how they interpret and reason about the situation (Kegan 1982; Kegan et al., 2001; Popp & Portman, 2001). 2. To challenge the individual to stretch the limits of one’s current meaning making system. 3. To provide a stable space an individual needs to integrate new ideas and feelings into his/her current meaning making system that will transform his/her way of knowing. This transformational learning can, in turn, benefit the stakeholder engagement process itself. The process becomes a classroom for learning rather than a courtroom for debating, winning and losing. In Chapter 6, recommendations are offered for incorporating developmental considerations into environmental decision-making and are drawn from the findings and lessons learned across all chapters.

CHAPTER 4

CREATING AND ACCEPTING CHANGE

Some experts suggest that ecosystem-based management (EBM) constitutes a change in management paradigms (O'Boyle, personal communication, 2007). Chapter 1 outlined some of the implicit demands either unique or significant to an ecosystem perspective – attending to multiple variables, shared responsibility and ownership of decisions, empathic engagement with others, comfort with ambiguity, and the capacity to reflect on the process and oneself within it. The Massachusetts Ocean Partnership (MOP), the case study for this research, is a venue for building stakeholders' capacities for taking a different management approach. However, MOP is one small piece of the many responsibilities that participants have in their professional lives. This chapter lays out some of the institutional and cultural barriers to change in coastal ocean management. Developmental barriers and pathways to change are discussed. Change, for the purposes of this chapter, is defined by how participants experience and understand the types of changes that EBM implies for MOP, their affiliations, and themselves. In other words, the research uncovered what change meant to participants. Does it mean a personal change? Does it mean a policy change? Is it something they take responsibility for? Is it something separate from them? This chapter makes sense of those different meanings. Chapter 6 offers developmental recommendations for making the process of change one of learning and self-growth.

How people respond to policy change individually and collectively is often neglected in the natural resource management literature (Gunderson & Holling, 2002). It can't be assumed that participants and/or stakeholders all come to the process with the same motivations, intentions, or complexity of understanding. From a developmental perspective, one's mindset affects how one understands processes and what one attends to. Taking a step back and looking at a process like MOP as a whole, with all of its contributing factors and its dynamics, can be difficult because environmental decision-making is so complex and trying to evaluate cause and effect is nearly impossible (Sterman, 1987). In addition, for the participants themselves, changing one's frame of reference is not easy nor is being open to new mindsets (Argyris, 1985). To produce change, participants must be adept at, or explicitly supported in, taking different perspectives.

Preliminary data collection to this research shows that resource managers and scientists believe that barriers to change stem from myopic management institutions which encourage or perpetuate a culture of redundancy, exclusivity, distrust, and ignorance (COMPASS, 2006). The same interview data show that leadership and a strong commitment to change among senior management facilitates change throughout the organization. Many also believe that funding and other resources are necessary to even begin a process of change. Discussions continue as to whether new mandates are the only way that institutions and the individuals that comprise them will embrace change (Rosenberg, 2008). Are individuals willing to or have the capacity to facilitate change without being mandated? This chapter unravels the developmentally diverse ways

participants experience and understand the types of changes that EBM implies for MOP, their affiliations, and themselves.

Theoretically, MOP is creating a stakeholder engagement process in which participants come to the table as independent individuals who represent various sectors but are not bound by them. Solutions emerge by dealing constructively with difference such as with a trained facilitator. Attention is spent nurturing joint ownership of decisions. By signing off on MOP products and plans, participants assume collective responsibility for its future direction and domain. In essence, collaboration emerges and is not always articulated as such (Daniels, 2007). One participant remarks that the act alone of bringing together this set of sectors on a regular basis is a change. The process characteristics just described coupled with the implicit demands of EBM described in chapter 1 go above and beyond the physical act of getting different interests to sit in a room together to talk.

The chapter 3 summary of developmental manifestations of perspective-taking reflects that individuals with an Interpersonal mindset find comfort with change depending on how they are treated within the group. In other words, they look to others for a sense of belonging which leads to more comfort with the process. Self-authoring participants manage their own comfort with change by changing the process or gaining a stronger understanding of its underlying context. In other words, this balance of change and support is significant for participants of all developmental capacities. The following analytic distinctions related to change highlight the differences in perspective among individuals with various mindsets:

- Responsibility and Change

- Change in Decision-Making Processes

Similar to the last chapter, each section has a summary chart to review mindset characteristics.

Analytic Distinction: Responsibility and Change

Whose responsibility is it to institute a change in coastal ocean management processes? This was one of the questions asked of participants during the EBM interview. How participants define responsibility, and whose burden it is to take responsibility, varies among mindsets.

Interpersonal Mindset. Change in ocean management practices for participants with an Interpersonal mindset comes in the form of a mandate – “changing mandates, changing minds” is the motto one participant had. They understand that others have their own issues and that to integrate new ideas is not easy. Being “forced” through a mandate is a sure way of changing behavior and attitudes. Here is one participant explaining EBM implementation barriers.

People and their institutions aren't set up so that they understand what their current **capabilities and limitations are in terms of reaching EBM within current mandates**. How to go about legislatively and politically changing the system and changing people's minds and behavior to function with a more holistic perspective is very difficult. What are people's individual obstacles with getting to EBM – **the thing that is probably prohibiting them is their mandate and that they've done it this way for 30 years and don't want to think differently.**

When asked whose responsibility it is to take an EBM approach, this participant wonders how a particular authority-figure within MOP would answer that question. She continues to say that if the federal system does not change, essentially no one will. Participants with

an Interpersonal mindset see a clear connection between authority, responsibility and change. Authority in this case means power being held by another. They do not refer to an internal authority of their own. They do not discuss personal responsibility and change explicitly during the interviews. Rather, when they discuss the need for a mandate, they say they are committed to take responsibility if that mandate is already in place and sets a course for all to follow. This is reflected in their developmental interviews as well – the feeling that they must take responsibility when put in a position to do so by a superior. A participant describes a particularly tenuous situation at work that he must deal with and this is how he makes sense of it:

You have to take ownership because **you just sort of have to. It's my job. It's my responsibility to broker and really fight for the agency and the best interest of my staff** so really trying to push back as hard as I can. I feel that it is just in **my job description and I shouldn't be doing the job if I can't do that.**

His responsibility is to his superiors, to the job itself and to doing it right, according to standards set by those in authority. A participant with a Self-authoring mindset exhibits a responsibility to his/her own standards.

In addition, it is difficult for these participants to make decisions that require them to reflect on other participants' constraints and needs and how all can come together toward a common goal. This is also reflected in the developmental interviews in which competing interests are both personal and professional. They struggle with how to integrate these and still maintain their loyalty and meet their colleagues' and families expectations of them.

I'm feeling **anxious** because I'm feeling like **I'm letting someone down by pushing back** on work load issues and maybe I'm not disappointing anybody because everyone understands the situation but it makes me feel anxious **because I'm a can- do person. I don't want my state friends and colleagues to think that I'm decreasing my duties for my own personal gain or well-being.**

Integrating competing interests on a professional level is also challenging during MOP meetings. “The fishing industry is my main concern and center of attention. It is always difficult to represent them fairly because there are so many different sectors.” It is challenging for this participant to internally hold these different interests in real-time, during meetings and during reflection.

Interpersonal / Self-Authoring Transition. This next excerpt is from a participant who exhibits both Interpersonal and Self-authoring complexities but leans toward Interpersonal. She also believes in the importance of an external authority taking responsibility for the common good. There is a different perspective on how she is thinking about it.

I like the concept of democracy but it is very inefficient but I am attracted to the whole autocratic approach. We need this person to just come in and be like, this is the way it is going to happen. Whoever writes the bill or passes it through the legislature – nothing is going to happen until they tell us to do it.

She answers the question about responsibility with a similar response as the previous participant yet she frames it by what she likes and what she is attracted to – the beginning of a more self-authored, personal theory perhaps.

A participant exhibiting equal Interpersonal and Self-authoring structures is less concerned about mandates leading to change and more focused on the challenge between personal and professional responsibility during MOP meetings. She precludes this next excerpt with a story of an Interpersonal relationship that is challenging. To make matters worse, her challenge is with an individual she works very closely within MOP. She recognizes that she can only control her own behavior and that “getting along” with this

person is important for MOP to work toward that change agent status. She calls this challenge a little “dynamic node” among the much larger universe of MOP.

To get into the psychobabble of it, **the whole boundary issue and knowing how or learning how to interact with somebody as two responsible adults – each responsible for taking care of him or her self and not having to make everything all nicey nicey. Some things just get left unresolved or some things, when you’re speaking authentically, aren’t easy to say so learning how to sit with that has been enormously challenging but good you know.**

This excerpt is a nice example of her interpersonal self wanting to smooth things over and not cause conflict. Whereas, her Self-authoring self does not want to compromise who she is when interacting with this person. Yet to be able to do that, and risk the relationship, is scary, but at the same time, personally satisfying. Her Self-authoring self is taking responsibility for making this partnership work and the partnership, with its promotion of honest and open discourse, is enabling her to face her Interpersonal mindset challenges head on.

Self-Authoring Mindset. Within nearly every Self-authoring interview, participants answer the question of whose responsibility is it to take an EBM approach with “anyone who believes in it.” Regulatory authority is important to some as part of a broader focus on collective action. “It’s bottom-up, top-down, somewhere in the middle.” Others discuss the differences among sectors to take responsibility to make change happen – their constraints and freedoms. Authority is not talked about as something that an external individual/agency has or embodies but as something that is given to them through legislation for a specific purpose.

Participants with a Self-authoring mindset see change in coastal ocean management as a fluid process with many drivers of change. Here is an interview

response when asked about whose responsibility is it to take an EBM approach. He believes strongly that NGOs are best set up to do this because they can provide the context for collective action but that there are always conflicts among different interests:

You try to make everyone understand the basis for decisions and you try to make the best social decisions possible and the ones you make today are not the same as the decision you would come to five years from now. Even with the same knowledge, society is changing so you can look at the same system and the same information at two different points in time and there you will come up with two slightly different answers.

This participant exhibits the capacity to see that one solution at one point might not be a solution at another point in time or within another context. He understands how discrete issues may change the whole dynamic.

Self-Authoring with Inter-Individual Mindset. Those with a Self-authoring mindset who exhibit some Inter-individual qualities bring a more philosophical stance to the responsibility for change question.

I think it is the (responsibility of the) brilliant and concerned minds at this table. **Everybody brings a little something. They all have a sense of dedication coming from different slants. But maybe they have to be terrified** to really come up with something. They are a bunch of scientists whose process and methods don't lend themselves well to present circumstances and in my judgment we all doubt ourselves because we're taught to. **Sounds very depressing but I am actually quite excited** about most things but I am as much excited because I am present at this most sentinel time in environmental history. We may be watching the end of whole precious ecosystems and **it is not very happy but it is also damn interesting which is very hedonistic of me.**

He holds several viewpoints within his perspective and reflects upon them – viewpoints of dedication, feeling terrified, feeling depressed, feeling excited, and yearning for something interesting. He internally digests these differences within himself with a sense of self-acceptance.

Another participant exhibiting some Inter-individual structure discusses the difficulty he has allowing others to share in his decisions personally and professionally. In his developmental interview, he reflects on his struggle of knowing that he must share responsibility to be able to reach his goals and achieve the change he desires but this is not easy for him because he is very tied to his own theory of how things should be done.

This is one place where **my personality type and reaching out can come into conflict with another**. Whenever you work with another person or many other people obviously, **in order to make that work, everything can't be your idea right? It's clear to me if I'm successful at some level the project that I've been trying to get off the ground will become much less mine. I'll have to be flexible** and maybe the way I see moving it forward and the goals – in order to go forward there has to be more people involved and **more opinions. It's not like it will transform me in some way. It'll be something I'll have to cope with** (laughter).

His definition of responsibility is to integrate, or at least acknowledge, differing opinions to produce a more collective outcome. However, he struggles with separating himself from his self-authored theories to make mental room for other self-authored theories.

During MOP meetings responsibility comes up as a theme during discussions about what it means to be a member of this diverse partnership. Participants with an Interpersonal mindset are willing to take responsibility for MOP's direction if it continues to directly affect their interests.

I have an interest in the legislation and concerns about it relative to (my sector). If MOP decided it wants to discuss legislation even off the record, I'm interested in engaging that.

A person with a Self-authoring mindset responds from a point of view that considers the interests of many and how the content of the discussion would engage or stifle participation.

It would be a shame to have interests that have really strong stakes and are afraid to participate in the discussion and shape what happens because they're afraid of what will happen.

Another example of developmental dynamics playing out in meetings demonstrates the different emphases participants place on the legislation. Both participants below agree that bringing the legislation into the discussion is a bad idea. The participant exhibiting an Interpersonal mindset with a bit of Self-authoring is concerned that discussing the legislation will emphasize differences among participants when they are trying to build commonality (which is how he views consensus). He is also concerned with how others, outside of MOP, view MOP and believes that highlighting members' similarities will help with this. A participant exhibiting Interpersonal and Self-authoring mindsets equally feels that a discussion about the legislation would damper partnership-building (which is how she views consensus).

This (MOP) is a start-up organization and **needs to establish credibility** with the outside world. I would disagree that **engaging the legislation** is a good way to do that because **it'll highlight the differences among us.**

She responds:

We want to **improve the understanding of another's interest.** Legislation isn't the vehicle for **partnership-building** and outreach. This (MOP's process) is an attempt to **depolarize and understand each other's interests.**

The cross-communication here may occur because one participant understands consensus to mean sameness and the other understands it to mean different, but equal. Reconciling these subtleties in conversation can be difficult because a whole discussion can stem from this in which the very topic under discussion is defined in quite different ways from the onset.

Responsibility and Change – Analytic Commentary

These excerpts reflect, in part, one's motivation to change and one's stance toward processes that encourage change. The type of change that is being asked of participants in the MOP process is two-fold – to represent your affiliation as part of this new way of interacting with different interests (to come to the table) and to engage in a form of dialogue that attempts to integrate diverse viewpoints by understanding their common threads and building upon those. Similarly to the previous chapter on perspective-taking, individuals exhibiting an Interpersonal mindset feel a strong responsibility to their affiliation and its interests. This sense of responsibility is the motivation for participating in change initiatives. For some, this is a big step and perhaps a risky one – definitely one that is not taken lightly. They are very deliberate about their participation and often very clear about their professional boundaries. On the other hand, those exhibiting a Self-authoring mindset presume change as being inherent in these types of efforts – change even to a small degree. They also presume that it is the responsibility of all to make change happen.

Participants with an Interpersonal mindset speak of a mandate as a path to change. In essence, a mandate acts as the authority that describes the types of changes that will occur under comprehensive ocean management. They do not feel comfortable talking about MOP's direction without also talking about the pending legislation and the impact of a mandate; they conceptually struggle with separating the two and differentiating between them. The mandate they refer to is the order they feel they must follow – the model of an external authority. A mandate gives them the direction that in turn, helps them to understand the best course of action for MOP. Participating in MOP means

accepting the possibility of change as something that they “may have to live with” and/or deal with the uncertainty of the direction of MOP.

Experiencing a greater sense of authority within oneself, those exhibiting a Self-authoring mindset see MOP as a change agent in and of itself, and that they have the power to influence and develop it. The change agent of MOP is seen as being created by combining participants’ different types of knowledge to create new understandings and a renewed sense of responsibility – one that transcends individual interests. In order to do this though, these participants engage with, rather than react to, what is being thrown at them during MOP meetings to seek ways of being a force of change (Jordan, 2002).

Those exhibiting some Inter-individual mindset reflect upon and think critically about the opportunities and obstacles to change and how one’s capacity for taking responsibility is influenced by many factors.

Mindset	Responsibility and Change
Interpersonal	Taking responsibility because of authority / rules; responsibility to my interest; loyalty
Interpersonal / Self-Authoring Balance	
Self-Authoring	Collective responsibility; How change affects others; taking responsibility for oneself
Self-Authoring with Inter-individual	How and why one takes responsibility is influenced by many things; Can sit with the idea that one may have conflicting responsibilities – to self, to other, to a self-generated moral standard

6. Analytic Summary 5 – Responsibility and Change

Change in Decision-Making Processes

The extent to which participants feel comfortable with differences in opinion and with incorporating new information into what they already know is tied to the complexity of their reasoning. In the interviews and in meeting transcripts, the need for consensus in the MOP process is discussed many times. Some believe it is important, others don't, and those opinions vary across mindsets. How people make sense of consensus and commonality and their impact on change differs among mindsets and some patterns emerge in terms of yearning for sameness and embracing difference.

Interpersonal Mindset. Individuals exhibiting Interpersonal mindsets see MOP as a place for different types of conversations to occur among diverse interests. When they believe consensus is important among members on key decisions, they do not attribute that change to the MOP process itself. Rather, they believe that consensus truly works when it is supported by a mandate or ordered from "on high":

It is a culture that needs to be changed and that is not going to happen around the MOP table. If we can't make it work within the existing mandates then it is not going to go anywhere because I think what I have come to realize is that it may take changing mandates to make comprehensive ocean management work. When you are talking about EBM to different people, the fisheries people are coming from one perspective and CZM is coming from another, land use planners are coming from another and people have their mindsets and unless a mandate is there to force people to integrate then you're not going to really get there.

For participants exhibiting an Interpersonal mindset, different sectors with different perspectives represent a hindrance to forming common goals when trying to get consensus "on one's own." For them, consensus means all agreeing or at least agreeing to disagree.

As someone's mindset gains complexity, one sees the value in a group like MOP in and of itself.

The strength in this is in the separate channel that's sort of non-spotlight and less of an intense forum for people to really have meaningful discussions and to **move beyond some of the polarizing and paralyzing discussions or perspectives of viewpoints that have been taken in the past. The endorsement of this is really saying I'm not necessarily signing onto any type of plan but I'm signing onto the fact that I'm agreeing to be a partner and I'm endorsing the process.**

The Interpersonal aspects of this excerpt are the focus on the difference among members. However, this person also starts to see the opportunity to "have meaningful discussions" when integrating different perspectives. The emphasis, though, is on bringing people "to the middle" to move beyond difference rather than to accept and embrace it. According to this same participant, MOP also provides the opportunity to reflect on how one is doing business.

This EBM concept is an **impetus or kick in the pants to examine our structures and our interactions** in terms of organizational hierarchy and interrelation of responsibility amongst agencies **whether or not we formally change organizationally or just change the way we're doing business or we recognize things are okay.**

The emphasis above is still on difference and the need to go back to one's individual agency to rethink existing structures rather than embracing the cross-sectoral dialogue to come to new understandings together. For participants exhibiting the Interpersonal mindset the MOP process does not yet represent a place to reorient and redefine structures across institutions through meaningful discussion. MOP remains separate, a place to come to the middle or a place to rethink one's own interest. Then they return to their affiliation and move forward. The implicit demands of MOP are not integrated into the Interpersonal mindset. They are not carried with the individual in

every setting; they are not part of how one knows but are what one does at MOP meetings.

Lastly, for participants exhibiting Interpersonal mindsets it is only through a mandate or a personal interest that change is considered. To be able to make sense of this, one participant suggests that change won't occur until there is a whole new generation of decision-makers. How sectors are different from one another is very clear in the Interpersonal mindset and individuals within those sectors are viewed as similar to one another in values. When asked how others' see EBM, one participant says,

I think that most people look at it (EBM) **from the perspective of the realm in which they work.** This is probably going to change with the new generation of people coming into the field but a person who has been a fisheries scientist for 40 years and thinks he's been doing EBM – well, no you haven't been doing EBM ever and you are not going to change. **Those people are not going to step out of their world as a fisheries scientist** for the last 40 years and say, well, wait a minute, we need to have science inform management. We need to have trade-offs, etc. **If they are managers, they are driven by jurisdictional mandates. If they are scientists, they are driven by the interests of scientists.**

He determines “what someone is like” based on their affiliation's interests. And he believes that the ways in which or the extent to which someone changes is dictated by their interest.

Interpersonal / Self-Authoring Transition. A participant exhibiting both Interpersonal and Self-authoring mindsets struggles with differences of opinion hindering group progress and yet, on some level, values difference – “you want as many people involved as possible.” The tension here is between her intellectual understanding that having as many people involved as possible is important for meaningful dialogue and her own sense of comfort with actually doing it and seeing it as a necessary means for progress. She is reflecting on one of the MOP meetings.

There seems to be a little bit of a **lack of continuity** between some of the scientists that are at the table **and so then a new voice comes in with this other perspective and that's a little difficult (for me) and so while I think that's really valuable because you want as many people involved as possible but it's also difficult to be like, okay but we have already been there and we just moved beyond that.**

Another participant at the Interpersonal / Self-authoring transition attends to the importance of building a process that evolves despite, and in light of, difference.

I don't think they need to reach consensus. I think if there were **strong alternative points of view that both should come forward and we could see how that played out** when it got down to the fundraising or government level. I think that is where sometimes groups do run into problems when you try to reach consensus around everything. The danger of getting **too much consensus is that you end up with these generic documents that don't mean anything.** In the case of the MOP (strategic plan), I thought we were able to keep the specifics in so I was not upset. **There wasn't anything in there that I'd say I'm putting my foot down. If you put this in I'm not going to sign it.**

This participant finds that having consensus can actually weaken a meaningful outcome which implies that difference strengthens it. What distinguishes this excerpt from a fully Self-authoring one is that differences are put into bins of one versus another, right and wrong. There is a black and white conception of opinion. The plan is judged based on whether his affiliation's interests are incorporated. This participant is not yet able to conceptualize a process in which commonality can stem from difference.

This next participant leans a bit more toward a Self-authoring mindset, though the Interpersonal is present. He discusses the value of integrating difference into decision-making and sitting with difference.

Yeah I do (feel that consensus is important). I'm not sure what we would have achieved if we weren't able to work towards that. There has been a lot of banging back and forth in the alleys but I think everyone is moving in the same direction and **part of the role of MOP is to be able to articulate what ocean management means and that is what we are doing. We are all trying to figure out that for ourselves and we have the advantage of listening to each other talk and incorporating that into our own minds.**

Interviewer: If someone was open to someone else's opinion, what would that lead to?

It may or may not lead to a change of opinion but it would be open in the sense that there is that perspective that exists and it is probably not necessary to change that person's perspective but it is part of the equation and they have to deal with it or incorporate it.

The relevance here is in his capacity to mentally hold, and therefore, perceive another's, different perspective which can, in turn, influence his thinking and the process.

Self-Authoring with some Inter-Individual. A participant exhibiting a fully Self-authoring structure with some Inter-individual has yet another way of making sense of difference. He is less concerned with integrating differences among individuals and more concerned with changing the current ocean management paradigm to reflect something fundamentally different. The individuals involved in that, according to him, should be those that would contribute the most toward making that happen.

I have very low expectations of these types of undertakings...I think this might be a weakness (of MOP) of some influential people having a preformed concept. An effort like that that starts with those concepts, doesn't test any new direction or test them well – it has struck me that to really do the job that's necessary, maybe it's completely impractical until you are terrified, but to do the proper job, we need a new paradigm and we don't get a new paradigm if we work within the system. On the other hand, if we work outside the system, the preconceived conceptual structures, maybe we get nowhere. I continue to be yin-yang on the subject. I do believe that's the direction we should go, start and meet twice a month for a year and come up with a new paradigm and insist that it be new until there's no other concept but the old paradigm. Then I would be more willing to yield on the subject. I cannot imagine this group reaching a word-by-word consensus so I think there is a broad consensus but the broad consensus is the old format.

He describes another group he was part of that was trying to reach a consensus and that the size of the group made it unwieldy. He doesn't think MOP is supposed to be about consensus and that it is supposed to be about talking and "out of the talk comes the

vision.” He has an orientation to the process itself not a particular outcome. He assumes deliberation leads to integration with the implication being that one comes to new understandings about oneself and about the process through dialogue with others different from him. When asked who should be involved in creating this new paradigm, he responds, “I think fewer than what we got. I’d leave me off. I’d take XX and a couple of other people and throw them into a room and then ask them not to go by the old methods – what would they do if they had loads of money and they were God. I don’t know. I am going back back-n-forth between the old paradigm and the new paradigm.” The concept of a new paradigm is not mentioned in any interviews that do not demonstrate some Inter-individual structure. As he talks, he reflects on what he is saying and recognizes that he is switching back and forth between the old and new paradigms. To behold an entirely new paradigm in real-time is difficult for him yet intellectually, he can imagine it and recommends it. His focus is not so much on the interpersonal aspects of difference but on rethinking processes as mechanisms for accomplishing change. This carries through in conversation with others at MOP meetings. Change is the rule, not the exception, and unveils contradictions and paradoxes that one must either accept or work through (Laske, 2008).

This next excerpt is a quick exchange between the participant above who exhibits some Inter-individual mindset and another who is more Self-authoring. As mentioned earlier, those with some Inter-individual have the capacity to reflect in action and did quite often during meetings and interviews.

**Why do groups become paralyzed when the rubber meets the road? What does reality look like for us? These are noble goals but how will they work pragmatically? Consensus just does not work based on my experience.
Response by a fully Self-authoring participant:**

Sometimes you just **have unresolved problems** and we should just **make what those are clear** and educate public about **dichotomies of opinions**.

The participant exhibiting a bit of Inter-individual structure is, again, focused on critiquing the process by encouraging others to reflect on the substance of their discussion. The extent to which he can practice this himself is unclear. The other participant responds with a pragmatic approach but doesn't further engage in the previous speaker's reflection. Rather, he communicates that he is comfortable with the ambiguity of the process and differences of opinions and recommends this as a course forward. Thus, his is a more goal-oriented response to a reflective, more philosophical question.

Mindset	Responsibility and Change	Change in Decision-Making
Interpersonal	Taking responsibility because of authority / rules; responsibility to my interest	Need outside impetus/motivation to embrace difference on a sectoral scale
Interpersonal / Self-Authoring Balance		Individual differences important; not fully integrated; can be hindrance to change;
Self-Authoring	Collective responsibility; How change affects others; taking responsibility for oneself	Integration of difference necessary for change; collective community – shaped through dialogue
Self-Authoring with Inter-individual	How and why one takes responsibility is influenced by many things – primarily the immediate context	Reflection in action; new paradigm; process-oriented; adaptive

7. Analytic Summary 6 – Responsibility and Change, Change in Decision-making

Change in Decision-Making – Analytic Commentary

As someone's mindset evolves, there is an increasing capacity to integrate other worldviews. Pluralism is embraced as a means of self growth and reflection. A pluralistic society also means more opportunity for new ways of conceiving of old processes. Developing an integrated vision that benefits the "common good" is an achievable goal with both Interpersonal and Self-authoring mindsets. How a common good or commonality among participants is perceived varies among individuals exhibiting different mindsets. The strength of an Interpersonal mindset is its identification with others. Strength in numbers and finding commonality through collective thinking can be empowering. The limitation exists in understanding the common good only as a unified and uniform whole. As one's mindset becomes more complex, he/she begins to understand the common good as a web of dynamic relationships with an implicit hierarchy nested within them (Ruitenbeek et al., 2001). This web of dynamic relationships is what comprises the MOP table.

One of the last excerpts quotes a participant who demonstrates a little Inter-individual structure. He recommends narrowing individual involvement to facilitate change. Herein lies a limitation of a Self-authoring mindset – with too many individuals able to see multiple ways of looking at an issue, progress may be delayed because each is tied to their self-authored theory and finds it difficult to internally let go to make room for another self-authored theory (Commons, 2002). In addition, both Self-authoring and Inter-individual participants are not always aware that not everyone can see an issue at the level of complexity at which they can. Hence, they make move off a point too soon causing discussion at cross-purposes or lacking a shared understanding of context.

This chapter looked at two themes – responsibility and commonality – that inform how participants make sense of this change. Some participants were looking for a change when they signed onto the process while others wanted to create a change. Chapter 6 discusses the social implications of processes, like MOP, which embrace cooperation in the face of values pluralism and dissent (Daniels, 2007). Even though this chapter and this significant finding were about change, there is a basic human need for continuity in the face of change. Again, chapter 6 discusses how EBM stakeholder engagement processes can create an environment for developmental growth and change while providing comfort and safety. But most relevant to this research is that, in turn, these different types of processes can improve coastal ocean management.

CHAPTER 5

UNDERSTANDING THE PROCESS – MINDSETS IN ACTION AND INTERACTION

This research did not set out to investigate how individuals with different mindsets interact with one another during environmental decision-making. It did set out to understand how individuals are making sense of the process and themselves within it. Yet, one can not discuss how individuals are reasoning and making meaning without understanding the context within which that meaning is being shaped and framed. Every chapter mentions the implicit demands of EBM and how they call for something fundamentally different from decision-makers. The MOP process was created and has evolved to incorporate and nurture some of those implicit demands. The extent to which participants can describe and/or reflect upon that adaptive process is the focus of this chapter. This chapter also looks a bit more closely than any other chapter at the interactions of participants at meetings and assesses their exchange of personal theories, questions, clarifications, and emotions from a developmental perspective drawing from the last two analysis chapters.

Through the EBM interviews and meeting transcripts, participants' mental maps of EBM and the MOP process were uncovered. An understanding was built about their capacities for constructing a mental picture of the MOP process, the people within it, themselves and the overarching concept that was driving it, ecosystem-based management (Jordan, 2002). It was imperative, for this research, to not only understand

how people were thinking about all of this but how they were emotionally processing it and integrating it into what they already knew. As the analysis unfolded, differences arose in how various mindsets made sense of the underlying motivation for this particular type of stakeholder engagement process (described in detail in chapter 2). These differences ranged from understanding the process as a giant experiment in which it was natural to have hypothetical discussions about ocean policy and management to finding change threatening (Folke, 2005). The early phases of MOP did not get into the details of adaptive management. This is occurring now at the current phase within MOP with the passage of the Oceans Act, and is beyond the scope of this work. However, adapting to new knowledge and information was not always easy for all participants. The analysis in this chapter discusses how some participants are able to be flexible in their thinking and allow that deeper understanding to permeate their mental map and how some value consistency (Fazey, 2005).

The role of a leader and/or facilitator is critical to many MOP participants. How and why it is critical varies among mindsets. Some participants value leaders for their personality or style of interacting with others. Some value them for their intelligence and knowledge. And some value them for their perspective and values. Regardless, leaders, whether group or self appointed, named or implicitly influential, help shape meaning and transform participants' experiences of MOP.

The analytic distinction that makes up this chapter is:

- Theory Generation about MOP – during interviews and meetings

This distinction speaks to the following questions. How do participants come to their ideas, opinions, and emotions about the MOP process? And what role do these ideas, opinions, and emotions play in the MOP process during meetings?

Theory Generation about MOP

This research was conducted during the first phase (16 months) of MOP. During this phase, participants tried to make sense of what the pending integrated ocean management legislation meant across management sectors. The interviews and meeting transcripts are rich with participants' conceptions of the intent of the MOP initiative and to some extent, their opinions of what the initiative should do. This section discusses the personal theories underlying participants' opinions about the MOP process. Under each mindset heading, excerpts are used to get at participants' thoughts and feelings about the process. Several excerpts are threaded together to demonstrate themes that are common within each mindset. The summary chart of mindset characteristics is at the beginning of the analysis and the end, unlike other chapters. The chart represents the structure of the chapter to follow. The first part of the chapter gets into how individuals, exhibiting each mindset, make sense of the MOP process. The second part of the chapter, illustrates individuals of different mindsets in interaction during MOP meetings as they make meaning together.

Mindset	Understanding the Process	Individual Roles
Interpersonal	Literal; through eyes of others; MOP separate process from state; Little integration of MOP into other aspects of professional life; embodiment of a certain perspective	Offered supporting comments; factual / descriptive information; concern about impacts to own interest; clarifying questions; difficulty integrating MOP and state processes; trust / safety important; received knowing (Belensky)
Interpersonal / Self-Authoring	Balance of attending to self & others	Bridging role between Interpersonal and Self-authoring participants; questions posing and/or testing own theory; keeping the balance; strategy
Self Authoring	Perspective; reflection; outcome-oriented; contextually-driven; process judged by own standards	Judging by self standards; simultaneously inclusive and beyond status quo; offer new ideas
With Inter-Individual	Transforming process; new paradigm; reflection in action; process-oriented	Broaden context; philosophical; picking up on undercurrents of conversation; adaptive; reflective-in-action

8. Analytic Summary 7 – Understanding the Process & Individual Roles

Understanding the Process

Interpersonal Mindset. Participants exhibiting an Interpersonal mindset describe their perspective on the MOP process literally, thoroughly reciting the pieces that they believe are the intention of those they see as group leaders. Based on the complete picture

of data about this person in the next excerpt, he is forming his perspective through what he believes others believe the process to be. This is his understanding after being involved with the process for several months.

My understanding is that this is a partnership of a very strategically selected group of **different interests** - public, private NGOs with a strong interest in ocean resources, ocean uses etc. that **got together to really talk about and chart a course for coming up with a vision working in the context of moving legislation** and the potential for state enabled ocean management. You have **very important conversations where constituents are getting together and sharing their concerns in a more supportive or less spotlight or hostile environment** as you know a public hearing might be or a meeting up at the state agency building. You **are creating the atmosphere** to have and build sort of communications and through those communications, **building a partnership and trying to find out where the common vision and shared goal** is and providing the resources and things necessary to make that happen.

This conception of the process is interesting because it builds off of some of the themes that emerged in chapters 3 and 4. In keeping with the characteristics of an Interpersonal mindset, he believes this process is working within the overarching context of the legislation. He describes what he believes the process to be in literal terms and does not reflect on what the process may be or what it has been or what it may mean to him in relation to others. The process is one in which people come, have important conversations and build this “partnership” and then return to their different interest – MOP implicit demands are self-contained within these meetings and are not integrated into one’s way of knowing elsewhere.

The following are a thread of excerpts from participants exhibiting a dominant Interpersonal mindset. Each is discussing how they are making sense of the MOP process after being involved for a few months. The following are meant to demonstrate how the themes of previous chapters, such as affiliation and differentiating MOP’s role and the

role of the state, are carried through in these excerpts. They are threaded to illustrate consistency of these themes among mindsets.

Participant A. I am excited because I think it is good to have these people together calling for this but on the other hand and **this is what was made clear again at the second meeting, we are just a partnership fund and we are not actually going to be doing it** and I knew that from the beginning but I thought it would be really good and I guess the reality is that **the legislation will supersede what this fund can do** and that is the negative thinking and the reality of the legislation. **The Partnership is not going to be the ones who actually are doing the work.**

Participant B. As for the process, I found the meetings to be physically very comfortable and accessible. I think I thought at the first couple of meetings, it was very long on process. It was hard right up until the last couple of meetings to figure out what the hell we were doing there. It seemed we were having meetings about having more meetings. We were talking about ocean management and yet we weren't going to write the plan. And sometimes we talk about well, let's try to perceive writing the plan.

These excerpts reveal the limitations those with Interpersonal mindsets face in understanding the process. They are concerned with getting something concrete for their time and commitment and do not necessarily see value in having lots of discussions about the MOP process. They are looking for more immediate gratification and/or reassurance about what it is MOP is doing, why, and what comes out of it. They are product-oriented rather than goal or process oriented. This is reflected in their consistent concern with how the MOP process and plan will look to others outside of the process. There is more about being goal-oriented later in this chapter.

Interpersonal / Self-Authoring Transition. The next excerpt is from a participant exhibiting a transitional Interpersonal / Self-authoring mindset. A personal theory on MOP is brewing but gets a bit short-changed by her concern about whose needs to attend to.

Um, un-comfort with the process. There were times when there **was tension decision points – decision junctures** that came up where we had to **either figure out to go the process high road and be more inclusive and try to take into account the full opinions of all versus the pressure to take the process short-cut per se and get to a decision more quickly by basically just making a decision in advance and then making the process around it look okay.** **Years ago** if you would've asked me **I would've said, the only right answer is to do the process high road.** **Now-a-days** I think it's a case by case situation. **You have to have your principles in terms of process otherwise you lose credibility with people.**

“Years ago” and “Now-a-days” are in bold in the excerpt above because these are what may flag an interviewer to developmental change. Her thinking transitions from a more concrete, black and white stance to something more contextual. Her last sentence reflects the frame of reference for an individual exhibiting this transitional structure – she discusses her own principles in the context of how they hold up for others.

Self-Authoring Mindset. This next excerpt is from a participant exhibiting a Self-authoring mindset. Reflection on what is happening with the MOP initiative thus far and a personal theory on what should happen make up the bulk of this person's excerpt.

It seems it hasn't been thought out yet what exactly is going on. **At least as far as I can tell,** the discussions of course have been much more general than that. **I have this way of thinking** about how you need to think hierarchically. **What's the goal?** In order to reach the goal, what do you need to do? How do you get that accomplished? **The thing that has been missing for me is some kind of context. That is important because if you don't have that context then it is hard to know if the things that you say you are going to do make sense, so I have been trying to push for that context and for me once I understand that it is much easier to say ok so what should we do in order to support that.**

He is critiquing the process and at times, throughout meeting transcripts, one may say even strongly criticizing it. His words reflect a personal theory on how things should be. Also unique to those exhibiting Self-authoring mindsets is identifying the “substance” and the particulars of the substance that make up the steps to achieve that outcome. He is

concerned with the substantive aspects of the process – the context, the whole of it, the inputs and the outputs, the complexity of variables that one needs to contemplate. He will buy into the process if he can find a way to make it understandable to himself and if it meets his self-created standards and values of what a good process and outcome should be.

The following is a thread of excerpts from participants exhibiting a Self-authoring mindset. Each is discussing how they are making sense of the MOP process.

Participant A. We sort of knew what the charge was but exactly how this was all going to unfold was news to us and we all worked toward where we are now and what it is we hope to achieve as a group.

Participant B. Is the process fair and do I feel comfortable? Yes, no one has put me on the spot about anything and I wouldn't mind if they did unless someone were attacking me. Sometimes you get up and you get put on the spot a little bit, possibly because you backed yourself into a corner or you are not making yourself clear or there is a room full of people who don't agree with you. You know, we all like to have a room full of people that agree with us but it doesn't make me too uncomfortable when they don't because I figure my job is to say what I think.

The excerpts above reflect consistent Self-authoring themes from previous chapters. The first addresses the theme of creating an affiliation that is MOP. It is a given that uncertainty is inherent in the MOP process and the community of participants determine the outcomes together. The second demonstrates a move away from the Interpersonal at the forefront of one's thinking. Unlike some of the participants with Interpersonal mindsets, he is at the MOP meetings to contribute his personal theory regardless whether others have made him feel comfortable. "It's his job" to create his own comfort and speak up if he has something to say.

Self-Authoring with some Inter-Individual Mindset. The next excerpt is from a participant exhibiting some Inter-individual structure. Note that this excerpt is used in a previous chapter but is pertinent here as well. He moves a step beyond working within or re-working the current process to achieve an outcome. He is concerned with transforming the current process, the current mental conceptions of ocean management decision-making.

Well, it isn't quite clear as you could tell at the last meeting and I think this might be one of the **weaknesses of some people having a preformed concept. Because I think that an effort that starts with those concepts, doesn't test any new directions** or doesn't test them as well. It has struck me that to really **do the job that's necessary**, maybe it's completely impractical until you are terrified, but to do **the proper job, we need a new paradigm and we don't get a new paradigm if we work within the system, on the other hand if we work outside the system, outside the funding system, the preconceived conceptual structures, maybe we get nowhere and so I continue to be yin-yang on the subject.**

He discusses his struggle with the new paradigm / old paradigm and how he is not capable of integrating the new paradigm completely into his consciousness. He only has glimpses of this and can recommend that it be done. His Self-authoring, personal theory still has a preconceived notion of "the proper job." He struggles with how to fit two systems of ocean management together into a meta-system (Commons, 2002). Here are some additional excerpts from participants exhibiting some Inter-individual structure.

They are all discussing what they believe to be happening in the MOP process.

Participant A: It's been difficult to convey to them or have them share in an atmosphere of institutional memory, where we don't need to go through the same arguments we have in other meetings. They seem to like to go back to the beginning all the time. The crazy thing is these are people, like we're sitting in other meetings, during the same period of time, having exactly the same discussions and I would have hoped to take a little thumb drive out of one and stick it in the other. I think we're learning something about people that I didn't know. And I don't think it's anything you can change. I think what we've done is give into it. XXX has tried to move things along. Some of it is

individuals not wanting to give up any opportunity to benefit from this down the road. **So there is posturing and power stuff and turf.** People are being very gentle about it but **I think that's part of what obliges/makes them feel obliged to repeat obvious things.**

Participant B: I guess I repeatedly had this sort of feeling that **I wished somebody would just come out and say, in plain English, what it is we're doing.** I guess I got the impression from the people who organized that even they were a little unclear about what it was were doing so maybe this is partly a reflection on my personality. I mean maybe it was okay that we didn't know what we were doing. **Maybe part of the purpose was to figure out what we were doing and maybe if that was said explicitly that would've made it easier for somebody like me who's always trying to make sure we know exactly what we're doing.** (Laughter)

These excerpts reflect threads of earlier themes of individuals with some Inter-individual structure. The first has that philosophical stance – looking holistically at the process and its many variables. The second demonstrates reflection in action – taking responsibility for what is his own confusion.

Mindsets in Action – Individual Roles

Thus far, primary focus has been on the different mindsets and how the individuals exhibiting them make sense of the MOP process. The next part of this chapter examines some of these same individuals during MOP meetings – in action and in conversation with one another. The concerns, fears, hopes, and ideas that participants divulge during their individual interviews are frequently voiced during meetings as well.

Strategic Plan Discussion. Many MOP agendas are devoted to decision-making about the MOP strategic plan and science plan. The next series of excerpts and observations highlights one particular meeting about the content of the strategic plan after a draft plan had been circulated approximately six months after MOP began. A thread of

excerpts is used for illustration and then the discussion is broken down with an analysis. Note that there are other MOP participants, not involved in the research, who fill out this conversation. This research did not set out to understand mindsets in interaction in particular, though the thread of excerpts below and others throughout this chapter illustrate how a conversation among individuals of different mindsets may play out.

Participant A: I agree climate change should be addressed somewhere. How we do that requires some discussion. **I'd caution that this becomes a central issue of the Partnership** but rather, a paragraph or two. **I'm concerned about it becoming a central focus – we (my sector) are not immune (to its impacts).**

Participant B: I don't think we've captured the problem **correctly**. It seems the text is bureaucratic. If we want the document to be taken seriously by a broad range of people, we need to define the problems. We have not done that but have a lot of structure and **BS**.

Participant C: The document will be read by **different organizations. Having different versions (is important). We are really experimenting. There is a huge issue out there on a global scale. We're taking a manageable chunk and trying it here given these parameters.**

Participant D: It may be helpful to **articulate issues that are beyond our ability** but should be kept in the plan such as climate change.

Analytic Commentary

The participant with an Interpersonal mindset (Participant A) has particular concerns about how one piece of the plan overrides the interests of his sector. From a developmental perspective, his view of the discussion is seen through the lens of his affiliation's interests.

I agree climate change should be addressed somewhere. How we do that requires some discussion. **I'd caution that this becomes a central issue of the Partnership** but rather, a paragraph or two. **I'm concerned about it becoming a central focus – we (my sector) are not immune (to its impacts).**

During this discussion, other individuals with Interpersonal mindsets participate in the following ways. One person reiterates what the meeting facilitator suggests as a way to address climate change. Others offer facts about the various themes related to the plan such as how many anglers are in the state of Massachusetts and what they bring to the state economy. The contribution of these individuals is quite different than those with Self-authoring mindsets; they do not offer their own theory in response to another's. They find ways, through questions, clarifications, and descriptions, to communicate their concerns and the needs of their affiliation. In addition, their comments reflect a viewpoint similar to that of their affiliation's.

Participants exhibiting Self-authoring mindsets offer stronger criticisms of the document not living up to their standards of what they thought it should be. These participants look at the Plan as an independent document – separate from their own needs and interests. They offer criticism and praise based on the merits of the document separate from their affiliation's stance.

I don't think we've captured the problem **correctly**. It seems the text is bureaucratic. If we want the document to be taken seriously by a broad range of people, we need to define the problems. We have not done that but have a lot of structure and **BS**.

Two participants with some Inter-individual structure respond by putting the conversation into a broader context.

Participant A: The document will be read by **different organizations. Having different versions (is important). We are really experimenting. There is a huge issue out there on a global scale. We're taking a manageable chunk and trying it here given these parameters.**

Participant B: It may be helpful to **articulate issues that are beyond our ability** but should be kept in the plan such as climate change.

Again, with Inter-individual participants, the Plan is seen as a document that should be reviewed with a number of variables in mind, some of which are important to them and their affiliation, some of which are important to others', and some of which are important for the long-term.

The conversation at this same meeting shifts to an endorsement of the plan.

Again, a series of excerpts is threaded to illustrate individuals of different mindsets interacting during a discussion about Plan endorsement. An analytic commentary on their exchanges follows.

Participant A: I'm representing XXX given that ocean use decision planning is important and we've been doing it for a long time. There are competing uses that are causing the trouble we're dealing with. I'm confident with comprehensive planning, we may solve some of (my sector's) problems. I'm comfortable with endorsing it.

Participant B: It's been an exercise in discipline to remember that we are endorsing the constituency aspects and the process and not an ocean plan. It's been an important intellectual experience and the trust-building has been crucial.

Participant C: Easy endorsement from XXX. It's key that the users of the coastal resources become part of this partnership

Analytic Commentary

Similarly to excerpts within the last two chapters, individuals exhibiting an Interpersonal mindset are concerned about the endorsement's impact on their own particular affiliation's interests. They struggle with separating the MOP process from the legislation and pending state process. They are more willing to endorse the plan if they feel they are among friends or at least trustworthy individuals who have created a safe meeting place for them to state their concerns and react to the plan. Their willingness in

this context signifies a need to be made to feel comfortable with expressing themselves and their needs. A participant exhibiting an Interpersonal mindset offers the following:

I'm representing XXX given that ocean use decision planning is important and we've been doing it for a long time. There are competing uses that are causing the trouble we're dealing with. I'm confident with comprehensive planning, we may solve some of (my sector's) problems. I'm comfortable with endorsing it.

His comfort is not with working through the competing uses but with using comprehensive planning to work through the challenges of his own sector. His comfort with the process is based on what his sector gains. Another participant exhibiting an Interpersonal mindset responds to the endorsement by stating the difficulty she's having with differentiating MOP from the state process and the many process variables. She also mentions the issue of trust

It's been an exercise in discipline to remember that we are endorsing the constituency aspects and the process and not an ocean plan. It's been an important intellectual experience and the trust-building has been crucial.

Similarly, to the last two excerpts, this participant relies on the trust she's built with others to feel comfortable with endorsing the process. She still struggles with differentiating the process from a product but having those whom she trusts involved as well helps this discomfort. A participant exhibiting a transitional Interpersonal / Self-authoring mindset reminds everyone that they don't need to see MOP and the legislation/state process as an either/or. Her capacity to hold multiple variables that influence the MOP process in her mental map is there and at the forefront of what she contributes to the conversation. Another individual at this transitional capacity, asks whether XX is the goal. This is a theme for other participants at this juncture too. They pose questions that indirectly state a personal theory on the content of the dialogue. From

a researcher's perspective, it seems as though they have an emerging theory but feel they need others to approve of it. They are testing it, in a sense. Their Interpersonal self still needs to be made comfortable by others in order to offer a personal idea. Their Self-authoring self wants to contribute to the conversation in a new way, a more personal way, with a self-generated theory. But to do this, they take it slow and gauge others' responses before offering more.

A Self-authoring participant offers endorsement. "Easy endorsement from XXX. It's key that the users of the coastal resources become part of this partnership." Throughout meetings and interviews, this individual, in particular, is very concerned with the idea of community and collective responsibility. Other Self-authoring participants see the MOP plan and process as refreshing because it is "beyond the arenas of legislative processes." Some endorse the plan both personally and also on behalf of their institution. Others feel that they could not endorse it until they have their own theory (or story as one participant says) about the intent of MOP so that they feel comfortable carrying a message that resonates with them and is palatable to others. Self-authoring participants, with the capacity to hold another's competing perspective, are concerned that the MOP process is fair, not just for them, but for all involved.

The Role of Science Discussion. One final example of researcher observation is a discussion on the role of science in the MOP process and in comprehensive ocean management. The discussion includes participants exhibiting all mindsets referred to in this dissertation. There are threads of process characteristics that are specific to a particular mindset. The examples to follow are used to demonstrate these threads but the

point of this chapter is to discuss the ways in which participants of different mindsets contribute to conversations about new ideas and theories. Researcher observation notes are used to capture the broad, interpersonal dynamics of this meeting rather than illustrate particular interactions.

Individuals exhibiting Interpersonal mindsets are concerned about the role of science affecting their interest. One participant discusses this concern indirectly, i.e. he does not attribute the concern as one that will affect him personally though it is implied. "The fundamental problem is that a lot of regulators don't believe trade-offs exist." He is a regulator. But most pertinent to this conversation is that those with predominantly Interpersonal complexities speak up only four times within the afternoon session. Each time personal concerns are named, a clarification question is asked, or an example of something their organization/agency did is shared.

A participant with an Interpersonal / Self-authoring mindset focuses his comments on the balance between management driving science and science driving management. The theme of balance comes up regularly for the participants in the transitional phase. In other chapters, it is a balance between responsibility to the self and to others, a balance between MOP's purpose and that of the state's, and here - a balance between the competing interests that should drive the MOP process.

A participant with a predominant Self-authoring mindset with some Interpersonal is quite vocal throughout this discussion. His contribution to the conversation can be summarized in three ways: summarizing, judging, and offering new ideas. At certain junctures he offers a summary of the discussion, similarly to the role a facilitator plays. His summaries are quite articulate and helpful to the discussion, according to other

participants. They are different however than the summarizations of the participants with some Inter-individual structure in that they do not get at underlying, unspoken themes and dynamics but rather speak directly to the theme / dynamic at hand. Similarly, his judgments are about the content being discussed; though articulate, they do not explicate the underlying themes inherent in the dialogue. He offers new and creative ideas about what MOP can do and starts to indulge a personal theory about the science / management interface as it relates to comprehensive ocean management. What starts as a pure description of how MOP should proceed sounds more like him sharing his own perspective. He supports his theory with assurances that worked elsewhere. Another aspect of his contributions, that should be noted, is that they are very strategic in nature. That is, they set out to comment on the conversation at hand and offer something that will better enable the group to move forward. Yet the focus is still on the Interpersonal – strategizing to fulfill one's own needs and appease others. This is a common characteristic for participants who have a mix of Interpersonal and Self-authoring mindsets.

Lastly, several participants exhibiting some Inter-individual structure keep the conversation flowing with their own personal theory on the role of science. Their ideas often include a broad vision with an adaptive nature and some details about implementation. Similarly to other Inter-individual examples, they often reflect in action. However, they are not always adept at noticing when others are not following their reasoning. One participant reflects on this during an interview commenting that the group seems to lack institutional memory for what he, in particular, has proposed several times before. To keep others abreast of their ideas, Self-authoring participants will state their

opinions and theories at each meeting and stress the importance of them. Even if others don't seem particularly intrigued, they often keep at it as they firmly believe in what they're saying.

Generally, in the MOP meeting discussions described above, participants exhibiting a predominant Interpersonal mindset offer information related to their affiliation's interest. This information is sometimes quite useful to the conversation at hand. They ask questions to clarify how something may affect their interest. They often state these questions in the form of a "concern." These questions are also often useful to the current conversation. They bring the personal aspects of the conversation to light. They are also very aware of the role of the facilitator and often reiterate what she says or have her best interest in mind (e.g. "If we make too many changes to the written plan, XX will have her hands full"). Participants exhibiting both Self-authoring and Interpersonal structures play a bridging role between other individuals fully at one of those mindsets. This role is particularly important to MOP meetings. They reassure and comfort others which help Interpersonal participants feel safe and heard. Simultaneously, they engage those with Self-authoring mindsets without feeling a threat to their sense of self. Participants exhibiting a Self-authoring mindset generally offer new ideas in either a question or statement format and kept the conversation moving – sometimes in a general direction and sometimes taken a bit off course. Participants exhibiting some Inter-individual structure often announce what is happening to the conversation process at any given moment and then ask a question or make a statement to bring the conversation to another point beyond what has been discussed previously. These comments are often statements about underlying dynamics of the conversation, either interpersonal or

process-related. They are also comments meant to get at the substantive nature of the discussion at hand –the deeper meanings behind participants’ ideas.

Mindset	Understanding the Process	Individual Roles
Interpersonal	Literal; through eyes of others; MOP separate process from state; Little integration of MOP into other aspects of professional life; embodiment of a certain perspective	Offered supporting comments; factual / descriptive information; concern about impacts to own interest; clarifying questions; difficulty integrating MOP and state processes; trust / safety important; received knowing (Belensky)
Interpersonal / Self-Authoring	Balance of attending to self & others	Bridging role between interpersonal and Self-authoring participants; questions posing and/or testing own theory; keeping the balance; strategy
Self Authoring	Perspective; reflection; outcome-oriented; contextually-driven; process judged by own standards	Judging by self standards; simultaneously inclusive and beyond status quo; offer new ideas
With Inter-Individual	Transforming process; new paradigm; reflection in action; process-oriented	Broaden context; philosophical; picking up on undercurrents of conversation; adaptive; reflective-in-action

9. Analytic Summary 8 – Understanding the Process & Individual Roles

Theory Generation about MOP (during interviews and in action) – Analytic

Commentary

As someone transitions from the Interpersonal to the Self-authoring they do not suddenly have a theory on MOP and EBM. Generating a theory is about creating one's own perspective, i.e. being one's own internal authority on one's feelings and convictions. This is different from embodying or taking on a certain perspective.

Consider an excerpt from a developmental interview of a participant exhibiting the Interpersonal mindset. He is asked about lifestyle changes he makes because they are "good for the environment". What's subtle is that he answers by discussing what he does but doesn't tell explain his reasoning. He seems to be describing his perspective from the inside rather than critiquing it from the outside.

It goes to eating sustainably. Yes I still drive a car and it's not a hybrid. If I could afford one I'd buy one. We try to live as much as we can in an ecologically sustainable manner because the natural maintenance and preservation is extremely important. I try to do my part not to be negative to decrease my footprint and actually buy products and live in a way that my actions are actually helping. How did I come to this? I guess it's just an affinity for the natural world that I've had since I was a little kid.

This makes sense when looking at the process characteristics of the Interpersonal mindset. Being embedded in one's own beliefs makes it difficult to weigh those beliefs in relation to others, thus, a focus on one's own interest and an inability to integrate the implicit demands of the MOP process into other aspects of their professional lives. It also makes it difficult to judge whether those beliefs are helpful or hindrances to the task at hand. In conversation, however, having participants that remind others of their needs and that ask clarifying questions is quite useful toward stimulating further discussion and new ideas.

When one begins to be capable of reflecting on one's perspective, one starts to reflect on oneself. Here is another excerpt from a developmental interview of a Self-authoring participant explaining a tension he recently felt related to his work.

So we've recently launched this new model. I sat down and I said, I've got to get something done and I am just really having trouble getting traction. **I can't get people to contribute in any substantial way. You know and part of it was myself. I sort of felt that maybe where I'm failing, in loose quotes, the process is that just sitting down and writing a couple of papers myself about how this would work. Maybe that is what I ought to be doing. It's not where I thought I ever should be. I thought I should be leading a commanding effort to write these things down.**

Internally reflecting on one's and others' perspectives rather than describing a perspective (from the outside) is a form of mental complexity. In returning to Kegan's theory of subject/object, one can start to manipulate and manage what is object to them. However, meaning that is deeply embedded within their reasoning isn't yet accessible. Having a capacity to have a perspective on one's theory is integral to Self-authoring participants' need to understand the context of the MOP process for themselves and in ways that make sense and live up to their own self-authored standards. This capacity is useful in conversation to reflect on how one is contributing to the process at hand and whether that contribution is helpful or harmful.

While participants exhibiting some Inter-individual mindset do not always stand out, excerpts are pulled out that do when they add depth to the developmental understanding of the research. This participant has a perspective on his own theory but he goes a bit beyond this to see glimpses beyond his current mindset. Similarly to other Self-authoring participants, he perceives what his theory and others' are about. What's different is that he is starting to perceive the limitations of his own way of thinking.

I think it's probably something that I've learned over time but I think it's one of the hardest things – I think it's the thing that enables some people to be really good in science and not others because you can't discover anything new if you're too constrained by what you already know because it's what you don't know that you're interested in. What you need to find out is what you don't know – to see new ways of looking at things that the rest of us can't see.

Deliberation in the MOP process is not about aggregating interests of participants but rather using open communication to illuminate the motivations behind participants' involvement. The way in which participants make sense of their interests is tied to their meaning making capacities. These capacities influence how people interact during MOP processes – how they adapt to new information and values – how they see authority and power – how they are motivated and how they understand the motivation of others. All of these are aspects of process and affect process interpersonal dynamics. Each person brings a different mental map to the process and reconfigures the map based on new information and understandings (Hajer, 1995). What's critical about MOP is that it provides a venue to have a continuous cycle of discussion, disagreement and consensus which, from a developmental perspective, is also important for self growth (more in next chapter) (Palmer, 1980). The extent to which participants integrate MOP process characteristics into other aspects of their lives seems to be linked to their mindsets. As one's mindset becomes more complex, he/she can make greater and greater distinctions between what is superfluous to other aspects of one's life and what is integral to it (Phillips et al., 1998).

Generally, there is a strong commitment to personal change and growth among participants. Reasoning behind that commitment varies by mindset, e.g. I endorse this unique process because it is a positive change for my interest; I endorse this unique process because I find my own voice within it; I endorse this unique process because of

the goals it achieves in creating a community of disparate interests (Weathersby, 1996). Chapter 6 looks more in depth at the excerpts and process exchanges commented on in the three analysis chapters. The focus is on the implications of this research for better environmental policymaking through more inclusive and developmentally appropriate, stakeholder engagement processes.

CHAPTER 6

RESEARCH CONSIDERATIONS AND IMPLICATIONS

The final analysis looks at the implicit cognitive, interpersonal and intra-personal demands of EBM in relation to the research results. The research, in this last chapter, is synthesized into considerations and implications for improved environmental decision-making and policy formation. To review, chapter 1 provided a theoretical foundation for the two central components of the research: marine ecosystem-based management (EBM) and constructive developmentalism. The underlying principles of EBM were unpacked by fleshing out their implicit cognitive, interpersonal and intra-personal demands. The concept of “mindset” was introduced to show the different levels of complexity with which an individual makes meaning of her experiences. The implicit demands of EBM were systematically reviewed and briefly assessed by how each mindset may interpret them. Chapter 2 introduced case study research and the specific case, the Massachusetts Ocean Partnership, more in-depth and gave further justification for choosing this case to gain insight into how decision-makers make sense of EBM processes. The next three chapters were devoted to analysis of the data. Their purpose was to explain the data and to outline the developmental strengths and limitations of each mindset in relation to the analytic distinctions. This last chapter lays out the following considerations based on the research:

1. An examination of how both case study research and constructive developmental theory add value to the literature on marine ecosystem-based management specifically by offering a new lens from which to examine stakeholder engagement processes.
2. A review of the implicit cognitive, interpersonal and intra-personal demands for EBM described in Chapter 1 and the underlying principles of EBM suggested in the current literature.
3. A review of current EBM stakeholder engagement processes.

From these considerations, research implications are offered including an overarching analysis of how the strengths and limitations of different mindsets contribute to or detract from a decision-making process. Recommendations are given for improving environmental decision-making given a range of meaning making complexities.

Considerations

As mentioned in the early chapters of the dissertation, marine EBM has been slow to gain traction throughout the world. There are many examples of decision-making processes using ecosystem approaches, though very few, if any, are comprehensively implementing the approach by deliberately following EBM principles (Murawski, 2007). In other words, ecosystem-based management is in its early stages in marine systems. Many are asking how the management capacity can be built to get beyond single-sector approaches and embrace institutional and administrative change (MEAM, 2008). For example, what types of leadership are needed to guide decision-making to meet ecosystem objectives? In the Massachusetts case, a mandate has recently been enacted to

provide some guidance for implementation. However, there is more to decision-making than having a particular legislative directive. The Massachusetts case still struggles to make the language of the legislative mandate operational. Although the mandate does not explicitly call for EBM, many of the underlying principles are there. Similarly to the struggle others face in implementing those principles, the decision-makers in Massachusetts are learning how to turn theory into practice with an implicit assumption that those carrying out the directive all have the same capacity to understand the complexity and the mental demands of the process.

This research points to the areas that must be paid particular attention in stakeholder engagement: the capacities of decision-makers to take on different and/or multiple perspectives, the capacities of decision-makers to make sense of institutional and administrative change, and the extent to which decision-makers understand the processes of policy formation in addition to the end goals or products. Decision-making is necessarily goal-directed. However, EBM implicitly demands intentionality about the engagement process as a necessary condition for achieving a goal. This chapter stresses the importance of being intentional about both stakeholder engagement processes and decision-makers' mindsets. MOP, as a public/private partnership, is intentionally attempting a different kind of stakeholder engagement, one outside of government, as outlined in Chapter 2. MOP facilitators strive to create an engagement process that attends to both the initiation process (getting stakeholders to the table) and creating the context to keep them interested in the process. This chapter offers recommendations for strengthening and supporting that kind of engagement process.

As a review, the implicit cognitive, interpersonal and intra-personal demands of EBM include:

- *Capacity to Conceptually Understand Complex, Multiple Variables*
- *Capacity to Acknowledge Personal Responsibility & Ownership*
- *Capacity for Empathy for Competing Sectors and the Individuals that Comprise Them*
- *Capacity to Attend to Multiple Perspectives at Once*
- *Comfort with Ambiguity*
- *Capacity to Reflect on and Differentiate Among Management Implications*

What's unique about these implicit demands is that they are not the kind that can be exercised merely by having more information. They are not about intellectually understanding more about the definition of EBM. Rather, they suggest a complexity of knowing and making sense of the management system and its complexity (Heifetz, 1995). For example, several of the MOP research participants mention that EBM is a "frame of mind." However, the way in which they understand this idea differs among mindsets. For some, getting one's head around EBM is about understanding the EBM definition and applying existing methods and tools for its implementation (McAuliffe, 1994). In other words, this is interpreted as applying the same old processes to solve new and different challenges. For others, EBM as a frame of mind means a reflective capacity; that one makes sense of it by considering new and multiple perspectives and weighing them against one another to create new understandings.

Current natural resource management stakeholder engagement processes vary. As policymakers try to conceptualize an administrative structure for EBM, stakeholder participation is a key consideration (Parenteau et al., 2008). As recommended by the U.S. Commission on Ocean Policy, regional ocean councils are taking shape. Essentially, these Councils would be used as mechanisms for stakeholder coordination, collaboration, and input. The practical application of these Councils is still evolving in New England.

Public input is usually solicited through scheduled meetings at both state and federal government levels as mandated by the Administrative Procedures Act. This input is usually one-way and is not always intentionally meant to nurture relationships or foster meaningful dialogue. In some cases, such as under the Magnuson-Stevens Fishery Conservation and Management Act or the Marine Mammal Protection Act, stakeholders are an official part of the process of decision-making and are directly engaged in the process of developing management approaches and regulations (Parenteau et al., 2008). While these processes have achieved a degree of success, they are single-sector, interest-based stakeholder engagement processes. EBM stakeholder engagement requires something else. There is a greater range of interests to consider under an ecosystem approach to management and these must be considered in coordination with one another. In other words, stakeholder engagement processes must transcend management sectors.

MOP is set up as a public/private partnership to bring diverse stakeholders with competing needs together to advance comprehensive coastal ocean management. It is a partnership of a wide range of ocean interests. Stakeholders are not simply invited to meetings to give input related to their affiliation's interest. Rather they are invited to become MOP members to become invested in and responsible for the process and

outcomes. They can take the opportunity to give input through collaborative problem-solving and developing common sense ocean-management planning solutions (MOP, 2008).

In essence, MOP is trying to provide the ideal mechanism for stakeholder engagement to achieve EBM objectives. As commendable as this is, there is an implicit assumption that all stakeholders can do all of the mental tasks required by the process. This research shows that the MOP process can be enhanced if attention is paid to the individuals asked to implement and partake of the process. If the implicit demands of EBM are reflected upon from a developmental perspective, it is critical that process facilitators are aware of the capacities of the mindsets in the room. A facilitator should not act as an authority figure to dictate or prescribe a process. Rather, a facilitator should facilitate discussion and learning by responding appropriately to different mindsets and their developmental strengths and limitations. Inherent in EBM is the need to work across and with differences, so the ideal EBM decision-making process, one in which all participants have the capacity to meet EBM's implicit demands, will likely never exist. Because of the highly dynamic nature of cross-sectoral dialogue, EBM stakeholder engagement processes need to be created deliberately and with the developmental capacities of the decision-makers in mind. If the mental capacities of the people overseeing our natural resources are ignored, the road to EBM will be bumpier. As highlighted throughout this dissertation, the complexity of the EBM concept makes stakeholder engagement more complex. Therefore, the process of engagement must be attended to in new ways. How does the added complexity make stakeholder engagement

more complex? The following pages include the implications of the research by significant finding.

Perspective-taking on Self and Others

Interpersonal Mindset. Throughout the analysis chapters, excerpts are used to illustrate the psychological world of the research participants. The two EBM implicit demands that pertain to this research finding are the *Capacity for Empathy for Competing Sectors and the Individuals that Comprise them* and the *Capacity to Attend to Multiple Perspectives at Once*. Individuals exhibiting an Interpersonal mindset are particularly in tune to their own affiliation's needs and interests. They want to belong and be accepted by MOP and its members. They want an equal place at the table and want to be able to trust that the other members and the process will uphold, or at least attend to, their affiliation's interest. They find it challenging to take off the hat of their affiliation for fear of being disloyal to their affiliates and having their affiliation be subsumed by something greater; something that they are not able to control. Part of this fear stems from listening to and taking in others' (different) perspectives. These differences feel threatening to their very sense of self in that to accept another's point of view as valid, especially if it contradicts one's own, is experienced as a breach of their loyalty to and identification with their own affiliation; in a sense, it feels like a loss of identity. They find it difficult to internally hold these differences – it tends to become conflict they have with the person who represents the competing perspective rather than an ideological disagreement. Rejecting someone else's perspective because it competes with one's own is not a simple disagreement. The disagreement can become the defining factor of the relationship, at

least from their perspective. In other words, someone with an Interpersonal mindset may have a change of heart when they are given permission, by a trusted authority, to accept as valid competing perspectives or interests.

It is not difficult for these participants to fulfill the implicit EBM demand of having empathy. However, empathy, for them, means identifying with another. Because their limitation lies in being unable to hold another's differing perspective along with their own, they are unable to understand the other's through their lens. They seek something they can identify with.

Interpersonal / Self-Authoring Transition. Those participants exhibiting the Interpersonal / Self-authoring transition are starting to have a perspective of their own in addition to the affiliation that they identify with and are loyal to. They still struggle with balancing another's perspective with their own. They still feel a sense of loyalty and responsibility to the perspective they represent – usually that of their affiliation. Yet, they also feel a growing sense of ownership to any self-authored ideas they have and sometimes struggle to integrate the two. They feel a continuing vulnerability to the demands and expectations of others and often feel at the mercy of others' control. And they struggle with finding the balance between attending to their own needs and attending to or pleasing others'. Their capacity to take on other perspectives and to feel empathy that need not mean identification, is growing.

Self-Authoring Mindset. Those exhibiting Self-authoring mindsets come to the process with a whole host of their own perspectives. They look at MOP as an opportunity

to strengthen, reflect, and/or change their perspectives as a result of cross-sectoral dialogue. This opportunity is something else for them. It is not simply a public/private partnership to engage different stakeholders separate from their affiliation. It is another one of their many affiliations and has its own right and purpose. Within this affiliation, they feel completely responsible for their own level of participation and engagement and do not look to any of the other participants for acceptance. Rather they tend to relate to the other members as independent thinkers with a variety of ideas and concerns to be considered.

Self-Authoring with Inter-Individual Mindset. Those beyond the Self-authoring stage are starting to understand and weigh the multiple perspectives within themselves in addition to doing this with others' perspectives. They are comfortable sitting with the ambiguity of the process and, in fact, tend to see the process as creating itself. They let this happen naturally through dialogue with others.

For both Self-authoring participants and those with some Inter-individual mindset, empathy comes from seeing the whole of someone else, as separate from oneself. One does not need to identify with another to feel empathy with a Self-authoring mindset.

To be able to take on multiple and/or competing perspectives during an EBM decision-making process, one must have the capacity to set aside one's own perspective for the moment to make mental room for another. One must have the capacity to weigh the strengths and limitations of each perspective and not see the other person solely as the representative of perspectives. One must have the capacity to decide for herself what parts, if any, of the perspective she will integrate into her own. Similar to other conflict

resolution processes, coastal ocean decision-makers often wrongly and implicitly assume that each person at the table has the capacity to do these things and, in fact, implicitly and unquestioningly carry these assumptions with them from the onset of the stakeholder engagement process (McGuigan & Popp, 2007). How can the true nature of EBM's underlying principles be realized if a basic fact about decision-makers is ignored – that not all and in fact, most do not have the capacity to truly weigh multiple perspectives against one's own (Kegan, 1994).

Cross-sectoral decision-making is one of the key elements of EBM. If, as described and illustrated earlier, a decision-maker with an Interpersonal mindset equates the person with the idea (can not separate the person from their affiliation / perspective), it makes the process of discussion and deliberation more difficult for them (McGuigan & Popp, 2007). If there can be an element built into the process of engagement to facilitate an explicit environment of trust and respect for differences and in fact, a spirit of learning from each other, those with an Interpersonal mindset may feel they are given permission to consider other perspectives very different from their own. This is especially clear through the ways they talk about the interests of their affiliation and its members. This connection to other partly defines who they are. Putting that aside to really hear and reflect on another's conflicting perspective threatens their sense of loyalty to their affiliation and in turn, their sense of self and place. If they turn away from or dilute that which gives them a sense of self and belonging (by allowing in a competing perspective) then who are they. One of the repercussions of this, or on the flipside, opportunities, is that in order for them to be engaged in the process, they must feel that their affiliation's interests are important and being considered. And at the same time, being given

permission to try on differing perspectives further engages them in the process. On the other hand, this kind of dynamic has the potential to stifle meaningful dialogue where differences in perspective have to be articulated and worked through in order for new shared understandings and perspectives to emerge. It is helpful that those exhibiting a Self-authoring mindset can take on many perspectives, weigh those against their own and integrate what resonates with them without losing a sense of who they are. However, realizing that not everyone can do this is often a limitation of a Self-authoring mindset. Frustration with others who may seem unnecessarily defensive often sets the stage for resentment, impatience, and potentially lost interest in the process. In addition, those with a Self-authoring mindset and beyond sometimes forget that the ideas and decisions they are discussing have a personal element. For Interpersonal participants, the discussion is very personal. For Self-authoring participants, the discussion is more conceptual. Interpersonal participants help to bring the discussion to pragmatic concerns when they remind other participants of their personal challenges and needs.

Creating and Accepting Change

The implicit EBM demands that are most affected by this significant finding are the *Capacity to Acknowledge Personal Responsibility & Ownership* and *Comfort with Ambiguity*.

Interpersonal Mindset. Individuals exhibiting an Interpersonal mindset are particularly willing to take responsibility for implementing a new management approach if a mandate is in place or they are unofficially asked to do so by someone in authority in

their affiliation. First and foremost, their responsibility and sense of ownership lies with their affiliation's interests. For anyone entering into a professional situation or a professional relationship, taking on a new kind of responsibility brings with it a certain amount of change, difference and often, anxiety. As someone starts making sense of and integrating difference, there is a certain amount of ambiguity about one's level of and type of responsibility. Those with an Interpersonal mindset need permission, motivation, and support, from a person they trust, to embrace difference and face some ambiguity as change evolves. The implication is that if this support doesn't exist for them, they may disengage because of feelings that the process is out of control and overwhelming. This is particularly illustrated in meetings when someone new shows up and brings up entirely new ideas thus turning the process on its head or stalling it. In other words, given permission to feel comfortable with difference or change is a necessary condition for these participants to take personal responsibility for the process. One participant notes that she looks to an authority figure in the room to understand what is going to happen next, in light of this new information.

Interpersonal / Self-Authoring Transition. In similar situations where new members bring up entirely new or conflicting ideas, those exhibiting a balance of Interpersonal and Self-authoring mindsets start to realize how differences in individual opinion can lead to new understandings for the group. However, they are not always able to fully integrate these differences into their own thinking. Sometimes the ambiguity of new ideas entering the process becomes a hindrance to change. A clear and explicit acknowledgement of the necessity of such ambiguity, as part of the process, goes far in

helping them to feel settled about a shift in the process. As these participants gain the capacity for taking on different and/or conflicting perspectives, they start to take responsibility for self-comforting in the face of change and ambiguity. This example is from a developmental interview with a participant who can hold a significant other's perspective but is having a hard time accepting it, since it is different from her own.

Whatever all her reasons are - she doesn't see my truth. And so I am torn about- I'm torn between the piece of me that wants to dismiss her truth out of hand as simply wrong and unfounded and selfish and ignorant. And the other mode of being torn is allowing myself to think what must XX's experience be trying to be in a relationship with me with her fears or angers or whatever they are and trying to find the place in me that can be empathetic to her - empathetic doesn't mean you have to agree, doesn't mean you have to corroborate somebody's truth. It means you allow them the space to have their truth, and that's really it.

She can perceive this other person's truth yet is having difficulty "sitting with it" mentally. She understands that she does not have to identify with it though it is challenging for her not to be able to. Yet she is not willing to let go of her version of the truth just to be in agreement with this other person.

Self-Authoring Mindset. Participants exhibiting a Self-authoring mindset speak often of collective responsibility. This generally means that one takes responsibility for oneself and simultaneously is aware of how their actions affect others. They believe that if everyone is able to feel responsibility in this way, EBM principles such as making trade-offs more explicit, are more likely to be realized. There will be a collective awareness of the interconnections among stakeholders. This collective community can only be shaped through open dialogue where ambiguity is the norm and is expected to lead to new understandings. Integrating difference is essential for change. As mentioned previously, a limitation of this thinking is that not everyone has the capacity to take this

kind of responsibility thus unexamined assumptions hinder progress. This excerpt illustrates a Self-authoring participant who wants the process to go a certain way and though it may not come across here, he also talks about his frustration by what he believes is the selfishness of others. Hence, an unexamined assumption.

I think it's trying to build a community of interests that recognizes that there are a variety of different interests and competing interests for the use of the oceans and that we have to work out common grounds as to how the competing interests can work together in a community basis rather than all being individualistically trying to pursue their own selfish interest.

It's not that this person lacks the capacity for examining his assumption about his claim above. Rather, his theory is that individuality is the root cause of a lack of community in this case.

Self-Authoring with Inter-Individual Mindset. Those with some Inter-individual complexity exhibit a more immediate sense of responsibility. With the capacity to reflect on oneself in action, their sense of how and to what degree they should take responsibility is context-dependent. They are better able to adapt to the ambiguity of the shifting process as they learn more about themselves, others and the needs of the process itself. Entirely new paradigms can be created when reflection-in-action, process-focus, and adaptive thinking and feeling are working together for an individual. As mentioned in an earlier chapter, the four individuals exhibiting some Inter-individual are the only research participants who speak of a new paradigm in a substantive way, "To do the proper job, we need a new paradigm and we don't get a new paradigm if we work within the system."

Understanding the Process – Mindsets in Action

The implicit EBM demands most affected by this significant finding are the *Capacity to Conceptually Understand Complex, Multiple Variables Multiple Variables* and the *Capacity to Reflect on and Differentiate Among Management Implications*. Some of the new variables decision-makers face in EBM are making trade-offs among management sectors more explicit in conversation and policy and understanding the cumulative impacts of disjointed management that doesn't do the former. As discussed in nearly all chapters, EBM brings a new level of complexity to coastal ocean management. The analysis and particularly the chapter on understanding the process brings to light where this complexity manifests – within the decision-making process itself. In this section and the next section on Research Considerations, I stress the importance of attuning to this complexity as adding something completely different to current processes. In other words, new stakeholder engagement processes must be created to deal with new variables of marine management and of stakeholders themselves.

Interpersonal Mindset. As shown in all the analysis chapters, participants view the MOP process differently and much of this difference is related to one's mindset. Those exhibiting an Interpersonal mindset talk about the process and its new complexities in somewhat global terms, often in the form of a description they either hear from someone else or which is generally accepted by others. It is difficult for these participants to ignore the state legislative process during MOP meetings but also difficult for them to integrate the state and MOP processes and see them as different pieces of something greater. This difficulty is illustrated during MOP meetings in which these participants mainly offer

supporting comments, clarifying questions, or concerns rather than adding an independent perspective to the mix. They can benefit from a meeting facilitator who could draw out these comments, questions and concerns to help them think through them a bit more and maybe from another perspective. In this way, these individuals can more fully contribute to the conversation.

Their capacity for attuning to the complexity of the process and all of its variables is limited based on their global, literal understanding of it. As their capacity for reflection grows, they will start to see new variables and interconnections among variables.

Interpersonal / Self-Authoring Transition. Those balancing the Interpersonal and Self-authoring mindsets are focused on balancing the new variables of the people and the process with those of their own. This focus seems to bring them to play a bridging role between participants with Interpersonal and Self-authoring mindsets. This bridging role enables them to feel more control over the process and its direction. They are strategic in their understanding of the process and when the times are right, in their opinion, they feel comfortable interjecting a bit of their own perspective into the mix. In my opinion, these individuals play a very important role in this process, particularly the facilitator, who exhibits this mindset. This role is important to the EBM inherent demands of understanding complexity and reflecting on it. Even though their capacity to do either of these things is limited at times, they are in tune to the limitations of those with Interpersonal mindsets and simultaneously, in tune to the limitations of those with Self-authoring mindsets. In other words, they seem to have an innate sense that those with Self-authoring mindsets need the room to reflect on EBM's complexity but often don't

notice that others may not be able to see the complexity as they do. In these cases, the participants playing these bridging roles, help to translate the complexity to Interpersonal participants so that they can be part of the discussion. For example, one participant makes this bridge by asking a Self-authoring participant to “tell her more.” This is a simple though particularly helpful kind of statement because, as one participant comments, it takes the onus off the Interpersonal participant who may feel embarrassed about not understanding what is being discussed. And at the same time, it facilitates more understanding because the original statement is communicated twice, and often, more explicitly the second time.

Self-Authoring Mindset. The participants exhibiting a Self-authoring mindset come to the table with their own unique perspective on EBM and a focus on how to manage using this approach. Their perspective on how the MOP process is going is contextually-driven and outcome-oriented. The context and the outcome are judged by their own internal standards. In meetings, they bring the self-authored “ideas” to the conversation. They sometimes are combative when someone doesn’t understand their idea in the way that they do. For example, one participant blurts out that the process is stupid because he is asking for context and is not getting it. These participants bring the framework for connecting ideas, ideas that are self-authored as well as ideas that are examples of what’s been done elsewhere. One participant is particularly adept at this and is always linking ideas from different people together and/or to something broader.

Self-Authoring with Inter-Individual Mindset. Lastly, those with some Inter-individual mindset speak of transforming the process and creating new paradigms. They are more process-oriented than outcome-oriented. In meetings, their comments often help to broaden the context within which complexity is being discussed. They pick up on the undercurrents of the conversation and work to adapt the process to those undercurrents. For example, one participant often stops the conversation and reflects on what just happened in real-time. The benefit is that sometimes it would trigger either the facilitator or a participant to take a step back conceptually and review. A drawback, as expressed by other participants, is that they often come across as philosophical, hard to understand, or impractical. Others are not always able to turn an Inter-individual conceptual understanding of the process into something concrete and more workable. For those with Self-authoring mindsets and beyond, suspending presuppositions to spend time in reflection increases their capacity for learning during the process (Schon, 1983). They are often intrigued by what they don't know and often search for new questions rather than answers. With an increased and more complex awareness of the many variables of EBM decision-making, these participants have more capacity to empower the process by helping the group to reflect on either new ideas or old ones in new ways.

Research Implications

The following are research considerations for MOP and other stakeholder engagement processes whose main purpose is to manage marine resources more holistically. These are developmental considerations based on the analysis and

implications discussed in this dissertation. They are listed below and worked through for the remainder of the chapter.

Developmental Considerations for EBM Stakeholder Engagement Processes

1. The complexity of an EBM decision-making mandate requires attention to the complexity of the adult mind. Developmental psychology has a role to play in creating more optimal stakeholder engagement processes that are more relevant and therefore, meaningful for the individual stakeholders.
2. Decision-makers must be acutely aware of the act of decision-making, i.e. the process itself must be intentional. Optimal stakeholder engagement must be part of the decision-making process from the onset and not relegated to a supporting role.
3. Optimal stakeholder engagement processes can be created to support the EBM ideal by focusing on creating safe spaces for dialogue and deliberation across difference.

Developmental Consideration 1

The complexity of an EBM decision-making mandate requires attention to the complexity of the adult mind. Developmental psychology has a role to play in creating more optimal stakeholder engagement processes.

It is not necessary nor is it feasible for managers or professional process facilitators to be experts in developmental psychology in order to consider the mindsets of decision-makers. It is necessary, however, for them to learn how to facilitate processes

that effectively invite all of the mindsets into the room. There are ways in which one can recognize developmental traits and adapt and/or create a process that works with and for a range of developmental capacities. As described in Chapter 2, there is a body of literature that focuses on creating more effective stakeholder engagement processes. However, none of that literature looks at these processes in relation to the capacities of the adult mind to engage in ways particular to EBM. If the complexities of meanings which individuals bring to the process of engagement continue to be ignored, processes will be created and policies enacted that are not truly and comprehensively EBM. To accomplish EBM's primary tenet of managing across sectors, the stakeholders across all sectors must be engaged. They cannot be optimally engaged without attention to how they make sense of the process and its intended goals. And if they are not engaged in ways that meet them where they are, the process will fall short of fully integrating all stakeholders into decision-making. From a developmental standpoint, a stakeholder engagement process must be created with the people in mind. It needs to speak to them, where they're at developmentally. The process does not and cannot stand alone separate from its participants. The process itself can not have a direction or a goal separate from what its participants understand it to be. This is where recognition of participants' cognitive, interpersonal and intra-personal capacities comes in. If the range of mindsets that may be part of any given process is understood, the process can be structured to work for the range of participants. Consequently, there is a greater chance that the participants will add more value to the process (Robbins et al., 1994). At the very least, incorporating developmental considerations can be simply about personalizing the process by getting to know the participants in a more personal way. It may entail varying the process structure

to attend to the range of needs in the group. It may entail an increased emphasis on understanding multiple perspectives and reflection. It may entail exercising commitment in the face of doubt by deliberately working through conflict and ambiguity. It may incorporate process awareness techniques such as role-playing to bring to light underlying interpersonal manipulations and power dynamics (McAuliffe, 1994).

As shown throughout this dissertation, different mindsets learn differently. How someone makes sense of the process translates into what and, more importantly, how they learn. A person with an Interpersonal mindset may come to the process to gain knowledge about EBM because they feel responsible for their affiliation's interest. As one participant said, "This is going to happen. It's just a matter of how and when and I want to make sure I understand how it affects my affiliation." These participants come to a learning process asking "What am I supposed to know?" A person with a Self-authoring mindset may come to a learning process thinking about what they want to learn and accomplish for themselves as well as their affiliation and use the process to gain that information, knowledge, and skill. Education, in the Self-authoring mindset, is used to deepen one's understanding rather than to gain acceptance (Weathersby, 1976).

Stakeholder engagement processes, when looked at developmentally, are ripe classrooms not only for developmental growth but for creating processes or reworking existing ones to more fully connect with participants' capacities. And the more fully every stakeholder feels engaged in the process, the more effective and successful the process will be.

Developmental Consideration 2

Decision-makers must be acutely aware of the act of decision-making, i.e. the process itself must be intentional. Stakeholder engagement must be part of the decision-making process from the onset and not relegated to a supporting role. It must support deliberative characteristics.

Throughout the research process, it became apparent how important stakeholder engagement is in order to obtain EBM principles, particularly those related to making trade-offs more explicit. There is an implicit EBM ideal: the capacity to explicitly exercise the cognitive, interpersonal, and intra-personal demands. In order to reach that ideal, decision-making must move away from an interest-based discourse to a deliberative discourse which takes into consideration the inherent interaction and interdependence between the individuals involved and the context in which they find themselves. EBM literature on stakeholder processes offers considerations aimed only at upholding an ideal rather than simultaneously considering who the stakeholders actually are. By intentionally considering developmental capacities when creating a stakeholder engagement process and by using deliberative characteristics, EBM processes can become mechanisms for a new kind of learning which in turn enhances the EBM process. Learning that involves both informational learning (learning new information) and transformation learning (where participants develop new ways of understanding both themselves and the process) Decision-makers need the time and place where they have the luxury, support and resources to understand and integrate the EBM concept and process, and better realize the underlying cognitive, interpersonal, and intrapersonal demands. Equally importantly, they need a safe space to explore/investigate, practice, and

adapt to it together (COMPASS, 2008). In creating such a context, the evolution of individuals' meaning making would get as much consideration as the evolution of the ecosystems they are a part of. Such a context closes the circle and becomes a more complete "ecosystem"-based process, and thus, a more efficient, effective, and successful one.

A structurally different context of decision-making means forming new relationships and substantive interactions between and among management sectors, scientists and industry groups. These new interactions become the hosts for a new set of ideas to emerge. There are deliberative requirements of EBM decision-making that are not being considered and that are essential to the management paradigm's underlying values, such as the capacity to attend to multiple perspectives at once in conversation. Theories about democratic deliberation provide a body of literature that describes the shift in decision-making being considered with an EBM approach, a shift toward cross-sectoral communication and more inclusive stakeholder engagement processes. The literature is also suggestive of what is needed to address the types of coordination and processes needed to take a new approach.

These communication theories are not about brokering interests. Instead, they are about promoting free and open discourse, reflective judgment, respect for different communication styles, and a process for building a shared knowledge base (Habermas, 1990). These theories assert that moral disagreement should be discussed through a deliberative, intellectual process where choices, including process choices, are made collectively (Baber & Bartlett, 2005.) If one looks at ocean management decision-making

through a deliberative lens, stakeholder engagement is a normative process as well as a procedural one.

The salience of democratic communication theories to this work is that generally, they promote moving away from single-sector, interest-based dialogue toward one that is more collective-interest, deliberately-based, inclusive, and holistic. For example, the following deliberative process characteristics are, in some ways, symbolic of the paradigm shift from single-sector management to EBM (Forester, 2000; Dryzek, 2000):

Sector Interest-Based

- Motivation of dialogue is self interest.
- Hierarchy and control are favored over equality.
- Stakeholders are chosen to participate based on status.
- Environment is discussed in subordinate terms.
- "Experts" carry more weight in the discussion.
- Deliberation is restricted to rational argument.
- Individualism is valued over group identity.

Collective- Interest/Deliberative-based

- Coordinated, central action is sought with foresight built in; Sentiment is to join forces to change policy.
- Normal citizens are critical to the process.
- Environmental protection & economic prosperity go together.
- Words like "partnership" are used to define stakeholder group.

- New and innovative ideas are generated through dialogue.
- Environment and humans are acknowledged as interrelated.
- Deliberation is considerate of other types of communication such as emotional, intuitive, or rhetorical .
- The complex nature of decision-making process is understood and is, itself, considered

Taking a more deliberative approach encourages, and, in fact, requires, one to weigh one's own interests in relation to the public interest, and appeal to principles that others can accept because they are morally justified (Gutman & Thompson, 1996). In this case reasonable people can agree to disagree because they are each making claims that consider the interests of the other and the greater good and as a result, they are reflecting on their own values to do so. Not only can participants agree to disagree but their own views may be transformed as a result of a justifiable process of deliberation. Justifiable in this case means discourse that is devoid of coercion, power and strategy to the extent possible (Dryzek, 1990).

The beauty of MOP being structured as a public/private partnership is that deliberation about environmental policy occurs outside of government or any one sector's turf. By its very nature, public/private partnerships seek to integrate different interests, and in MOP's case, they are trying to do this through a more inclusive dialogue and deliberation. A constructive developmental approach to deliberation could add value to this particular point. By understanding participants' mindsets, stakeholder engagement processes like MOP can not only facilitate content-learning but help develop adaptive expertise regardless of one's mindset (Folke, 2005). Participants of all mindsets can learn

to adapt to new communication philosophies by creating processes that provide them the kind of support they personally need. This is addressed in the next section.

Developmental Consideration 3

Stakeholder engagement processes can be created to support the implicit cognitive, interpersonal and intra-personal demands of EBM and in turn, facilitate decision-making that is more holistic, considers multiple perspectives, and ultimately, enhances our understanding of the interconnections between human activities and coastal ocean resources.

How does one facilitate, manage and organize a decision-making process that considers differences in mindsets? As mentioned earlier, stakeholder engagement in any policy formation process should not play a supporting role nor should it play a passive role. Stakeholders must be optimally engaged from the onset through an official mechanism that is connected to, but not directly from, government (such as a public/private partnership). The engagement process should start long before the mandating process starts, if possible, and become a permanent mechanism for ongoing dialogue across sectors. The engagement should be two-way and consist of regularly scheduled meetings to build relationships. The process must be based on deliberative qualities and should strive for that kind of honest and respectful dialogue. EBM stakeholder engagement processes should not be predetermined. There must be intentionality about the process development and ongoing recognition of process traits as the process unfolds. And most importantly, participants should be aware or made aware of these process traits. With awareness, there is a better chance that participants can help

enable the process to adapt. But to make any of these characteristics work, the process facilitators should incorporate developmental considerations into their planning and learn how to acknowledge mindset differences, work with them, and even support their transformation.

EBM stakeholder engagement processes, as described above, are inherently excellent learning organizations. To take full advantage of the learning potential for more effective marine policy, developmental considerations can be applied in the following ways. First, facilitators must find ways to help decision-makers look at a problem from different perspectives to help them understand that their perception of the situation and how they are making sense of it is different from others'. Yet, they are going to need guidance on how to do this in practice. It may not be obvious or intuitive that a particular individual hears one thing being discussed while the person next to them hears something quite different. Facilitators can look to the great body of literature on learning theory (Terrell & Hale, 1992; Kolb, 1979). Developmental literature, in particular, typically points to three factors to facilitate learning something new: practice, variation and reflection (Fazey et al., 2005). Developmental considerations to achieve each are discussed next.

Practice Perspective-Taking

By practicing cross-sectoral dialogue, decision-makers will, at the very least, start to get used to its challenges, benefits, and nuances. To create effective learning environments and practice spaces for stakeholder engagement, facilitators can learn how to join each person where he or she is by understanding the basic characteristics, needs,

strengths, and limitations of the primary mindsets (as summarized in charts throughout the dissertation). While facilitators may not be adept at differentiating between mindsets, and, in fact, do not need to be, they can make sure to cover all of their bases. Here are some basic developmental recommendations for process facilitators which can be applied to the range of mindsets to practice perspective-taking (Adapted from Isaacs, 1999, unless noted otherwise):

- Evoke the ideal not only by asking people to brainstorm and think out loud but by teaching people how to do this constructively.
- Ask individuals to suspend their perspective temporarily.
- Embody reflective judgment.
- Listen to emerging themes and connect them.
- Listen to the way in which individuals contribute to the conversation.
- Acknowledge all viewpoints respectfully.
- Point out people's commonalities and differences to help some participants get a better sense of what makes them unique and what is similar among them.
- Probe individuals to think through their thoughts out loud, in small groups, or one-on-one especially for those at a transitional Interpersonal and Self-authoring mindset. This helps them develop their theory with some support.
- Highlight connections between the current stakeholder engagement process and other related processes at the forefront of discussion. Ask participants to think about how various initiatives are related to one another and how they are different. E.g. In MOP's case, the state's relationship to MOP.

- Call generalizations and assumptions to attention during discussion in a non-threatening manner.
- Personally understand the affiliations that are being represented at the table.
- Check-in regularly about the process while it is occurring. Ask participants what they think is happening and where it is heading.
- Ensure there is a clear set of process objectives so that participants can practice informed judgment (Fazey, 2005). Understand how participants make sense of these objectives.
- Be prepared to act and/or be placed in a mentor or role model position by some participants. Use this role to encourage participants to reflect on their perspectives, differentiate among them, and see their relevance to the context at hand.
- Encourage individual theories and philosophies and thinking out loud about them.
- Encourage constructive criticism of process and self; create and allow space for this to be a helpful part of the process.
- Synthesize ideas and help connect ideas to context and to one another.

(Last four bullets adapted from Weathersby, 1976; Daloz, 1980; Kegan, 1982, 1994; Portnow et al., 1998).

While it may not be possible to actively implement all of the recommendations above, it is a useful exercise to try out different variations of suggestions to understand which help a facilitator gain insight into the people behind a process.

Variation - Change

Participants' capacity to adapt to and learn from changing rules, relationships, processes, and contexts is a significant factor in determining how they make sense of the MOP initiative. Those exhibiting Interpersonal mindsets note in interviews that they need to open up to the MOP process and develop trust that it is there to listen to their affiliation's interests. Because their loyalty is with their affiliation, it is not easy for these participants to discuss change in a context different from their affiliation and loyalty. Change in stakeholder engagement processes equate to changes in the way in which participants talk with one another. One can't force dialogue to happen (Isaacs, 1999). Having a well-trained facilitator who creates a safe context to ensure that the process allows participants a chance to practice perspective-taking, adapt to and try on variability and change, and reflect on the process makes for a more effective enterprise. Here are some basic developmental recommendations for process facilitators regarding variability and change which can be applied to different mindsets:

- Set up the process so that decisions can be reached a number of ways and by addressing criteria that participants create themselves.
- Vary the way participants have dialogue and deliberation through large group discussion, small group discussion, one-on-one, and giving feedback through the written word as well as verbally.
- When the group is contemplating a decision, discuss the directions it could take and think through the possible outcomes together.

Similarly to the last set of recommendations, change takes time and it may not be feasible to exercise the recommendations above. However, it is worth being aware and attending to the different ways of defining and conceiving of change.

Reflection

The last significant finding and one that transcends all three is attending to the stakeholder engagement process in new ways by keeping the people involved and their capacities in mind. Just as it is important for a group of decision-makers to understand how taking one direction may result in a certain outcome compared to taking another, it is also important to follow up and reflect on the decision. Reflection becomes part of the process not an endpoint. This includes ongoing awareness and monitoring of incongruities between intended and actual outcomes, process goals, and participants' attitudes around a decision. Reflection, as an essential part of the process, allows participants to have the space to enhance and nurture their perspectives and their perspective-taking. Making reflection explicit and intentional alerts participants to the fact that expectations for the process, context, and outcome are dynamic. Making these expectations explicit can help move the group toward new understandings of one another, toward transformation (Laske, 2008). The goal is to facilitate the understanding and experience that learning about different perspectives is a valuable opportunity for broadening one's viewpoint. Having a facilitator for these types of exchanges is essential to keep the conversation respectful and open-minded. Here are some basic developmental recommendations for process facilitators regarding the structure and organization of the process itself which can be applied to different mindsets:

- Make reflection a continuous part of the process and encourage a kind of discourse that helps to make individual expectations explicit so that they can be respectfully and productively discussed.
- Use questioning as a way to encourage self-reflection particularly for individuals who are not comfortable or who have difficulty doing this on their own. Questions such as those that ask them to reflect on the consequences of theirs or someone else's need or idea and questions that ask them to share how they came to a particular way of thinking helps focus their thinking. These nudges facilitate individuals to express themselves more clearly and effectively to give others a deeper awareness and understanding of where they are coming from.

This chapter discussed the importance of creating new kinds of stakeholder engagement processes – ones that consider the mental capacities of participants. These processes should be developed specifically for a range of mindsets and in essence, cater to difference. The implications of individuals of different mindsets coming together to make decisions about coastal ocean management were reviewed. Considerations were offered for process facilitators, who have limited knowledge about developmental psychology, to incorporate developmental elements into their facilitation. Lastly, this research is a call to action for anyone embarking on an ecosystem approach to management to recognize that each individual comes to the process with their own way of making meaning, their own story of reality. Each falls within a range of ability to take on others' perspectives and to create their own standards by which to judge these perspectives. Each has different capacities to differentiate among their own and others' perspectives. Each has a different comfort level with change and has different needs

associated with adaptation. Each gets these needs fulfilled differently. And each has put together a different puzzle of the process itself, configuring and reconfiguring it to ways that they understand. To ignore these mental differences, is to ignore the ultimate human dimension of ecosystem-based management.

Future Research

Many stakeholder engagement processes are not necessarily created with actual participants in mind. They are not created to meet the needs of a range of participants. They promote informational versus transformational learning. They encourage dialogue and deliberation but fail to understand and/or acknowledge when participants can't achieve these ideals. Guidelines to weaving constructive developmental theory and approaches into process facilitation are a practical aim for this research. In addition, other researchers can be attuned to the themes of perspective-taking, change, and process when conducting stakeholder engagement research in other contexts.

Future research should be conducted that explicitly investigates the efficacy of a deliberative approach to environmental decision-making when looked at through a constructive developmental lens. This will add to the growing body of literature about deliberative democracy and the environment (Hajer, 1995; Baber & Bartlett, 2005). Transdisciplinary research can weave together the cognitive, emotional, social, and political variables that EBM stakeholder engagement processes inherently demand. And in doing so, create and sustain processes that do, in fact, consider and include the whole of the ecosystem.

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APPENDICES

APPENDIX A

LETTER TO PERSPECTIVE RESEARCH PARTICIPANTS

I am writing to ask for your participation in my doctoral research. Besides working for COMPASS and participating in the MOPF planning process, I am a student at the University of New Hampshire in the Natural Resources and Earth System Science Program. I am using the Massachusetts Ocean Partnership Fund process as my case study but am most interested in the individuals involved in the process.

Your involvement would entail two one-hour tape-recorded interviews. These could be completed during a one-time visit. The first interview is semi-structured meaning the participant can choose to talk about anything he/she desires in response to some prompts. The aim of this interview is to understand how the participant understands the experiences he/she is describing. This method is called the Subject Object Interview and is based on Harvard researcher, Robert Kegan's theory of ego development. The second interview is specifically about the MOPF process and ocean management in general. All interviewees and their affiliations will remain anonymous. Pseudonyms will be used in place of real names. Data will not be used by MOPF to gain information about individuals. You will have access to your data at any time after the interview process. I've attached a research summary for your review. Please respond to this email to let me know whether you are amenable to participating. If so, I will call you to set up a meeting within the next few months.

APPENDIX B

ECOSYSTEM-BASED MANAGEMENT INTERVIEW QUESTIONS

Demographic Information

Name:

Affiliation:

Title/Profession

Gender:

Age:

Education/degree:

Questions related to subjects' role in the MA Ocean Partnership Fund

The Process

1. Is there any particular aspect of the process that made you think or feel differently about your role within the group?
2. Have there been any aspects of the process that you've felt uncomfortable about?
If so, why?
3. As you know there's no real blueprint for managing coastal oceans in this new way. How has that been challenging for you? Why? In what ways has that presented opportunities? Can you give me an example?
 - a. Get to process vs. product here too
4. How important is reaching consensus to you? Why/why not?

1. What does collaboration mean to you?

The Self

2. Why did you agree to participate in the MOPF? Did you have any expectations about the process prior to becoming involved? Try to get to the following:
 - a. Is this different for them?
 - b. What do they think MOPF is trying to do?
 - c. What's their personal motivation?
3. What were your first expectations, impressions, hopes and/or fears? Have those changed now that you've been involved for a few months?
4. What role do you feel you play as part of this group? How do you contribute to the group projects and the meetings?
5. Do you feel like your voice has been heard? If so, in what way? If not, why?
6. Is there anything you've learned about yourself as a result of being part of this group?

The Other

7. Why do you think you were asked to participate? Is there anyone missing from the table?
8. Who are the group leaders in that their opinions seem to carry more weight than others? Why do you think that is?

Questions related to subjects' perceptions of the underlying principles of ecosystem-based management

The Process

1. If the MA Partnership was successful in its efforts, what would that look like in practice?
2. As you know, this Partnership is advisory. It will not pass laws or make regulations. For an ecosystem-approach to work, who needs to be in control? How would the various stakeholders be organized? Is a collaborative process the most effective way to go? Is it likely to influence decision-making?
3. What's the most difficult aspect of ecosystem-based management to wrap your head around?
4. What are the greatest opportunities/obstacles to achieving a new approach?
5. Is EBM a solution or a problem?
6. How is EBM different than current approaches?

The Self

7. How important is a new ocean management strategy to you?
8. What would not taking an EBM approach mean to you?

The Other

9. Whose responsibility is it to make an ecosystem-based approach work and/or to make change?

10. Will there be some groups who benefit if this approach is taken? Will there be some who lose out? Why? Can you give an example from your experience with the MA Partnership?

APPENDIX C

INTERVIEW CONSENT FORM

I agree to participate in two tape-recorded interviews for a study about ways people make meaning of their own personal experience. I understand I will be asked about ordinary experiences (like feeling moved, or being angry or conflicted about some decision, etc) and also about my experiences related to the Massachusetts Ocean Partnership Fund. I understand that I do not have to answer any questions I choose not to answer. I understand that any excerpts taken from this interview, written or spoken, will disguise all names of persons and places so as to preserve my anonymity and privacy. I understand that I will not receive feedback on my interview. I understand that at the end of this study, the audiotapes will be kept in the privacy of the researcher's archives for future reference if needed. I understand that although most people find these interviews engaging and interesting, should I feel like discontinuing the interview for any reasons we may do so at any time.

If you have questions about the study at any time, contact:

Verna DeLauer

603-862-1935

verna.delauer@unh.edu

APPENDIX D

ADMINISTERING THE SUBJECT OBJECT INTERVIEW

Materials

Ten subject cards; pencil, tape recorder and 90 minute tape

Prepping the subject

Subject needs to know he/she is participating in a 90 minute interview to learn how they think about things, "How you make sense of your own experience," etc.

Generating Content: The Inventory

The subject is handed 10 index cards. Each card has a title printed on it:

1. Angry
2. Anxious, nervous
3. Success
4. Strong stand, conviction
5. Sad
6. Torn
7. Moved, touched
8. lost something

1. Change
2. Important to me

The cards are just to help the subject jot down things they might want to talk about in the interview. The subject is told that they will spend the first 15-20 minutes with the cards and then talk together for an hour or so about those things they jotted down on the cards which they choose to talk about.

Probing for Structure

Once they've had a chance to jot down some thoughts on the index cards, the interviewer should ask them if there is one card they felt more strongly about than the others and start with that one. The idea is not to get through all the cards but to let the subject introduce personally salient content and for the interviewer to try to understand it. The subject will give the interviewer the "whats"; the interviewer must learn the "whys". The answer to the "whys" helps you understand how the person's subject-object construction is shaping real life, the goal of the interview.

S-O Interviewing Principles

- Stay focused on the interviewee's own experience.
- Follow interviewee's own words.
- If you find yourself wanting to ask the same question again to clarify, you can say, to let the person know you still know what you are doing(!), "I want to make sure that I understand what YOU mean and not what I THINK you mean."

- Following that, try not to make assumptions about what the interviewee means. If it isn't clear, ask again or ask them if they can say more about that.

Kinds of Questions to Ask

- Follow interviewee's own words about affect and ask, for example, what made him/her feel the MOST angry or most sad or most upset or most thankful, etc.
- Ask questions that get at what is most important, best, worst, hardest, etc. about what the interviewee has just said.
- *Avoid* asking questions such as
 - Why did you feel that way?
 - Why did you do it that way?
 - How did that make you feel?
 - How do you think he/she felt about that?
- *Do* ask questions such as
 - What was that like for you?
 - What did that mean to you?
 - What was most important to you about that?
 - What was hardest/worst/best for you about that?
 - How did/do you know/decide what the best or right thing to do is/was?
 - How do you know when you've been successful?
 - How do you know when you've done "the right thing?"
 - What would it mean to you if ----- had/had not happened?

- What is it like for you when someone you care about or respect challenges you on something important to you?
- When you said _____, can you say more about that?/explain that?
- Can you give me an example of when _____ actually happened and what that was like for you/what that meant to you?

Kinds of questions to ask when trying to get at how someone made sense of something in the distant past

- When you think back to that time, are there any differences that stand out for you about how you view or understand that experience now as opposed to how you understood it then?
- Are there things that are clearer to you now or that make more sense to you now than they did then? What are they? How is it different? What did it mean to you then and what does it mean to you now?
- What is the biggest difference that you see? Can you talk about the ways you took in or understood that experience then that is different than the way you might take it in if you were to do it again now?
- In terms of your thinking in general, are there ways that you see yourself thinking about things differently now than you did then? How so? In what ways? What is the most striking to you about the differences in the way you thought then and the way you think about things now?
- What do you wish you understood then that you understood now? What do you think might be different now if you had understood that then?

- What was your reason/motivation for doing that course/class when you did it x number of years ago? If you were to do it today for the first time, would your motivation/reasons for doing it be the same or different? If different, how would they be different?
- What was most important to you about having this experience at the time that you had it? What is most important to you now about having gone through that experience back then?

APPENDIX E

IRB APPROVAL

University of New Hampshire

Research Conduct and Compliance Services, Office of Sponsored Research
Service Building, 51 College Road, Durham, NH 03824-3585
Fax: 603-862-3564

28-Feb-2007

DeLauer, Vema
NRESS, James Hall
389 Juniper Hill Road
Stoddard, NH 03464

IRB #: 3925

Study: Investigating Ecosystem-based Management through a Constructive
Developmental
Lens

Approval Date: 28-Feb-2007

The Institutional Review Board for the Protection of Human Subjects in Research (IRS) has reviewed and approved the protocol for your study as Exempt as described in Title 45, Code of Federal Regulations (CFR), Part 46, Subsection 101(b). Approval is granted to conduct your study as described in your protocol.

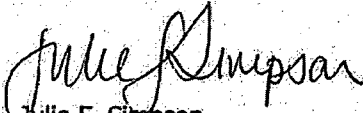
Researchers who conduct studies involving human subjects have responsibilities as outlined in the attached document, *Responsibilities of Directors of Research Studies Involving Human Subjects*. (This document is also available at <http://www.unh.edu/osr/compliancelirb.html>.) Please read this document carefully before commencing your work involving human subjects.

Upon completion of your study, please complete the enclosed pink Exempt Study Final Report form and return it to this office along with a report of your findings.

If you have questions or concerns about your study or this approval, please feel free to contact me at 603-862-2003 or Julie.simpson@unh.edu. Please refer to the IRS # above

in all correspondence related to this study. The IRB wishes you success with your research.

For the IRB,

A handwritten signature in cursive script that reads "Julie F. Simpson".

Julie F. Simpson
Manager