Ecological Economics 105 (2014) 240–253

Contents lists available at ScienceDirect

Ecological Economics

journal homepage: www.elsevier.com/locate/ecolecon

Analysis

Beyond environmental and ecological economics: Proposal for an economic sociology of the environment ☆

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ARTICLE INFO

Article history:
Received 18 May 2013
Received in revised form 11 June 2014
Accepted 15 June 2014
Available online 7 July 2014

Keywords:
Environmental economics
Ecological economics
Economic sociology of the environment
Regulation theory
Social movement theory
Environmental policy
Ecological modernisation

ABSTRACT

The vast majority of approaches in environmental economics attribute the current ecological crisis to the fact that, from its inception, the industrial economic system was founded on premises that made no allowance for the limits and regulatory functions of ecosystems. According to these approaches, we must therefore remedy the historical error of dissociating the fields of economics from the natural sciences, notably by restoring the links between these two disciplines. Distinguishing themselves from the two historic approaches, environmental economics and early ecological economics, the emerging institutionalist schools evoke not only the constructed nature of the environmental crisis (generally viewed as an objective fact by both traditional environmental economists and ecological economists), but also the socially constructed nature of the economy and its institutions. An actionalist regulationist approach allows us to formalize this twofold construction and lays the groundwork for a new economic sociology of the environment in which the technical modalities of ecological modernization are studied in light of social relations, with the understanding that social relations are also affected by the materiality of the environmental crisis. This actionalist regulationist approach also lends itself to anticipating likely trajectories in the future ecological modernization of economic institutions.

1. Introduction

The concept of sustainable development, brought forward to promote a new perspective of development and progress in response to increasing environmental risks and global development crisis (Zaccai, 2002), has had difficulty explaining the links between the environment, the social sphere and the economy. While its social dimension is often overlooked or poorly conceptualized (Lehtonen, 2004), it is probably the economy–environment debate which has been the most vibrant: although economic growth is often viewed as a necessary step to allow investments in environmental policy measures, social movements and academics from different schools have pointed out that flaws in our economic system itself, enhanced by growth, lead to poor environmental management and ecological disruption (Kapp, 1950; Pigou, 1920; Schnaiberg, 1975). Several theorizations have been proposed to explain and address these flaws, theorizations which prove to be rich and diverse, and even contradictory in their understanding of the environmental problem. However, the two main schools of thought, environmental economics and ecological economics, share similar limitations when it comes to recognizing the socially constructed dimension of both the economic system and the environmental crisis (Spash, 2011). These limitations have two important consequences: first, they hinder the conception of applicable solutions to the environmental crisis, in terms of social–political feasibility (van den Bergh, 2011); and second, they greatly narrow the scope of imagination when it comes to designing ingenious public policies. New institutionalist ecological economics approaches have been proposed which take into account the social dimensions of the economy–environment interface (Spash and Villena, 1999).[1] Although these approaches remain fragmented and heterogeneous (Ropke, 2005), an interesting proposition has recently emerged putting forward a social ecological economics (Spash, 2011, 2012a, 2012b). However, in my view, this proposition as well as those put forward by other institutionalist ecological economists would benefit from a more comprehensive framework for understanding

☆ I would like to thank my translators, Chau Nguyen and Ellen Murray, as well as my colleague Bernard Girard and the reviewers who generously shared valuable comments on my original manuscript.

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[1] Other scholars have sought to integrate the social dimension in ecological economictheorizing. See for example: Paavola and Adger (2005), Vatn (2005a, 2005b), Söderbaum (2000), Bromley (1991), Bürgenmeier Beat (1994), Norgaard (2007), Ballet et al. (2011).

http://dx.doi.org/10.1016/j.ecolecon.2014.06.012
0921-8009/

the social dynamics involved in the economy–environment debate. The aim of this article is to propose a new economic sociology of the environment, a sociological counterpart to Spash's Social Ecological Economics, in line with an emergent European trend of ecological economics (Douai and Vivien, 2009). Built on the actionalist theory and the regulationist approach, such theoretical framework provides a better understanding of the modernization path that societies are seeking to embark upon in order to address the environmental crisis (Mol and Sonnenfeld, 2000). It provides a new perspective of the economy–environment debate by devoting particular attention not only to the social dynamics but also to the self-production process of advanced societies (Touraine, 1977).

Before introducing this new approach, I will discuss the two main schools of thought, environmental economics and ecological economics, focusing on their problematization of the economy–environment dynamics and highlighting some of their limitations. I will then turn to emergent institutionalist approaches which have sought to introduce a social dimension in their analyses. While the Social Ecological Economics movement is mostly preoccupied by epistemology, interdisciplinarity and a value-based analysis of the economic system (Spash, 2012a, 2012b; Vatn, 2005a,2005b), another trend of the emergent socio-economic school which relies on the French régulation[2] theory aims to develop a more political understanding of institutional change. The regulationist approach proposes to link the economic and social spheres in a manner that fully recognizes how economic institutions are socially constructed and embedded. It therefore provides a useful framework for understanding institutional changes driven by the environmental movement in the economic sphere. I will then show how heterodox approaches can be enriched by the French actionalist sociology, depicting the transformation processes of the economic system. Furthering this idea, a new sociological theoretical framework will be proposed, which broadens the scope of possible means to incorporate ecological parameters in the economy. I will then briefly present the results of a study we conducted among economic and political leaders based on this theoretical framework. This study brings out the limitations of the solutions put forward by both environmental economics and ecological economics from a social point of view (Spash, 2011; Spash and Villena, 1999), notably concerning their social–political feasibility (van den Bergh, 2011). To conclude, I will make some remarks on the recent "green economy" concept — which has become the basis of modernization agendas — and its view of how the economic system must be reoriented to contribute to sustainable development.

2. Economics and the Environment: Bridging the Founding Gap?

Modern economics were founded on the hope that industrialization would emancipate society from the constraints of nature. At its heart lies the ideal of the industrial society: the production of goods in such abundance as to overcome the distribution dilemmas and limit the necessity of political arbitration. Nature is seen as an element to be mastered in order to fulfill this overproduction goal.

This split between nature and the economy was questioned by early economists, including Smith, Mill, Ricardo and Malthus.[3] As the environmental crisis reached a systemic level during the seventies and ecosystems are being undermined as a life support since then, nature could no longer be reduced to a question of scarcity. Economics then began to theorize the consequences of the dissociation by which the economic system seems disembedded from the biosphere. As Spash explains:

> Environmental economics arose, along with the growth in public awareness, as a direct response to [environmental problems] (…). By the late 1960s, the promise of material wealth for all and post World War II optimism in the abilities of science and technology were faltering. Boulding (1966) characterized the economy as being run like the Wild West [in contrast] with Earth as a closed system like a spaceship. Economic growth was seen as positively misleading in terms of the consequences for human society (Mishan 1969). The challenge was for a new approach to economics (2011, p. 348).

According to economists who are preoccupied by the environmental crisis, it is the blindness and disregard of ecological cycles and thresholds on the part of economics which are at the root of today's environmental crisis (Costanza et al., 1997, p. 17; Gómez-Baggethun et al., 2010). Ignoring ecosystemic constraints, the economy broke up nature into natural resources and developed an instrumental perspective of it. It did not care about the regeneration limits and carrying capacity of ecosystems which it considered as free inputs into the production system (Schnaiberg et al., 2002). The production system was conceptualized independently from nature, with no formalization of its interactions with the environment, as is illustrated, for example, by Hotelling's (1931) classic workin which natural resources are treated like any other wealth asset. As explained by Barry:

> In the history of economic thought (…), one thing stands out about the role of the natural environment: namely, its reduction to a set of resources to be exploited for human economic ends. From an economic point of view, the natural environment has instrumental value; that is, it is useful insofar as it can be exploited in fulfilling human wants.[4]
>
> [Barry (2007, p. 214)]

This new generation of economists interested in the environment sees the environmental crisis as the direct consequence of this conceptualization of the economy which has been blind to ecological parameters. They therefore hold that it is essential to rebuild the necessary link between the economy and the environment, and this is precisely what these scholars are committed to doing as illustrated by the statement of Costanza and Daly: "ecology and economics must be more fully integrated if either is to deal adequately with man's use of natural resources" (1987, p. 2).

This research agenda has developed into different schools of thought, whose propositions are intimately connected to the diagnosis of the ecological misunderstanding of the economic system. Spash (2011) provided an interesting historical perspective of these schools, showing how the first environmental economics school was followed by ecological economics, and how the two have evolved as distinct schools. Building on his analysis, as well as Jacobs' work and recent European typologies (Boidin and Zuindeau, 2006; Douai and Vivien, 2009; Douai et al., 2012; Figuière and Rocca, 2011; Godard, 2004, 2005), I propose a mapping of the different schools of thought wherein

[2] As suggested by one of our reviewers, we distinguish in this text "régulation" as the regulationist concept from the regulation understood in its ordinary meaning.

[3] As Douai and Vivien point out, this dissociation has become so ingrained that Barde and Gerelli noted in the introduction to their book *Economics and Politics of the Environment (1977)* that the expression "environmental economics" seems a paradoxical coupling (Douai and Vivien, 2009, p. 124).

[4] Building on Polanyi's writings, Barry offers an interesting analysis of the disembedding process of the emerging economic science: "For the market system to work, land, labour and capital had to be 'freed' or 'disembedded' from non-economic restrictions, customs and rules. In short, the industrial–capitalist system required that land, labour and capital be 'free' to move where they were economically required, and where the market dictated they should go. Another way of putting this is that these 'resources' in order to be resources in the sense the new economic system required, had to be seen as commodities, things that could be bought, sold and exchanged" (Barry, J., 1999. *Environment and Social Theory*. Routledge, London & New York, p. 134).

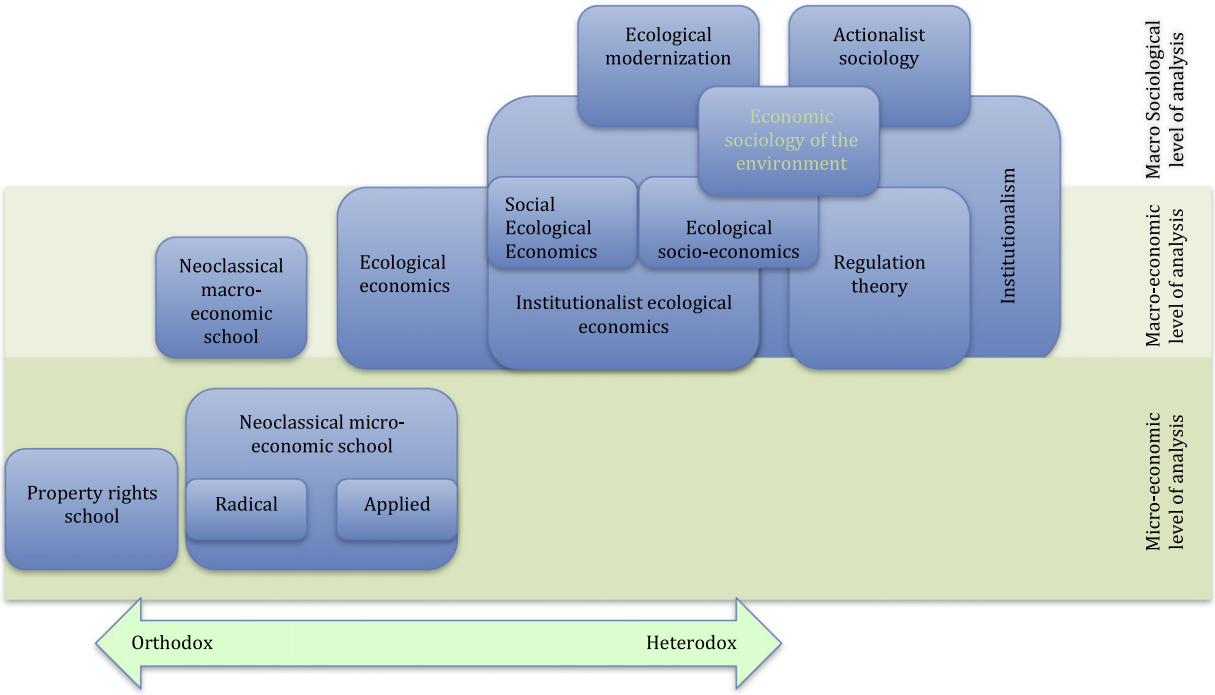

Fig. 1. Theoretical schools interested in the environment–economy dynamic.

their ideological roots are made explicit: these schools are presented from the more orthodox (left) to the more heterodox (right),[5] as well as in terms of their level of analysis (from the bottom to the top: micro-economic, macro-economic, and societal). This figure can be seen as a portrait of the present structure of the field, and as such can be read in light of Spash's attempts to illustrate its historical evolution and in the light of Douai et al.'s (2012) diagrams proposed to represent the field and its interaction with other schools (Fig. 1).

On the more orthodox side, the property rights school postulates that the environmental crisis is the result of an inappropriate structure of property rights of the environment.[6] Inspired by a Coasian perspective (Coase, 1960), this school of thought proposes that the environment be privatized so that its owners can protect and take care of it. It does not rely on any state intervention beyond an initial privatization, assuming that, thanks to an appropriate structure of property rights, an interindividual dynamic will lead to environmental conservation. This privatization approach, which has been criticized from an ethical as well as a theoretical and methodological points of view, remains marginal (Jacobs, 1994, p. 68).

The neoclassical school, which shares some ideas with this latter approach and acknowledges *The Tragedy of the Commons* thesis (Hardin, 1968), postulates that the environment is overexploited because it is undervalued. The environment is indeed a typical example of a common good: as such and following Pigou's argument (1920), state intervention is required in order to adjust prices to reflect its real value or cost. This approach does not suggest that there is a market dynamic which has to be revealed, but rather that a market dynamic can be simulated in order to better manage natural resources. This is done by internalizing environmental costs, i.e. by adjusting prices to reflect the true cost of goods and thus orient individual preferences in markets.

The neoclassical school can be divided into the two micro-economic branches of environmental economics, which I will call radical and applied, and one macro-economic branch. First, I establish a distinction between the micro and macro branches of the neoclassical school so as to highlight the early macro-economic work on the environment, in opposition to which ecological economics and its criticism of growth has notably been developed. This distinction also clarifies the lines of debate between the different approaches (orthodox/heterodox–micro/macro), keeping in mind that, as illustrated by Galbraith in the *New Industrial State*, the micro/macro distinction is intertwined with the orthodox/heterodox debate (Galbraith, 2007, p. xxvii).[7] Second, based in part on the seminal work of what is often referred to as the London School (Douai and Vivien, 2009; Lauriola, 1997),[8] the micro-economic branches make up the well-known environmental economics global school. This decoupling of the radical and applied schools is inspired by Jacob's distinction of two 'steps' in neoclassical reasoning, i.e. the choice of a depollution level, followed by the design of public policies for environmental remediation or prevention. It is more accurate to consider them as two separate branches given that the applied branch is often disconnected from the assumptions of the radical approach: whereas the radical branch fully subscribes to the theory of external costs in explaining the economic–environment dynamic, the applied branch is more interested in the efficiency of market instruments as public policy tools.

More precisely, the radical approach considers that there is an optimal level of pollution abatement which can be calculated by mobilizing traditional micro-economic tools.[9] Referred to as hedonic pricing and contingent valuation, these willingness-to-pay or willingness-to-accept methodologies lead to what is presented as a Pareto optimal level of pollution abatement. Conceptualized exclusively in economic terms, this optimum is obtained by crossing a supply curve (cost of abatement equipment) and a demand curve (total value of environmental goods as estimated based on willingness-to-pay methodologies). This fictitious

[5] The orthodoxy/heterodoxy classification reflects the anchorage of each school in the theoretical framework of more general economic schools.

[6] See for example Anderson, T., Leal, D., 1991. *Free Market Environmentalism*. Pacific Research Institute for Public Policy, San Francisco.

[7] In the foreword of his book, Galbraith explains how the distinction between micro- and macro-economics did not exist prior to the Keynesian revolution. It developed not only with an aim to analyze micro-phenomena, but also to propose an alternative understanding to macro-economics by removing any political dimension of analysis.

[8] This school includes economists from the London Centre for Environmental Economics, namely Pearce, Barbier, Markandya and Turner.

[9] See *Journal of Environmental Economics and Management* or *Land Economics*; and, for more specific examples, see Cummings et al., 1986; Rowman et al., 1987.

market establishes a new price for environmental goods which prevents their overuse.

This approach has been criticized on the basis of three main arguments. First, it has long been recognized that the value of common goods cannot be obtained through willingness-to-pay methodologies (Jacobs, 1993, 1994). More importantly, however, the level of pollution abatement resulting from this approach is disconnected from the ecological dynamics and does not integrate the environmental thresholds or cumulative or irreversible impacts in its reasoning. Lastly, Pearce has demonstrated that, over time, an economic optimum inevitably leads to an ecological suboptimum, i.e. environmental depletion (1976). In conclusion, the radical neoclassical approach suffers from the incapacity of micro-economic formalization to integrate ecological constraints and the ecological dynamics, and thus to address environmental degradation.

The applied branch of the neoclassical school recognizes these limitations and points to the need for a political decision based on scientific data to establish what level of pollution abatement should be reached. However, it proposes using the market to enforce this political decision, by designing new economic instruments to complement traditional environmental protection regulations.[10] This school insists on the superiority of economic instruments such as those based on "user and polluter pays" principles, including systems of tradable polluting permits over command and control regulations. Economic instruments, they argue, are more flexible and less costly because they use the market dynamic as leverage. However, analyses have shown that, in numerous cases, economic incentives have not proven to be more efficient or less costly than traditional regulation, and face similar opposition from the social actors who are required to change their behavior (Jacobs, 1993, pp. 154–155, 1994, pp. 82–85). Moreover, the régulation analysis proposed by the applied neoclassical school is misleading. Public policies must be shaped for each issue, based on its specificity, the nature of the behavior at stake and the effectiveness of a particular tool in a given context. Indeed, rather than offering an alternative to regulation, economic instruments actually constitute a type of regulation which aims to supplement other measures used by governments to implement public policy. As such, they face the same challenges as any other public policy tool: being embedded in complex social dynamics, their ends and means are the result of a compromise between social actors in conflict, sometimes at the expense of the issue at stake. Godard and Salles have shown how the development of public policy is the result of a complex dynamic between the public, the regulator and regulated agents, wherein innovation and competitiveness play a decisive role (Godard and Salles, 1991). Lastly, environmental issues cannot be reduced to the promotion of desirable behaviors relying on incentives provided by economic instruments or other tools. They are also a matter of prohibition and criminal sanction which require traditional norm regulation.

To sum up, environmental economics has stressed the interdependence between economy and environment. Refusing to reduce nature to natural resources or to a sink for pollution, it proposes rebuilding the concept of the environment by recognizing its multifunctionality: the environment additionally provides natural goods and, more generally, a life support function. Therefore, this school rejects the hypothesis of the unlimited substitutability of the different forms of capital suggested by the neo-classical macro-economic school, as will be seen below. However, at the same time, its analysis relies on methodologies which seek to measure environmental values in monetary terms. This confines it to a formalization that goes hand in hand with the neoclassical formalism from which it proposes to break free (Douai and Vivien, 2009; Lauriola, 1997; Spash, 2012a, 2012b).

The last branch of the neoclassical school is independent from the first two and focuses on the macro-economic dimension. It proposes a conception of production and development that recognizes natural capital input, but without acknowledging that the latter can be a constraint to development. In an effort to integrate natural resources into the production function, Solow–Stiglitz's variation of the Cobb–Douglas production function postulates that every output necessarily results from a combination of capital, labor and resources, without precluding the possibility that the amount of the latter may be infinitely small (Georgescu-Roegen, 1971; Daly, 1990). In this macro-economic neoclassical approach, sustainable development only requires that the total amount of capital remains constant, and authorizes substitution between the different forms of capital (natural, financial, manufactured) on the basis of an optimal path of resource depletion (a scenario referred to as weak sustainability[11]).

This approach, like that of the environmental economics school, has been openly criticized by the ecological economics school mainly because both methodologies prevent a real understanding of ecological dynamics. Such methodologies reframe environmental issues in economic terms so that they fit within standard economic tools and rationality such as market equilibrium, preference utilitarianism, and optimal control modeling (Spash, 2011, p. 348). The American school of ecological economics has emerged as an inter-disciplinary approach aimed at better linking the economic and ecological sciences (Costanza and Daly, 1987; Daly, 1993, 1999). Considering, in particular, that environmental economics economizes the environment more than it ecologizes the economy, the ecological economics school proposes a different path towards a broader transdisciplinary synthesis (Costanza et al., 1997, pp. 72).[12] In particular, its diagnosis of today's environmental crisis stresses the divergent formalizations of the two sciences, economics being linear, unlimited and deterministic, while ecology is circular, limited and chaotic. The American school thus proposed a radical revision of macro-economic formalism, and a fundamental break with the core principles of the capitalist system. Explaining that a sub-system cannot indefinitely grow within a closed system, it emphasizes the problem of economic growth and worries about the size of the economy, promoting zero or negative growth (degrowth) in order to confine it within ecological limits (Latouche, 2009; Martinez-Alier et al., 2010).

However, given that the economy and ecology differ in nature, the system argument might be misleading as it relies on a determined ecological intensity of the economy.[13] Indeed, thanks to dematerialized services and products, i.e. goods requiring less or no natural resources and causing less or no environmental pollution, the economy can grow without leading to additional stress on the environment. On the other hand, a stable economy which exceeds the carrying capacity of the environment would lead to the latter's depletion. Therefore, growth might be less at the heart of the problem than the industrialist model which imposes a specific relationship between the production system and the environment (Berger, 1994), although this interaction can be worsened by growth. Nevertheless, at the present time, only totally dematerialized economic growth could possibly be compatible with environmental conservation, and such growth, moreover, would have to reduce the current ecological intensity of the overall economic system.

[10] See Pearson, M. and Smith, S., 1990. *Taxation and Environmental Policy: Some Initial Evidence* (IFS Commentary No.19). The Institute for Fiscal Studies, London. See also the Sustainable Prosperity Network which started an important Canadian research program in 2008 on market-based approaches to environmental policy: http://www.sustainableprosperity.ca.

[11] On the contrary, strong sustainability does not allow substitution, or only to a limited extent.

[12] The idea of ecologizing the economy versus economizing the ecology was proposed by Colby (1990, p. 7) and later used by several scholars to point out the methodological challenges of an economic analysis of environmental issues which tends to distort environmental reality by conceptualizing it in terms of economic objects. See, for example: Gomez-Baggethun, 2010; M'Gonigle, 1980.

[13] Ecological intensity of the economy can be defined as the ecological footprint per unit of GDP (York et al., 2010).

The economic dematerialization hypothesis relies on technological progress which can reduce the ecological intensity of both the production and consumption components of the economy. However, taking into account demographic trends and consumption growth rates, Ehrlich and Ehrlich (1990) explain that reducing the environmental pressure by half would require an unrealistic 91% dematerialization effort. Moreover, technological development, which is embedded in social and economic dynamics, is a complex process which cannot be viewed as a fully controllable tool. It is therefore very optimistic to base ecological remediation solely on technological development, and the problem of growth firstly pointed out by the American school thus remains.

To sum up, the two main schools which have tried to reconcile the economy and the environment, namely, environmental economics and early, mainly American ecological economics, propose interesting critiques of the current configuration of our economic system. However, at the same time, they show limits in their diagnoses as well as in their methodologies and their misunderstanding of the political economy leads to naïve public policy proposals (Spash and Villena, 1999, p. 1). Indeed, the most important flaws of these works stem from the fact that they ignore or neglect the socially constructed nature of the economy and the necessary social mediation of the environmental crisis. This has led Spash to direct the same criticism at both environmental economics and ecological economics, in spite of the interdisciplinarity promises of the latter (Spash, 2011, 2012a, 2012b). According to Spash (2011) and Anderson and M'Gonigle (2012), ecological economics has missed its heterodox agenda, and therefore its capacity to reframe the economy in a sustainable manner.

> Environmental economists were taken along with the political turmoil of the 1960s but failed to realize the revolutionary potential they once saw in their field. That failure was a reflection of the power that lies in orthodox economics to control debate, forgive heretics and expel blasphemers.

> Ecological Economics as a modern movement started at the basic level of trying to combine models from two disciplines, an approach popular in America. While linking ecology and economics was an interesting initial step, the narrow confines of model interactions and multidisciplinary collaboration failed to advance the movement beyond the orthodox. (…) Unfortunately, the importance of social, political, ethical and institutional factors is something that ecologists are not trained to detect and orthodox economists are trained to neglect.
>
> [Spash (2011, p. 364)]

Ideology, institutions and political economy are precisely the subject of a more recent school of thought, referred to as social ecological economics, socio-economic school of ecological economics or institutional ecological economics, which seeks to provide an alternative to the dominant schools of thought on the economy and the environment (Paavola and Adger, 2005; Soderbaum, 1992; Spash, 2011; Spash and Villena, 1999, p. 2; Swaney, 1988). However, "there has been a tendency for the institutional literature to center upon presenting criticisms of the neoclassical approach, rather than suggesting constructive alternatives" (Spash and Villena, 1999, p. 26). Moreover, although some core theoretical foundations and basic elements can be drawn from the institutionalist approach (Soderbaum, 1992; Spash and Villena, 1999; Swaney, 1988), observers complain that there is, to date, no unified and integrated institutionalist economic approach to the environment (Ropke, 2005), as its scholars have never provided a comprehensive analytical framework for understanding the ecological modernization of our societies.

It is important to clarify how "ecological modernization" is understood in this research. Ecological modernization refers here not to a normative or political proposition, but to the factual process by which environmental issues interact and transform social and economic institutions.[14] In line with Mol and Spaargaren (2000), ecological modernization as a political programme which proposes a specific path for the ecological reform of the industrial society, must be distinguished from and the ecological modernization of economic institutions as a process to be observed and described, in other words as a research object. The goal of this research is to understand how post-industrial societies are integrating today's new environmental conditions, given that their evolution is built upon successive social compromises, or in Touraine's words, that society is produced through social struggle. Thus, the social process of ecological modernization is analyzed by focusing on the specific modernization agendas proposed by social actors.

It is unclear whether such an integration will occur, since the more general approach of institutionalism is quite diverse and has evolved through a pluralization process (Rizza, 2008). Moreover, although they share a focus on the importance of institutions in explaining individual and social behaviors, as well as on the relationship between action and structure, the different branches of institutionalism do not even refer to the same concepts and definitions of institutions (Dequech, 2002; Desreumaux and Hafsi, 2006).[15] Some attempts have been made to synthesize these different approaches and a dialog has sometimes led to a degree of convergence. However, despite some indisputable common ground concerning the social nature of economic transactions and institutions (Postel and Sobel, 2009), there remains an epistemological heterogeneity that prevents further integration of what can be seen as competing paradigms (Theret, 2000).

It is thus not surprising that the institutionalist approach to the ecological economics research agenda seems diverse, although unified by a shared rejection of orthodoxy and an adherence to methodological pluralism. Of course, the unified heterodox ecological economics called for by Spash, Özkaynak and others would be welcome insofar as it would constitute a stronger voice in response to the orthodox leanings of ecological economics. However, it is at least as important to understand the differences between the emerging institutionalist schools concerned by the environment in order to see how this field is becoming structured.

In their analysis of the ecological economics school, Douai and Vivien propose a distinction between an ethical and a political perspective of institutionalist ecological economics (2009). The ethical perspective, which brings together authors such as Spash (2011, 2012), Vatn (2005a, 2005b), Paavola and Adger (2005) and O'Neill (1997), emphasizes the social construction of institutions, but develops a normative analysis suggesting how these institutions should be rebuilt. Slavíková et al. (2010, p. 1368) summarize this approach as follows: "The change of institutions or the design of new institutions must be done after careful mapping of a particular situation (especially knowing the ecological, economic and social characteristics of the problem) and with the use of open social dialog (Vatn, 2005a, 2005b)." This normative posture hinders the postulate of the social construction process of institutions, which requires an understanding not so much of how institutions *should* be built based on environmental and moral standards, but how they actually evolve in the context of an increased environmental consciousness on the part of the population. Thus, in contrast with this

[14] Economic institutions are understood here as the market, the corporation and more broadly economic rules, be they the result of routines or law. This being said, one should note that various schools of thought hold widely varying views on what should be included under the notion "institutions".

[15] Following its earlier formalization as what is referred to as "old institutionalism" (Veblen, Commons), a new branch of institutionalism developed in the field of economics under Ronald Coase, Douglass North and Oliver Williamson, and another in organizational sociology under John Meyer, Richard Scott, Paul DiMaggio and Walter Powell and another in economic sociology under Mark Granovetter, Neil Fligstein, Richard Swedberg and Victor Nee (Nee, 2004). To these must be added the French schools, particularly the MAUSS (Alain Caillé and Ahmet Insel), the Conventionalists (Olivier Favereau, François Eymard-Duvernay, Robert Salais and Laurent Thévenot) and the Regulationists (Michel Aglietta, Robert Boyer, Bernard Billaudot and Alain Lipietz).

ethical approach, Douai and Vivien argue that institutional change must be understood in light of social relations and dynamics (2009, p. 145). They propose that social conflict and politics must also be considered in order to better envision institutional transformation. Their hermeneutic posture shows that the challenge of developing a fruitful perspective on the interrelations between ecology and economics is not so much a matter of interdisciplinarity, which poses specific epistemological and methodological concerns (Kapp, 1950; Spash, 2012a, 2012b). It is, rather, a question of understanding the different levels of analysis, considering that the environmental issue interweaves different dimensions of reality which must be connected or put in dialog more than synthesized, as suggested by the ethical branch of ecological institutionalism.[16]

In this respect, the original idea of integrating ecology and the economy, proposed by ecological economics, appears to have been misleading, not only because it proposed to synthesize incommensurable dimensions, but also because it missed the social dimension as a specific and autonomous level of analysis. As is well illustrated by historical reviews, this is not surprising since economics and sociology are often competing paradigms for explaining social life (Lowe, 1935). From an orthodox point of view, social dynamics are entirely explained by economics through modelling of individual interactions. Therefore, an understanding of social dynamics does not require any further sociological analysis. In contrast with this perspective, institutionalist and heterodox economics pose economic institutions as social constructs, acknowledging that economic transactions are social relations of a specific kind. They are embedded in cultural and social contexts from which they derive their significance, as well as in the legal institutions which enable them. Following this reasoning, by recognizing that economic institutions are social constructs, the aim of a heterodox economics of the environment is not so much to integrate the economy and the environment, as first suggested by ecological economics, but rather to understand how a specific social concern, the environment, is leading to an institutional transformation of the economic system. Thus, instead of connecting the economy and the environment, the challenge of an institutionalist approach of ecological economics is to understand how the environmental concerns of society are reshaping economic rules and institutions.

As explained by Desreumaux and Hafsi (2006) however, "The fact that the original neo-institutional works focused more on convergent states than on processes explains the (relative) discretion of neo-institutional theory on the question of institutional change" (p. 9). In this respect, as a distinctive form of institutionalism (Billaudot, 2009), French régulation theory provides powerful insights regarding the transformation processes of economic institutions. As it theorizes how social dynamics are the core to structural changes in the economic system, it could be used as a basis for connecting the social and economic spheres so as to better understand institutional transformations brought about by the environmental crisis.

3. Towards a Social Bridge: Building on Regulationist and Actionalist Analytical Frameworks

In clear contradiction with the naturalist view of classical economics and as discussed above, the institutionalist approach acknowledges that the economy is socially constructed (Becker and Raza, 2000); this is why it offers a more interesting perspective for an analysis of the environmental crisis than that offered by the environmental and certain strands of ecological economics (Douai and Vivien, 2009). The challenge is thus to explain how the economy is constructed, and how it changes with the evolution of society, particularly with the rise of environmental concerns. As illustrated by the writings of Zuindeau (2007) and Gibbs (1996, 2006, 2009), French régulation theory provides a framework for understanding the transformations brought about in the economic system by the social struggle and dynamic, and more specifically, by the rising environmental consciousness of social actors.

Building on an analysis of the successive economic crises, Régulationists have proposed a powerful conceptualization of capitalist eras embedded in changing social compromises. Based on the conjunction of different institutional forms, each type of capitalism contains its own crises through which it evolves from one type to another (Boyer and Saillard, 2002). Therefore, as a metasystem, the capitalist production mode has historically consisted of various development models resulting from the combination of a specific accumulation regime and a régulation mode, based on a shared vision of progress carried by a hegemonic social group. The accumulation regime designates the distribution of surplus between economic sectors and social classes, while the régulation mode ensures the reproduction of social relations and steers behaviors to ensure compatibility with the corresponding accumulation regime.

The régulation mode relies on the conjunction of institutional forms, each embodying a social compromise and enacted by the archetypal regulation of the State. Therefore, social institutions result from compromises between social actors.[17] As expressed by André (2002, p. 95):

> Institutionalised compromises result from situations of tension and conflict between socio-economic groups over a long period, at the conclusion of which a form of organisation is established, creating rules, rights and obligations for those involved. Institutionalised compromises act as frameworks in relation to which the population and groups involved adapt their behaviour and strategies; their founding principles remain unchanged over the long term. These types of arrangements prove to be particularly resistant to change and exert a decisive influence over public interventions.

A ruling social group is built based on an alliance between social actors, and becomes hegemonic when it succeeds in presenting the policy it proposes as being consistent with the general interest (Touraine, 1978, p. 163, 167; Lipietz, 1989). This implies the dissemination of a specific vision of progress, i.e. the existence of a social paradigm based on a set of shared social representations and values.

> The difference with the dominated class is that the ruling class does not bring its ideology into conflict with an order, but gives its ideology the features of the order. Because it is dominant, it speaks for the whole, for the general interest or the meaning of history. But this is not pure fiction. A ruling class effectively takes charge of the historicity of a society while simultaneously reducing it to its own interests.[18]
>
> [Touraine (1978, p. 167)]

There are several reasons why a capitalist development mode can go into crisis. However, the originality of the regulationist approach is its focus on the endogenous character of capitalist crises. According to Regulationists, crisis and growth periods are two sides of the same coin: the crisis expresses the original conflictuality of social relations that is otherwise contained during growth periods (Lipietz, 1984, p. 8). The economic crisis which emerged in the 1970s revealed precisely the breakdown of the Fordist compromise between workers and capitalists supported by the welfare state. The industrial paradigm has simultaneously been challenged by social actors calling into question a vision of social progress based mainly on science and technology,

[16] Which refers to the institutionalist branch of ecological economics.

[17] For Regulationists, the central notion of institutionalized compromise is anchored in the social struggle whereas Conventionalists study the emergence of shared rationality or behavioral regularity. As Bertrand explains: "while the regulationist approach emphasizes the results of collective agents' negotiations (cf. the concept of 'institutionalised compromise') above all, conventionalists are primarily interested in the methods of constructing procedural rationality in an uncertain universe" (Bertrand, 2002, p. 84).

[18] Translation taken from Gendron, 2001, p. 80.

consumption, and an administrative redistribution of accumulation (Bélanger and Lévesque, 1991).[19] As a way out of this crisis, the regulationist approach has anticipated a new social compromise which would give rise to institutions leading to a new capitalist production mode. From a regulationist point of view, such a compromise is unavoidable, first, because a dominant actor cannot wholly impose its view on others and must therefore make some concessions in order to reach its private objectives, and second, because without a compromise, social actors would consume themselves in a perpetual struggle (André, 2002). The institutional compromise establishes a set of rules which orient and guide social and economic action for a given period. Over this period, unsolved tensions grow to such a point that they end up destabilizing the institutional compromise (Lipietz, 1984; Touraine, 1977).

Thus, the work carried out by Regulationists over recent decades has sought to foresee the emerging capitalist development mode, which Aglietta has described as patrimonial capitalism (equity-based capitalism) (Aglietta, 1999) and which is characterized by the generalization of employee shareholding in a finance-led capitalism. However, as noted by several scholars, the Regulationists' analysis focuses almost exclusively on wage relations, considering the social dynamic from a Marxist perspective (Bélanger and Lévesque, 1991), and in most cases ignoring the environmental crisis (Gibbs, 1996). By reducing the social dimension to a labor issue, such an analysis cannot take full advantage of its analytical framework when considering the current social and economic transformations. Contrary to what Marxist theory suggests, the social conflicts underlying the present crisis go beyond labor and are not reduced to production relations.

While the environmental crisis cannot be viewed as having triggered the economic crisis of the 1970s, it can be assumed that the new post-Fordist social compromise will include an environmental dimension as the environmental crisis continues to worsen and deeply challenges the industrial social paradigm (Lipietz, 2002). Ecological disruption translates into new costs for social actors while the global environmental crisis modifies their relative positions and imposes new imperatives to be taken into account in private and public decisions. Therefore, a new social compromise would acknowledge the current state of the environment and provide a corresponding framework for mediating human–nature interactions (Douai and Vivien, 2009; Postel et al., 2009).

However, as was seen earlier, in order to tackle this new social compromise, the regulationist framework, which has been mostly centered on capitalist–workers relations from a Marxian perspective, must be enriched with other theories addressing the broader social dynamic, particularly regarding the environmental crisis. Following this path, I do not build on the proposal, put forward by some scholars, to directly integrate the environmental issue into the regulationist framework by adding, for example, a sixth institutional form to characterize the ecological intensity of an accumulation regime (Becker and Raza, 2000; Görg, 2000). The environment cannot be reduced to one institutional form because the ecological intensity of an economy is determined by each institutional form already provided by the regulationist analytical framework, and by its joint action with other forms (Zuindeau, 2007, p. 287; Douai and Vivien, 2009). This is why the environmental crisis must be examined at a more general level, and thus integrated into the régulation theory by capitalizing on the evolutionary dynamic it envisions through the link it builds between the economy and society. Indeed, the environmental crisis and challenge play on the very paradigm on which social compromises are based. However, at the same time, neither do I follow Lipietz, who envisions the post-Fordist development model as being built upon a new compromise *with* nature (Lipietz, 2002, p. 224). A social compromise necessarily involves social actors (Touraine, 1981), and therefore, the human–environment relation cannot be understood as a social relation. What should be envisioned, rather, is a social compromise *about* nature, the environment being a social field around which social actors struggle to shape the organization and structure of social life. Therefore, the post-Fordist development model would be based on a new compromise about nature, on the basis of which new interaction patterns between humans and the environment would be structured.

In order to extend to the environmental question the link between the economic and social spheres proposed by the régulation school with regard to labor, it is necessary to understand the social dynamic that is specific to the environmental crisis. Contrary to economic theories on the environment which conceptualizes this crisis in terms of presumably objective facts and data, a sociological approach insists on the social construction of the environmental crisis. This construction, wherein society and science are interwoven, results from a complex and conflictual dynamic between social actors. This is why the rise of environmental concerns and the prioritization of environmental issues cannot be understood as a direct and linear consequence of the material depletion of the environment (Berger, 1994). It is the process by which the environmental crisis has been progressively recognized by social actors as a central issue for human societies that must be understood. This leads to a new research field which is interested not only in the environmental movement, but also the broader social movements of the late 60s and early 70s which are reflective of the emergence of a new type of society: the post-industrial society.

The environmental movement analyzed by Touraine, Melucci, Offe and Eder is typical of the post-industrial society wherein the social struggle is organized around historicity, i.e. the cultural orientation of society by conflicting social actors.[20] In Touraine's view, society is not a reproduction system, but rather the result of a social conflict process which leads to the construction of successive institutions. The idea of a social compromise leading to institutions imposed by dominant actors, but accepted by others for a time, is thus central to Touraine's actionalist theory. From this sociological perspective, which aims to analyze global transformations of the industrial society, new social movements reflect a new type of society, a new configuration of the social and political order. The specificity of the collective action that has emerged since the 1970s has offered an opportunity to build a new conception of society as well as a new sociology, a sociology of action, called actionalism (Touraine, 1978). In Touraine's view, this new sociology must abandon the study of structures and concentrate on social action because society is not only a reproduction of a given structure, but a conflictual self-production. Thus, the concept of society as the result of a social process, i.e. the self-production of society, rejects a conceptualization of society as a stable structure, as explained by Outhwaite (1996, p. 252):

> Society is a product of collective *work*, and like other forms of work this is increasingly a matter of conscious decision and organization, rather than an immediate response to an external stimulus. 'The more societies deserve to be called industrial, the more the organization of work and economic life appears as the result of a political process and not a natural necessity.' Hence, the need for a shift 'from the study of social problems to the study of historical action, from a sociology of society to a sociology of action' (1965, p. 13–14). To treat society as a given 'framework' is to set up a sterile opposition between the exigencies of a situation and static human 'needs,' whereas, in Jean-Paul Sartre's words, 'simple inspection of the social field should have revealed that a relation to goals is a permanent structure of human activities and that it is on this basis that real human beings assess actions, institutions or economic organizations'

[19] This is clearly echoed by Beck's analysis of the Risk Society (Beck, 1992, p. 200 and following).

[20] Historicity is synthesized by Buechler as "the symbolic capacity of social actors to construct a system of knowledge and the technical tools that allow them to intervene in their own functioning, act upon themselves, and thereby produce society" (Buechler, 2000, p. 6).

(Sartre, 1960, p. 98; Touraine, 1965, p. 22-23).
[Outhwaite (1996, p. 252)]

Therefore, it is social actors who, through their struggle to control historicity, shape the social structure and organization. By referring to the various types of work society applies to itself, historicity embodies a form of knowledge, investment and culture. The knowledge mode reflects the relation a society entertains with its environment. The investment mode concerns the allocation of unconsumed production and orients economic organization. And the cultural mode designates how social creativity is conceived.

> Society *is not what it is but what it makes itself be*: through *knowledge*, which creates a state of relations between society and its environment; through *accumulation*, which subtracts a portion of available product from the cycle leading to consumption; through the *cultural model*, which captures creativity in forms dependent on the society's practical dominion over its own functioning.
> [Touraine (1977, p. 4)]

The post-industrial society is fundamentally distinct from the industrial society. First, it is based on a different investment mode, which aims at transforming the purpose of production management, in addition to shaping consumption, distribution and organization. Second, its cultural mode is more reflexive. Lastly, by recognizing that it is not embedded in a determinist process but rather self-produces itself, its knowledge mode leads to the idea that a society is responsible for itself. These latter two features are echoed by the concept of reflexive modernity proposed by Beck, Giddens and Lash (Beck, 1992; Beck et al., 1994).

The emergence of a new generation of social movements in the late 1960s showed that the central contradiction of the historical system of the industrial society (capitalists versus workers) had moved to a new contradiction specific to the post-industrial society: technocrats versus users. However, building on Touraine's conceptualization of the post-industrial society, Melucci points out that its specificity in fact relies not only on a new antagonism, but also on the form of this antagonism, which is no longer dual. Social action is now structured through a plurality of social movements rather than two main social classes (Melucci, 1991, p. 154), although this new structure is juxtaposed with the traditional bipolar one.

This understanding of the social dynamic is radically distinct from the resource mobilization paradigm which views social transformation as the institutionalization of social actors and their interest in a static political system.[21] New social movements, rather, pose a challenge to the institutional order by politicizing new themes at the frontier of public and private spheres, formulated as non-negotiable issues, by undefined actors engaged in universal causes. It is indeed misleading to refer to an institutionalization process, because these new social movements transform the very nature of public space. More than being potentially institutionalized, they renew the institutionalization process: "Institutionalizing social movements has led to effects that are changing the institutional system itself" (Eder, 1993, p. 17).

The interest of these analyses is that they recognize that social movements are challenging the social order. While the resource mobilization paradigm conceives collective action within a given socio-political structure as a narrow battle of interests, the actionalist perspective views social movements as a constituent element of social transformations. Cohen explains Touraine's conceptualization as follows:

> The meaning of collective action is thus redefined. Action now refers to the capacity of human societies to develop and alter their own orientations — that is, to generate their normativity and objectives. An action is *social* only if it is normatively-oriented and situated in a field of relations that includes power and shared cultural orientations. A social *movement* involves a double reference to cultural orientations and social relations, opposed social projects and contested structures of domination. Therefore, the social field that is contested by movements cannot be conceived as a battlefield for which a military model of action (strategy) is appropriate (1996, p. 185).

This does not mean that the resource mobilization paradigm is not relevant, but its analysis focuses on what can be called an organizational level, i.e. the interactions taking place within the system, whereas actionalist theory describes the deeper social transformations brought about by new social movements which transform the institutional system itself. I would argue that the environmental crisis is a historic issue, an issue at the heart of the reconfiguration of the social relations inherent in the emergence of a post-industrial society. Therefore, it must be understood at a historic and institutional level, rather than analyzed only at an organizational level in terms of conflicting interests (Touraine, 1981).

Being more comprehensive than the resource mobilization paradigm, the actionalist perspective is thus congruent with the regulationist approach, as illustrated by Bélanger and Lévesque's (1991) analysis. The link between the economic and social spheres postulated by Regulationists finds an echo in Touraine's structural distinction of social action, which subjects the organizational level to the institutional order, which is itself subject to social struggles and compromises.

In contrast with the neoclassical perspective, these two analytical frameworks (regulationist and actionalist) see institutions as the result of social compromises between dominant and dominated actors; and they insist on the fact that social conflict is never entirely solved by these compromises. Tensions remain which will, over time, lead to the breakdown of the compromise on which institutions have been built (Lipietz, 1989; Touraine, 1977). The social régulation and crisis concepts put forward by Regulationists are echoed in Touraine's idea of the reproduction and self-production of society: a reproduction of domination relations which is, however, accompanied by the production of society through the struggle social actors are engaged in to control historicity. The accumulation regime is similar to the investment concept used by Touraine to define societies' specificity. For its part, the historicity concept can be compared to the social paradigm concept proposed by Regulationists, and by Lipietz in particular. As such: "Historicity is an action of society on itself, but society is not an actor; it has neither values nor power. Values and norms belong to the actors acting within the field of historicity, to the social classes" (Touraine, 1977, p. 60).

In light of this socio-economic framework, the economic analysis presented earlier, which considers the environmental problems merely in technical terms, seems to be confined to the organizational level, and is thus unable to tackle the path through which social actors will transform institutions while facing the environmental challenges. These analyses overlook the social process through which the economic system as an institution will be reframed. Understanding the ecological modernization of the economy requires considering the social dynamic through which this modernization will be enacted. It is at the social level that the structural transformations which will frame the new rules of the economic game, i.e. organizational practices, can be understood. However, we must also bear in mind that behind environmental conflicts, social actors are battling to control historicity, as well as to gain a better position in political and organizational decision-making processes. The environmental crisis presents an opportunity to claim new decision-making power in the context of more democratic governance. At the same time, the environmental crisis as a material fact

[21] In direct response to Olson's paradox that addresses the problem of free riding behaviors, the resource mobilization school aims to explain why and how individuals engage in collective action. Having originally focused on a highly economic paradigm (McCarthy and Zald, 1977), this school has progressively integrated more sociological and historical dimensions (Oberschall, 1973; Tilly, 1985).

should translate into burdens that will lead to new conflicts or deepen existing social conflicts.

If we acknowledge the idea of a social compromise, by which a dominant actor will impose its policies but also make concessions, it seems particularly fruitful to look at the social representations of the environmental crisis held by the elite, as well as the solutions it proposes.[22] By understanding these social representations, it is possible to foresee, to a certain extent, the dominant paradigm on which a new compromise might be built, and therefore the path that ecological modernization might take. Whereas the environmentalist movement has been widely studied, the elites' point of view on the environmental crisis remains mostly unexplored. By focusing on the perspective of this specific social group, I will attempt to address Touraine's ambition to complete the analysis of new social movements through a better understanding of the ruling class (Touraine, 1978, 1981). However, and especially, by analyzing not only the elite's social representations of the environmental crisis, but also of the economic organization of society and progress, the hope is first to anticipate the new compromise and the path that the ecological modernization process will take.

4. Path of Ecological Modernization Embedded in the Economic and Political Elite's Social Representations

The environmental crisis is the locus of a confrontation between environmentalists and the elite (Sklair, 1994).[23] But a certain fraction of the ruling class is aware of the environmental crisis and rather than denying it, proposes solutions through a new environmental discourse distinct from that of the environmentalists: "The environmental movement no longer dominates the discourse on the environment" (Eder, 1993, p. 8). Nevertheless, the ideal of progress inherited from the industrial era is deeply challenged by environmental depletion and the need for conservation as opposed to limitless transformation of the natural environment (Beck, 1992, p. 200).

However, as explained by Sklair, while:

> (…) a growing body of opinion (…) sees the environmental crisis exposing contradictions in the inner logic of industrial (if not capitalist) societies…
>
> Clearly, the dominant forces in the global capitalist system have no option but to believe and act as if this contradiction can be resolved by a combination of economic–technological, political and culture-ideology means.
>
> [Sklair (1994, p. 220–221)]

This suggests a window for a new social compromise about nature, which we have attempted to grasp through analyses of the economic and political elite's social representations.

To this end, we conducted studies among business executives and elected Members of the National Assembly, the provincial legislature in Quebec (MNAs), as representatives of the ruling class, seeking to understand their social representations of the environmental crisis, but also more generally their worldviews.[24] Our aim was to grasp the possible configuration of a new social compromise, given that, as maintained by Touraine, Eder and Sklair, such a compromise should be imposed by the ruling class on the basis of a certain vision of progress and society. More specifically, we also wished to test the propositions made by environmental and ecological economists concerning the likely ecological modernization agenda implied by these social representations.

We conducted forty face-to-face semi-structured interviews, each lasting approximately an hour and a half, investigating how each of these members of the elite defined and perceived the State, the market and the firm, but also the environmental crisis, pressure groups and governance.[25] The questions posed to the interviewees were formulated in a simple language, and did not refer to the conceptual framework used for the analysis. Interviewees were invited to define in their own words the State or the firm, and to describe their respective role in society. Interviewers asked them to list as many environmental problems as they could, and to evaluate their severity. Interviewees also explained how they see pressure groups, and described their role in a democratic society as well as their interaction with firms.

Each interview was transcribed, and qualitatively analyzed through a codification process. Using Atlas.ti software, we were able to draw up the main characteristics of the social representations of our core research objects. From the identification of the predominant themes in the interviewees' discourse, we evaluated the importance they give to the environmental crisis. We also draw graphic representations of the definition of the core concepts of the research: State, firm, sustainable development, pressure groups… The representatives of the economic elite were chosen from among the top CEOs of the 50 largest companies in the province of Quebec, as listed by an economic magazine. The representatives of the political elite were MNAs who, at the time of the study, were members of the official opposition.[26] Many of them served as ministers before or after the study was conducted.

4.1. The Economic Elite

First, the environmental crisis was acknowledged by the vast majority of business leaders, some of whom considered it to be of great importance. These leaders were able to list a large number of environmental problems, and were aware of the sustainable development concept. At the same time, they did not share the environmentalists' diagnosis of the environmental crisis, nor did they envision the same solutions.[27] Instead of pointing to overconsumption, they firstly expressed concern about overpopulation and the lack of regulation in the countries of the South. They also pointed to the consumer, who does not consider the value of environmental performance when purchasing goods. But companies were not targeted as a major actor of environmental depletion.

The solutions proposed by the business leaders rely primarily on regulation, but they stressed that globalization imposes limits on regulation since there is no international legal framework binding all nations equally. Raising environmental awareness was seen as being important, and the business leaders stated that companies are now much more conscious of the environmental crisis than they were twenty years ago. Lastly, technology was seen as a powerful tool, but one that requires investments from the state because companies cannot support an additional financial burden if they are to compete in global markets.

With regard to the idea of progress, our analyses show that there has been a clear evolution of the industrial paradigm analyzed by Lipietz decades ago (1989). First, the business leaders showed that they had begun to broaden their understanding of well-being to non-economic dimensions, and were open to the idea that companies' and society's

[22] According to Jodelet, social representations are a form of socially developed and shared knowledge through which the reality of a group is constructed (Jodelet, 1989, p. 36).

[23] As illustrated further, we mainly refer to the business and political elite.

[24] See Gendron C., 2012. *Regulation Theory and Sustainable Development*. Routledge, London.; Gendron, C., Friser, A., Egoroff, J.-M., Legaré, G., 2012. Ecological modernization today: a policy makers' perspective. ISEE *Conference 2012*, Rio de Janeiro, June 16–19, 2012; Gendron, C., Friser, A., Legaré, G., Egoroff, J.-M. 2012. The Environmental Issue in Politicians' Minds: A Case Study in Quebec. 8th International Conference on Environmental, Cultural, Economic and Social Sustainability, University of British Columbia, Vancouver, Canada, January 10–12, 2012. Various components of this study benefited from one FCAR and two CRSH grants.

[25] The saturation principle has been applied to the definition of the sample, and we stopped adding interviews when it became clear that no new discourses were formulated.

[26] Although one can expect differences in social representations depending on party allegiance, based on the stated positions of the parties that were likely to have access to government, these differences were not significant at the level of analysis chosen in this paper. That being said, our research will continue over the next few years with other political parties and levels of government (municipal and federal).

[27] The ecologists' point of view is presented here as a unified ideology, but there exist various types of environmentalism. For the purpose of the analysis, I build on Sklair, Dumas and Vaillancourt's description of the shared features among ecologists' ideologies.

interests can be contradictory. Second, the business leaders acknowledged the danger of unrestricted industrial activity, and considered it legitimate that the state establishes environmental regulation measures. Moreover, in their discourse, the business leaders from dematerialized sectors as banking or telecommunications dissociated themselves from the polluting industry. It is interesting to note that they adhered to the sustainable development concept, even when they could not define it precisely. However, their understanding rejected a fundamental contradiction between growth and environmental protection, even though they recognized that a tension exists between the economy and the environment.

4.2. The Political Elite

Like the business leaders, the MNAs also recognized the environmental crisis, which some of them considered to be one of the most important issues of our time. They also listed a series of environmental problems, but formulated the causes that they identified differently from the economic elite. The first cause of environmental depletion was said to be the consumption of non-renewable resources, such as oil. The second set of major causes of the environmental crisis identified by the MNAs was consumption and industrial production methods, and the third was the scale of industrial activity and globalization.

The MNAs were of the unanimous opinion that it is up to the state to intervene to solve the environmental crisis, by developing a proper regulatory framework. However, this framework was conceived differently among them. Some argued that government should control the economic system to ensure environmental protection. Others suggested that the state should accompany economic actors while also imposing stricter environmental regulations. And lastly, a few MNAs favored self-regulation of the market, envisioning state intervention only when necessary. Research and green technology were also identified by many MNAs as a solution to the environmental crisis.

The sustainable development concept was also well known among the MNAs, although their definition of it varied from a dual economy–environment interface to a tripolar (economy, society and environment) dynamic. However, while a vast majority of them also acknowledged a tension between the economy and the environment, contrary to the business leaders, some MNAs also maintained that there is a fundamental contradiction between economic growth and environmental protection, and one of them even envisioned a degrowth scenario.

4.3. A Consumerist Ecological Modernization

The social representations of both the economic and political elites tend to confirm Sklair's hypothesis that "The *Green Consumer Guide* has replaced *Small is Beautiful!*" (Sklair, 1994, p. 207). By appropriating the environmental problem, the ruling class has developed an understanding of the issue that is consistent with its own interests, while formulating solutions in terms of the general interest. Whereas overconsumption was seen as being problematic by the MNAs, it was not even mentioned by the business leaders as a cause of the environmental crisis. Technological innovation was generally envisioned as involving the support of the state, to prevent economic actors from taking any financial risk. Moreover, growth seemed to be mostly unquestioned and to be understood as a necessary means, although an insufficient one, for the well-being of society.

Considering these dominant social representations, not to mention the question of practical feasibility, it is doubtful that the zero growth scenario advocated by some ecological economists will, in the short term, serve as the basis for a new social compromise about nature. While it is true that the degrowth proposition has received more attention recently, allowing for a more detailed analysis of how an economics of degrowth would be formalized (Kallis et al., 2012), the degrowth agenda has not yet offered clear answers about social issues in a stable or shrinking economy (Klitgaard and Krall, 2012). Indeed, our findings tend to confirm the analysis of van den Bergh concerning the political–social feasibility of the degrowth scenarios, although, since it is interpreted in multiple ways, such scenarios remain ambiguous (van den Bergh, 2011). However, the questions raised by the degrowth movement have inspired a set of innovations in national accounting which could reshape the methodology behind the calculation of collective wealth, and pose the debate between "growth" and the environment in new terms. The a-growth scenario proposed by van den Bergh and Kallis might express a more plausible path of modernization, wherein instead of focusing on growth, or degrowth, public policy and social objectives would instead be formulated in terms of specific objectives such as the employment rate, biodiversity, the level of pollution and other measures of well-being (van den Bergh, 2011; van den Bergh and Kallis, 2012).

The internalization of environmental costs as proposed by environmental economics requires further reflection. Business leaders still equate private profits with wealth, even though they acknowledge that a corporation's private interests can go against the common good. Current accounting rules are integrated into a well mastered strategy to maximize profits, which includes minimizing costs. Therefore, any additional cost potentially imposed by the government appears illegitimate since it jeopardizes the company's prime objective, that is, to be profitable, but also competitive in global markets. This does not mean that economic instruments would be rejected as an appropriate tool of any environmental protection policy. However, their rationale must rest on a streamlining process other than the internalization of externalities, and their design must take into account international competitiveness.

In light of these social representations in which the new social compromise is to be anchored, the emerging development model is likely to foster a green consumerism which will rely on a complex dematerialization strategy through which developed countries will attempt to improve their competitive positioning. In this dynamic, global environmental forums might become a major locus of international negotiations, as was clearly illustrated by the discussion around the post-Kyoto protocol. Moreover, interwoven with the existing geopolitical dynamics, the anticipated consequences of the environmental crisis is likely to lead to new alliances and positioning by northern and southern countries (Audet, 2013).

One danger is that instead of a common effort to protect the global environment, environmental costs could be shifted to disadvantaged nations which would be forced by their economic situation to host ecologically intensive activities. Indeed, the deterioration of the terms of trade illustrates how southern countries are prevented from internalizing their environmental costs due to a lack of bargaining power (Muradian and Martinez-Alier, 2000). As Sklair explains, the global capitalist system used the Third World to resolve the contradiction between capitalist development and global survival during Fordism (Sklair, 1994, p. 220–221). This trend seems to have worsened over time: in 2000, Muradian and Martinez-Alier (2000) showed that the ecological intensity of southern economies had risen as northern countries were delocalizing polluting industries to the South, increasing their demand of natural resources and leaving countries without appropriate infrastructure to manage complex waste such as electric and electronic wastes. This shift has enabled northern countries to dematerialize their own economies at the expense of an intensification of the world economy as a whole. Such a shift could also take place within a new economic structure wherein environmental performance could become a competitive advantage based on new global economic rules aimed at reconciling the economy and the environment.

Indeed, with the aggravation of the environmental crisis, we can expect to see a new political structuring of the market at the global level, which will correspond to more advanced countries' dematerialization capabilities, and in most cases confirm their dominant position in international markets. Environmental performance will likely become a new competitive parameter, especially as advanced countries impose

specifications on imported products such as those that can already be seen in the area of electronics (Hassanzadeh and Metz, 2010). Under these new rules, the state will be required to support technological development, and indeed bear the costs of internalization in order to maintain the competitiveness of its national industries (van der Ploeg and Withagen, 2013). However, at the same time, the redefinition of economic efficiency in economic and social terms will benefit from the input of civil society and NGOs. It is still hard to predict whether or not social actors will be able to reach a satisfactory compromise that will last, at least until the undergoing environmental crisis requires new adjustments. Nevertheless, the features of the plausible compromise that we have just sketched seem to find an echo in the new concept of the "green economy."

5. Conclusion: The Green Economy as a Preliminary Formulation of the Post-Fordist Environmental Compromise

Our analysis indicates that it is doubtful whether the ecological modernization process will be built on the main propositions of environmental and ecological economics. Neither the degrowth proposition nor the internalization of externalities featured prominently in the social representation of the dominant actors of our society. The actionalist and regulationist conceptualization of the evolution of society explains that the ruling class shapes a social compromise, which will be accepted by other actors as being consistent with the general interest. Therefore, the struggle for historicity, i.e. for the cultural orientation of a society, materializes in a competition between alternative storylines (Hajer, 1995). Given this understanding of social dynamics, it can be predicted that the ecological modernization agenda will be formulated through the competition between different storylines about the environmental crisis and the idea of progress.

Our hypothesis is that the social compromise about the environment might be formulated under the notion of green economy. In saying this, I am not making a value judgment on concerning such a compromise, either from an ecological or social point of view. This would require a deeper analysis which was not the aim of this paper.[28] Rather, our analysis suggests that the UN green economy agenda is consistent with the elite's social representation of the environmental crisis, the economy and the State. It also suggests a decisive shift in the understanding of the economy as a means of reaching sustainable development rather than as a competing objective to environmental protection. Moreover, as shown by the alternative modernization agendas promoted by cities and grass-roots movements (Audet, 2012), this compromise would not put an end to all environmental activism. Nevertheless, it could offer, for the time being, a response to the main environmental concerns, in particular climate change, and pacify social relations without breaking the growth ideology.

The 2008 financial crisis incited governments to invest massively in their economies in order to avoid economic disaster. In the context of this exceptional situation, it was not so much the necessity of public investments to stimulate the economy which was debated, but rather the kind of investments and the economic sectors that should be favored. It is in this context that the UNEP proposed a Green New Deal:

> UNEP's work on the green economy raised the visibility of this concept in 2008, particularly through our call for a Global Green New Deal (GGND). The GGND recommended a package of public investments and complementary policy and pricing reforms aimed at kick-starting a transition to a green economy while reinvigorating economies and jobs and addressing persistent poverty. Designed as a timely and appropriate policy response to the economic crisis, the GGND proposal was an early output from the United Nations' Green Economy Initiative. This initiative, coordinated by UNEP, was one of the nine Joint Crisis Initiatives undertaken by the Secretary-General of the UN and his Chief Executives Board in response to the 2008 economic and financial crisis.
>
> [UNEP (2011)]

Although the share of climate change and environmental protection measures out of total public investments aimed at stimulating the economy varied,[29] the recovery plans are illustrative of a new conception of the economy which can be shaped in light of environmental parameters. The environment, in this public discourse, is no longer presented as a constraint on the economy; on the contrary, it is argued that it can be a new driver for growth. Following this first initiative and in preparation for Rio + 20, UNEP decided to outline its call for a green economy in a report entitled *GREEN economy. Pathways to Sustainable Development and Poverty Eradication* (2011):

> UNEP defines a green economy as one that results in *improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities.* In its simplest expression, a green economy can be thought of as one which is low carbon, resource efficient and socially inclusive. In a green economy, growth in income and employment should be driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services. These investments need to be catalysed and supported by targeted public expenditure, policy reforms and regulation changes. The development path should maintain, enhance and, where necessary, rebuild natural capital as a critical economic asset and as a source of public benefits, especially for poor people whose livelihoods and security depend on nature.
>
> [UNEP (2011)]

When carefully read, the interesting point about this report and the green economy proposition is that it is not built on the recognition of the "natural" externalities that must be addressed, but rather on the poor and mistaken public policies leading to these externalities, and consequently fostering a "brown", i.e. ecologically intensive economy. This diagnosis is skillful since it overcomes the debate between interventionism and laissez-faire. Indeed, it argues that the choice is between brown and green interventionism, and that sustainable development relies on this new green economy.

> During the last two decades, much capital was poured into property, fossil fuels and structured financial assets with embedded derivatives, but relatively little in comparison was invested in renewable energy, energy efficiency, public transportation, sustainable agriculture, ecosystem and biodiversity protection, and land and water conservation. (…)
>
> Existing policies and market incentives have contributed to this problem of capital misallocation because they allow businesses to run up significant social and environmental externalities, largely unaccounted for and unchecked. "Unfettered markets are not meant to solve social problems" so there is a need for better public policies, including pricing and regulatory measures, to change the perverse market incentives that drive this capital misallocation and ignore social and environmental externalities. Increasingly too, the role of appropriate regulations, policies and public investments as enablers for bringing about changes in the pattern of private investment is being recognized and demonstrated through success stories from around the world, especially in developing countries.
>
> [UNEP (2011)]

[28] For a commentary and analysis of UNEP's Green Economy Scenario, see Victor and Jackson (2012), Bina and La Camera (2011).

[29] 80% of total investments in South Korea, 38% in China, 21% in France, 12% in United States, and 8% in Canada (HSBC, 2009).

In fact, the main rationale behind the green economy concept is to be found not so much in economists' reasoning regarding externalities, but in the Porter Hypothesis regarding environmental regulation and competitiveness. The UNEP explicitly refers to it in its Green Economy Report:

> At the national level, any strategy to green economies should consider the impact of environmental policies within the broader context of policies to address innovation and economic performance (Porter and Van der Linde, 1995).[2] In this view, government policy plays a critical role within economies to encourage innovation and growth. Such intervention is important as a means for fostering innovation and for choosing the direction of change.
>
> [Stoneman ed. (1995), Foray ed. (2009)]

> 2. This point has been debated since at least the time of the initial statement of the Porter Hypothesis. Porter argued then that environmental regulation might have a positive impact on growth through the dynamic effects it engendered within an economy.
>
> [UNEP (2011, p. 22)]

The Porter Hypothesis, which was first proposed in a short essay published in 1991, states that stringent environmental regulation fosters competitiveness by stimulating innovation. Porter's main argument was that if stringent regulation can raise production costs at the beginning, it will provide a competitive advantage in the long run by fostering innovation, quality and efficiency: "Properly constructed regulatory standards, which aim at outcomes and not methods, will encourage companies to re-engineer their technology. The result in many cases is a process that not only pollutes less but lowers costs or improves quality" (Porter, 1991, p. 168). This hypothesis was further developed in a paper published four years later by Porter and van der Linde (1995). The authors argued that, rather than a means of internalizing externalities, regulation is perceived as necessary because firms do not always make optimal choices, especially because information is imperfect and uncertain. A careful reading shows that the authors do not mobilize market externalities in explaining that resource efficiency or pollution reduction will not necessarily be rewarded by the market and cost structure, or that regulation is a means of internalizing environmental costs so that resource efficiency goes hand in hand with the reduction of production costs. Regulation is presented as a competitive tool, rather than as a necessary way of internalizing environmental externalities.

As can be seen, although the participants in our studies did not refer explicitly to it, the green economy concept is closely linked to the dematerialized growth scenario proposed by the dominant social actors in response to the environmental crisis. Although the green economy concept is not yet widely accepted, our analysis of social representations suggests that this concept is more likely than the degrowth propositions put forward by the environmental and ecological economics movements to be the basis of the next global social compromise in which the economic rules will be anchored: a green technological consumerism structured by a global competitive dynamic, where goods will be conceived so as to lower the ecological impact of their production and use, and environmental performance will become a qualifying criteria for entering in economic markets.

Faced with this ecological modernization agenda, social movements are developing an alternative view of the transition towards a green economy. Audet (2012) shows that what he calls the managerial–technocentrist transition discourse to which UNEP's report is associated is challenged by a radical–ecocentrist transition discourse promoted by three different reports: Energy Cities' Rio + 20, The Great Transition (NEF), and Rob Hopkins' Transition Handbook. This new confrontation might indicate that green economy is replacing sustainable development as the new concept that comes into play in the process of historicity. To conclude, it should be noted that such an involvement in the definition of a highly economic concept is interesting because it parallels the way in which social movements have progressively carved out their place in the economic sphere since the last decade, a process recently conceptualized by the idea of emerging new social–economic movements (Gendron et al., 2009).

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