



Analysis

Public participation for sustainability and social learning: Concepts and lessons from three case studies in Europe

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ABSTRACT

Shaping change such that it avoids losing potentially useful options for future development is a challenging task in the face of complex, coevolving socio-ecological systems. Sustainability appraisal methods, which open up dialogue and options before closing down and making suggestions, pay attention to the inclusion of various and conflicting points of view and address uncertainty, are increasingly used in the science, environment and energy policy domains. The quality of the process is seen as key to high quality appraisal outcomes. Dimensions of quality include learning opportunities which are seen as ways for addressing complexity and uncertainty. Participatory sustainability appraisal methods intend to support social learning among participants. Despite high expectations, social learning processes in sustainability appraisals are poorly conceptualized and empirically understudied. This paper (1) briefly reviews theories of social learning; (2) develops a conceptual framework for the analysis; and (3) presents an empirical application of the framework by use of data obtained from three energy and natural resource management case studies around Europe.

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1. Introduction

Mounting knowledge of what influences the changes of nature and societies has brought us the insight that in the end we will not know everything. We have to learn to live in a complex world with high uncertainties and an unclear future. How to make 'good' decisions under these circumstances? This is a key challenge for resource managers and policy makers.

Advances in our understanding of how natural and social systems interact along spatial and temporal scales need to be substantiated by democratic mechanisms which can deal with inherent problems of continuous change, uncertainty and multiple legitimate perspectives of the systems. In environmental decision making therefore the focus has shifted away from the outcome to the process and from pure expert judgement to using society as extended peer community (Funtowicz and Ravetz, 1990; O'Connor et al., 1996). When facts are uncertain, values in dispute, stakes are high and decisions urgent, scientists can provide useful input only by interacting with the rest of society (Funtowicz and Ravetz, 1990, 1994, 1999; Kasemir et al., 2003; Guimarães-Pereira et al., 2006). Making decisions about complex socio-ecological issues is then a process, where the actors involved are continuously learning from each other and where social learning

becomes a key governance process (Board on Sustainable Development, National Research Council, 1999; Parson and Clark, 1995; The Social Learning Group, 2001; Folke et al., 2005; Pahl-Wostl et al., 2007b).

Social learning is explicitly based on the idea that processes are more important than states (Pahl-Wostl, 2002) and is related to the concept of bounded rationality (Lee, 1993). The latter concept was originally developed by Herbert Simon (1976), who observed that human beings have a limited information-processing capability and in contrast to substantive rationality favoured in neoclassical economics, he argued in favour of an alternative form of rationality, called procedural rationality and which had been developed in psychology. Behaviour is then rational, if it is the outcome of appropriate deliberation and therefore rationality depends on the quality of the process that it generates.¹ When dealing with complex issues and high uncertainty the search for optimal solutions (substantive rationality) is less useful than a focus on the quality of the decision process (procedural rationality), which includes that learning among the counterparts will become an essential part of the outcome (Froger and Munda, 1994; O'Connor et al., 1996).

Deliberative approaches that enhance collective learning processes among a diverse group of social actors, with different types of knowledge and perspectives, are thus central in the creation of new responses to threats for socio-ecological systems. A new generation of integrated appraisal tools that combine deliberative approaches with

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¹ In contrast common behaviour is considered substantively rational "when it is appropriate to the achievement of given goals within the limits imposed by given conditions and constrains (Simon, 1976).

multicriteria appraisals have been developed, to support decision making processes (De Marchi et al., 2000; Munda, 2004; Proctor, 2004; Gamboa, 2006; Gamboa and Munda, 2007; Proctor and Drechsler, 2006; Messner et al., 2006; Stagl, 2005, 2006, 2007a; Stirling, 2006; Hermans et al., 2007; Roca et al., 2008). Also monetary valuation methods, which are based on the idea of economic rationality, were recently combined with deliberative elements in their valuation processes. These new approaches include different forms of participation (e.g. citizen juries, deliberative workshops, surveys) in the valuation exercises to emphasize the relevance of preference construction and learning among the counterparts in the decision making process (Kenyon and Hanley, 2004; Spash, 2007; Álvarez-Farizo et al., 2007; Dolan et al., 2007; Stagl, 2007a; Spash, 2008; Álvarez-Farizo et al., 2009).

In summary, public and stakeholder participation, which includes deliberation and inclusion (Bloomfield et al., 2001), can initiate social learning processes that go beyond individual and often predefined interests and/or values, and create opportunities for a shared understanding and joint action (Fiorino, 1990; Laird, 1993; Webler et al., 1995; Schusler et al., 2003; Brugnach et al., 2008). But what exactly do we mean by social learning? Which is the scope of such a process in the context of sustainability? And how successful are deliberative processes as part of sustainability appraisals in stimulating social learning?

The paper is organized as follows: Section 2 explores the role of learning as a way to deal with complexity and uncertainty in the context of sustainability. Section 3 presents a framework for mapping social learning. Section 4 uses this framework to study social learning in three real case studies that combine participatory processes with integrated appraisal tools in the context of natural resource management and energy policy in Europe. Section 6 discusses the results and concludes.

2. Social Learning—Concepts, Complexity and Uncertainty

Socio-ecological systems are both complex and evolving and their management is faced with uncertainty and surprise, making it necessary to abandon the expectation to find a global steady state. Instead, managing complex, coevolving socio-ecological systems for sustainability requires the ability to cope with, adapt to and shape change without losing promising options for future development. Learning is a key avenue for dealing with complexity and uncertainty. It is therefore not surprising that learning is a common feature of social theories that are dynamic.

Despite the recent hype in the literature around social learning (Mostert et al., 2007) agreement on key aspects of the concept of social learning is still missing, which often leads to confusion which slows down adoption and effectiveness of the concept. In the past “[n] either philosophers who focus on epistemology, the logical underpinnings of how we know, nor sociologists who study the social processes underlying how science works give much thought to this critically important collective process of learning and understanding” (Norgaard, 2004: 238). We reviewed relevant parts of the literature in political science, sociology, economics, psychology and natural resource management and found that there is no common conceptual understanding of the term social learning. Many researchers label the phenomena they are examining as ‘social learning’, but this does not necessarily indicate a common theoretical perspective, disciplinary heritage, or even language (Parson and Clark, 1995; Stagl, 2007b). Links between disciplines are limited to cross-referencing, while theory development around social learning takes a different direction within each field. The term social learning conceals a great diversity.

One of the most cited definitions of social learning is from psychologist Albert Bandura (1977) who emphasizes that individuals learn by observing the behaviours of others in addition to directly experienced reinforcement. Under this view individuals have an

intermediate degree of individual autonomy and are neither fully controlled by environmental forces nor completely free to become what they choose. This framework was complemented by Vygotsky (1978) who asserts the fundamental role of social interaction in the development of cognition. Individuals are the learners although the learning process takes place in social settings and is socially conditioned. For other authors, as we will see in the following paragraphs, social learning refers to learning by social aggregates and implies collective and collaborative learning (Finger and Verlaan, 1995).

In organizational management Argyris and Schön (1978, 1996), focusing on complex and ill structured problems, proposed a theory of learning, called double-loop learning. In contrast to single loop-learning, double-loop learning implies changes in the underlying values and assumptions. In the same field and in more recent years, several authors have emphasized the relevance of this type of learning as a way to adapt to a continuously changing and increasingly complex environment, through collaborative action and dialogue that rest in the reflection of preexisting values and assumptions (Isaacs, 1993; Schein, 1993; Kofman and Senge, 1993). These theories are closely related to the action oriented “communities of practice” proposed by Wenger (1998). Organizational learning theories are increasingly used also in ecological economics. Müller and Siebenhüner (2007) use them for analysing the impact of environmental policy instruments on learning processes towards corporate sustainability and Siebenhüner and Arnold (2007) investigate when and why companies pursue processes of learning and change to integrate sustainability. Siebenhüner (2008) combines principal-agent approaches and concepts from organizational theory to explain observed variance in organizational learning and change in eight international environmental organizations.

In political science Hecló (1974), Sabatier (1988), Hall (1993a,b), and Jenkins-Smith (1988) consider policy making as a process of social learning in contrast to those theories of the state that base the foundation of policy change in power struggles. Most of them agree that social learning can be considered as a way of shifting dominant ideas and belief systems that drive policy making, but there is no consensus about the source of this change. While some relate social learning with the autonomy of the state others consider the influence of the social context central for the learning process.

In economics, traditionally the concept of rationality has dominated for many decades and the conceptualization of decision making and learning has played a minor role. However, evolutionary economists have used the concept of learning early on, especially in relation to technological development (Dosi and Nelson, 1994; Dosi et al., 1996, 2001). From this perspective reality is often too complex and uncertain to be fully understood and learning is claimed to overcome knowledge and problem solving gaps (Dosi et al., 1996). Learning is here more than information acquisition; it is rather the development or change of the mental models of the world.

In the tradition of pragmatic philosophy, the relation of complexity and social learning goes back to the seminal work of John Dewey.² From his perspective democracy is undermined by the intimidating complexity of industrial societies. To overcome this democratic crisis and to move towards knowledgeable citizenry with a sense of community, he sees the need for a social learning process based in experimental politics. Scientists should abandon technocratic and dominant positions and act as teachers who facilitate citizens’ capacity to make sensible political judgments and identify social needs and troubles (Lee, 1993).

Dewey had great influence on the North American tradition of adaptive management (Holling, 1978; Walters, 1986; Lee, 1993; Gunderson, 1999; Norton, 2005) and in more recent years social

² For an extended review of Dewey’s works see the thirty-seven volume set of *The Collected Works of John Dewey* edited by Jo Ann Boydston (1969–1991) and published as *The Early Works (EW)*, *The Middle Works (MW)* and *The Later Works (LW)*. Carbondale and Edwardsville: Southern Illinois University Press.

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