THE SOCIAL CONSTRUCTION OF "GREEN" MARKETS: A SYSTEMATIC REVIEW OF THE LITERATURE

SILVIO EDUARDO ALVAREZ CANDIDO
Federal University of São Carlos - UFSCar
Rod. Washington Luís - Km 235
São Carlos, São Paulo - Brasil
CEP: 13565-905
E-mail: seacandido@dep.ufscar.br

MIRIAM COSTA TOYAMA
Federal University of São Carlos - UFSCar
Rod. Washington Luís - Km 235
São Carlos, São Paulo - Brasil
CEP: 13565-905
E-mail: miriamtoyama@gmail.com

Abstract

The purpose of the paper is to review how sociological approaches to the economy have been analyzing the genesis and transformation of markets due to environmental issues. Within last decades we have seen a major change in the way societies signify their relation to the natural environment. This large scale change in perception is associated by some authors with the expansion of rationalized scientific analyses of nature, which made possible to identify and codify the ecological problems, and by the broad agenda kept by multilateral international organizations, that made possible the creation of instances to debate and disseminate the issues in a global scale. Economics is one of the main realms affected by this institutional change which create the conditions for the rise, fall and transformation of markets. To accomplish the proposed goal, a systematic review of the literature of economic and organizational sociology will be held. Using keywords and strings defined by the analyses of a host of key papers previously identified, major international data bases were researched. The selection of the included papers was based on well defined criteria of inclusion and qualification. Data was organized and analyzed qualitatively establishing research categories. Researches based in different theoretical traditions of economic sociology were identified. Besides of the different theoretical affiliations, the results of these publications were considered highly complementary. Studies also used several different research strategies to accomplish their goals. Findings suggest that these cultural changes affect field frames, creating a sense of treat or opportunity to economic actors. That was the case for players of recycling, organic products, wood, eolic and solar energy markets, among others that were the object of studies revised here. In all cases it was evident that markets may not be fully understood without understanding the real historicized actors that build them. These are not only companies, but business associations, social movements, NGOs, professional groups and, specially, several State groups that have a key role in the stabilization of these social spaces. Results shows the potential and the importance of considering "non economic" aspects to fully understand markets and how economics is embedded in society.

Key words: Markets, environment, economic sociology, organization theory.

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1. INTRODUCTION

Within last decades, we watched a major shift in the understanding of the relationship of the society and natural environment. Economy is centrally implicated by these changes and economists have been trying to make sense and purpose ways to solve environmental problems. As this "externalities" invade the economic space and has to take into account to respond society's claims, the "tool box" of orthodox economists is messed up.

Neoclassical economists respond to environment issues basically in two distinctive ways. Most conservative thinkers defend the thesis of the conservation of total capital (PEARCE and TURNER, 1990). According to them, we should not get worried to protect nature, but to sustain our capacity of production. Environmental issues may be seen as business opportunities and new technologies will emerge to solve issues and to reduce our dependence on natural resources. So, economic growth itself is the way we may overcome difficulties and the loss of biodiversity and natural resources that do not have utility would be acceptable, as it does not impact our production capacity.

Another stream of orthodox thought now known as Environmental Economics defends the thesis of natural capital conservation (MARQUES e COMUNE, 1997). For these economists, the maintaining of total capital is not enough, since environmental resources will never be plenty substituted by technological ones. The solution would be internalizing environmental costs to preserve resources of which we depend and to create specific markets in which they would be exchanged. This stream has been influencing decisively the creation of markets for the exchange of natural assets (carbon, water) and other mechanisms with the purpose of regulate the offer and the demand of natural products and services based on price mechanisms.

Such proposals deals with resistance in the economic science field itself. More heterodox economists recognize that they do not attack at the core of the problem of environmental degradation, which is the lack of integration between economic and ecological process. For Ecological Economy, the problem is that the economic system is conceived as linear presupposing that the capacity of nature to provide natural resources and assimilating the residues of economic process is infinite (CONSTANZA, 1989). Based on biophysical principles, these economists/ecologists claims that sustainability is really about extracting natural resources from nature in a rate that is smaller than the rate of recovery of ecosystems and disposing rejects in a rate that is smaller than the velocity of its absorption by the environment. They recognize economics is inserted in the ecological system and that has to fit in it. Steady State Economists go ahead and purposed that the only way to solve the environmental crises is to limit the growth of the economic systems (DALY, 1996).

While we acknowledge the importance of the development of theoretical models to shape reality and to propose ways to solve environmental issues, we also think that the achieving of solution involve to understand how environmental issues are impacting economy in real life. Our goal in the article is to show the contribution of economic and organizational sociology to the debate lies in the understanding empirically how environmental issues have been transforming the dynamics of markets. As Hirsch et al (1987) put it, instead of producing "clean models", sociologists are worried about "get their hands dirty". In doing so,

they contribute to question the assumptions in which economic models are based on and to show that economic may not be appropriately understood without considering it is embedded in society (POLANYI, 2000).

To accomplish the proposed goal a systematic review of the literature of economic and organizational sociology was held. Because economic and organizational sociology are broad and diverse fields, it was difficult to establish general and precise keywords and strings for the research. So we focused on four major subfields of contemporary economic sociology identified by Fourcade (2007), each of which corresponding to different theories of society that lies beyond the theories of markets: networks, institutional analysis, fields and performativity. Using key terms of these approaches added to economic sociology and variations of the terms "sustainability" in English and Portuguese to research Capes and Google Scholar databases, we identified sixty three papers and selected the main arguments and findings to present in a following section.

Before getting to the core of our objective, we will briefly present the main approaches to economic sociology taken as a reference to the review. We then review the selected papers, analyzing how each of them addresses the problem. Concluding remarks stresses the potential contributions of the sociological approaches to debates over environmental issues in economics.

2. SOCIOLOGICAL APPROACHES TO THE MARKET INSTITUTION

We agree with Fourcade (2007) that the discussion about markets in economic and organizational sociology is a "privileged terrain for the development and application of general theoretical arguments about the shape of social order" (p. 1015). Beneath the different ways in which economic sociologists analyses markets lies on different understandings of how society itself works. Four major streams ideally isolated are identified and discussed by the author.

The first one is network analysis, defended prominently by Harrison White and Mark Granovetter (WHITE, 2002; GRANOVETTER, 2003). While the instrumental use of networks is broad and shared by different approaches of economic and organizational sociology, these authors see direct and concrete social interactions as constitutive of social structure. It does not matter for network theorists the characteristics of the actors itself, their trajectory and attributes. The keys to understand markets are the position of the actors in the network of direct relations and the general morphology of the network itself, which constitute actors identities and behaviors.

A second perspective is based in field theory and derives from the sociology of Pierre Bourdieu (BOURDIEU, 2005). As in the concept of field in physical sciences, fields are social spaces that are structured by a set of forces transmitted without the necessity of direct interaction. The distribution of the forces among agents influences the emergence of "field effects", defining institutions that organize the social space and mediate the conflict between dominant and challengers. In field analysis the properties of the agents defines their positions and are a consequence of the structure and volume of capitals, determining their potential to influence the rules of the game. In the bourdiesian view, markets are connected by homologies between the space of producers and the one of consumers and producers, with agents in similar positions in each field tending to attract one another. The approach developed by Neil Fligstein is similar to the one of Bourdieu, but more appropriated for the

understanding of collective action and the dynamics of emergence and change in fields (FLIGSTEIN, 2001; FLISTEIN and MCADAM, 2012).

Institutionalism in organizational analyses developed a variant of field theory which gives less emphasis to power and dispute and more to the process of institutionalization and homogenization (DIMAGGIO and POWELL, 1991). Institutionalism versions of field theory also focus on the meso level social orders between the organization and its environment, and not as concept which may be used in several levels of analysis.

Performativists, the last contemporary stream of economic sociology considered in the review, focus their analysis in the influence of science and technology in shaping societies (CALLON et al, 2002). Applying their broader framework to science and technologies social studies to the economy, these scholars explain how economic theory is materialized and becomes real, how economics create the world it describes. Differently from the other three approaches, performativity derives from socials social studies of science and technology and does not include a theory of society that supports it.

In the next section, we present a brief review of the studies selected and discuss the contribution of this different strands of economic sociology to making of the relation of environment and economics. Most of the studies identified lies on the tradition of field theory, specially follow the institutionalist version. Later we will explore some reasons why that might be.

3. THE SOCIAL CONSTRUCTION OF "GREEN" MARKETS

The emergence and diffusion of environmental issues has been an important vector of the transformation of the economic sphere. Scholars tent to see this major shift in the way societies signify their relation to the natural environment as a process of institutional change. There are different understandings about the sources of this institutional shift. Meyer et al (1997), for example, associates it with the expansion of rationalized scientific analyses of nature, which made possible to identify and codify the ecological problems, and by the broad agenda kept by multilateral international organizations, that made possible the creation of instances to debate and disseminate the issues in a global scale. Other authors, as Rootes (2004) e Carmichael et al (2012), highlight the role of the environmental movements in this transformation.

Nevertheless, our focus here is not to understand the causes of this shift, but how it affects the dynamics of markets. While some authors have seen the changes in markets due to environmental issues as a form of cooptation, with companies "painting themselves of green" (LAFFRONT and TIROLE, 1991), most authors in contemporary economic sociology agree that real changes are happening as a result of the process of institutionalization of environmental concerns. These changes in the meaning of the relation between the economy and the environment materializes in the changes in State organizational structures, legislation, the educational curriculum, the rise of new professions, the shifts in technologies and other ways in which business start to systematically incorporate environmental issues in its agenda (HOFFMAN and VENTRESCA, 1999).

Empirical studies revised somehow show how a process of "displacement of capitalism" (BOLTANSKI and CHIAPELO, 2009) is happening in markets due to the environmental critics. Studies analyze the emergence and transformation of a diversity of markets, as oil, to biofuels, wind and solar energy, the organic production, the automotive industry, certified timber, fair trade, the recycling industry, financial markets, etc. Most of it is

concentrated in markets of the developed countries, but there is an emergent group of researchers focused in understanding the Brazilian case. We are going to summarize findings of the major studies identified in order to point to the potential contribution of these sociological approaches to make sense of the changes in markets due to environmental issues.

Network approach contribution is to show that the emergence of environmental issues is reorganizing the structures of networks in several markets. We will explore the findings of some studies in this vein. Raynolds (2002) shows how Fair Trade initiatives created a market niche in agricultural products connecting small producers from the South with consumer markets from the North. The creation of this networks were based on fairness and were capable of overcome the mistrust of southern producers, that were historically disadvantaged when involving in international markets.

Taylor (2005) compares the how Fair Trade and Forest Stewardship Council (FSC) were able to mobilize networks and develop market niches for more sustainable products. Fair Trade organization was able to shortening the chain of the products and to develop a diversified powerbase in the chain connecting northern consumers and southern producers. But because it was established as a very restricted niche identified by the critique to conventional trade, its possibilities of expansion were restricted. On the other hand, FSC strategy was to ally with mainstream powerful actors what made it possible to expand quickly and increase its impacts. Nevertheless, this strategy leads them to submit to the interests of conventional markets players. As a result, the increase of certified trade kept concentrated in North-North commercial relations and not as envisioned in the first place, to benefit producers from the South.

Sinnino and Mardsen (2006) challenges the conventional ways network analysts categorize the embeddedness of alternative agricultural production. They say that due to the fuzzy relation of conventional and alternative networks of production, scholars must look for "deeper" ways to capture differences among producers. Authors claim that the improvement of the understanding on this networks depend of situating them in the political and institutional scenario created in Europe by new regulations of agricultural activity. They also posit the relations between traditional and regular producers must be assessed more critically in order to show the disputes among these producers in networks.

Wilkinson (2011) shows that the involvement of social movements in the construction of agricultural commodities markets in Brazil is forcing mainstream producers of food, feed, fuels, and forestry products to incorporate sustainable practices. Author points out that the transformation of these markets is rooted in the formation of networks thought each civil society involves in the economic process, a phenomenon originated in Europe that is blurring the separation of quality/niche agricultural products and commodities. Drawing in the case of soy, argues that the sustaining of this transformation will depend on the position of China, a major consumer to adopt sustainable patterns as Europe have been doing.

Studies drawing on network approach are varied, but in general they do not count on a general theory to assess the dynamics of change in society. Field approaches somehow deal with this fragility. Particularly, scholars from new institutionalism in organizational analysis have been incorporating elements of social movements theories or from other field traditions to overcome this limitation.

One of the first published studies identified focused on the chemical industry in the United States, one of the most impacted markets by the rise of environmentalism. Hoffman (1999) identifies four stages in the transformation of this industry between 1960 and 1993, connecting them to the pillars regulative, normative and cognitive institutions proposed by

Scott (1995). Based on the analysis of longitudinal data on lawsuits filed in federal courts and specialized media content analysis, the author shows that at first environmentalism was seen as a threat to business and reports focused on technological optimism to overcome the environmental challenges, following what orthodox models of the economy suggest. In a next stage, the State stepped in and, pushed by NGOs, began to impose new forms of regulation addressing environmental issues. In the United States, that was when the Federal Environmental Agency was created and the concern of business was now how to adapt to the new context and also to offer resistance to new regulations. In a third stage, NGOs began to perform direct attacks to companies and environmental issues have become normative treated with communications focusing on social responsibility and cooperation. In the last stage, in which, according to the author, environmental aspects start to become a cognitive institution, insurance companies come into play, management solutions integrating economic and environmental aspects diffuse and cooperative environmental management actions start to be commonly held.

Two other studies coming next establish direct connection between the institutionalist tradition and business strategy. Authors want to make the point that the design of strategy is institutionally bounded and not a fully rational process and at the same time that institutions rise in fields that are much more dynamic and complex than the new institutionalism make it look like. Levy and Kolk (2002) analyzed the reactions of large multinational oil companies headquartered in the United States (Exxon, Chevron) and Europe (Shell, BP) to the emergence of climate change. Authors show that the institutional context of the host countries and the specific history of each company decisively influenced the initial reactions of corporations. Companies located in the United States aggressively challenged the science of climate change and highlighted the high costs of controlling greenhouse emissions. They lobbied actively against the emissions control and had insignificant investments in alternative power sources. European companies, on the other hand, quickly accepted the scientific basis and the principle of preventive action, supported the Kyoto Protocol and announced substantial investments in renewable energy. When the consensus over climate change increased, however, the strategies adopted by companies began to converge, becoming increasingly similar and closer to the initial reaction of European companies.

Similarly, Levy and Rothenberg (2002) argued that companies in the automotive industry have positioned differently to climate change debate due to its inclusion in multiple and overlapping markets and according to the location of its headquarters. Authors show that initially U.S. companies were more resistant to the adaptation to climate change, with very limited investments in the markets for low-emission vehicles, compared to their European counterparts. On the other hand, they were very aggressive to adapt to the controls imposed by the State. Europeans companies made changes more gradual and strategic incorporation environmental issues on its strategy earlier and anticipating State actions.

A major study about the emergence of the recycling industry in the United States was carried out by Lounsbury et al (2003). Building on the institutional conception of field and social movement theory, the study shows how institutional changes generated by environmental movements formed the basis for the structure of an industry. Recycling was a core strategy of the environmental movement of the 1960-1970's, which was highly anti-materialist and anti-capitalist. Movement's actors saw recycling as anti-hegemonic movement aiming to make people to reflect on how consumer patterns were affecting the environment. This grassroots recycling model was non-profit and community based and activists engaged in environmental education activities to stimulate neighborhoods to separate the recyclable

waste. This model of recycling, however, was never supported by the dominant agents of environmental management and the State, remained marginalized and the the vast majority of community recycling centers end up failing. Waste incineration for energy production became mainstream environmental management solution and was framed in the official discourse a form of recycling. By the 1980s, recycling had become virtually synonymous with the incineration for power generation. Situation started to change by the mid-1970s, with the national debate over regulation of the disposal of solid waste proposed by the U.S. Environmental Protection Agency. Around this debate, movements mobilized against incineration and for the establishment of a for-profit recycling industry. As a result, the political and institutional foundations for the establishment of recycling as a business was formed and this market aroused.

Other studies stress the role of environmental movements in institutional and market changes in the energy markets. These authors stresses that oil crises and the emergence of environmental issues functioned as a trigger to the development of markets for renewable energy. Jacobsson and Lauber (2006) demonstrate how in the building of policy and regulatory framework for renewable sources, German political groups and environmentalists were able to confront the coal and oil interests. As a result, the diffusion rate in this country was much faster than in other parts of Europe.

In predominantly quantitative study, Sine and Lee (2009) showed that the existence of environmental groups engaged in the transformation of the electricity sector was the key variable in explaining entrepreneurial activity in the wind sector in the United States. Authors show that factors such as the availability of high quality wind, the existence of technological capital in the territories and reductions in generation capacity only impacted positively sector activity to the extent that there was a mobilization of environmental groups. In a case study about the state of Colorado in the United States, Soppe and Doblinger (2013) detailed how environmental movements actively contributed to the establishment of the regulatory framework and collaborated with leading companies in the sector through campaigns to create a voluntary market, enabling the achievement of necessary scale to the establishment of the wind energy.

Studies about the emerging of organic markets highlight similar aspects. Lee (2007) shows how organic agriculture transformed from marginal agricultural practices to a huge consumer market in the United States and Europe, threatening traditional agriculture. Expansion is related to strategic actions to legitimize organic farming and delegitimize the conventional one through educational campaigns directed to buyers and consumers. Gradually, organic products demand boosted and due to premium prices the niche became increasingly attractive to traditional producers. When these producers started invading the organic niche, however, they brought a different business conception, oriented to growth and economies of scale. A dispute over what organics was objectified inside certification organizations that were the governance units organizing the market. Organic end up being defined by major certification patterns according to orthodox producers understandings. Sikavica and Pozner (2013), based on a merge of institutional and organizational ecology approach, compare the organic case with the micro-radio and micro-breweries in the United States and argue that organic movement failed to protect their niche for the lack of a clear identity on the regard of the size of organic production.

The second group of studies analyzed takes as a reference field perspectives as developed by Pierre Bourdieu or Neil Fligstein. There is a great deal of convergence with institutionalist accounts just presented. This is especially because the works presented

definitely contribute to alleviate the focus of prior institutionalism in stability by getting inspiration in social movement theoretical framework. Nevertheless, we may note that power is in most times addressed more systematically in the following. We also note that most of the studies identified are from Brazilian authors, what suggest the influence of bourdiesian approach in the constitution of economic sociology in the country.

Carneiro (2007) shows how the rise of the market for certified timber of the Amazon Rainforest region can be seen as the product of two movements: the critique of traditional timber market and investments to promote the production and consumption of timber carrying the Forest Stewardship Council certificate by. International and national NGOs had a central role in this process, working actively to the establishment of the institutional foundations of the market and its establishment. This strategy was a reaction to critics of environmental certification as a way of neoprotectionism, through which consumers in Northern countries could restrict the consumption of timber from the South. The answer was to do the hard work and establish the basis of the creation of the certified market. In order to achieve this goal, NGOs conducted market research, studies on the dynamics of the timber market in Brazil, funded a learning centre for the sustainable management of forest areas and promoted meetings and trade shows to promote products and producers and consumers NGOs allied with pioneer companies that aimed to create this market, being central in the construction of this market. Based on the findings, the author asserts this space as a *marché prescripteur*, ie, as a field of exchanges made possible by the prescription of product's quality by interested agents.

Mundo Neto (2010) shows how the emergence of environmental issues and the search for renewable energy sources, changed the status of Brazilian ethanol which. All of a sudden, ethanol was launched as a candidate for worldwide energy source and became an attractive target for private equity investors. Focusing his analysis of the business association representing the industry (UNICA), author shows the transformation of the conception of control of the sector due to the invasion of the investor groups and the strategic actions conducted to change the dire image historically constructed from the sector in Brazilian society at an earlier period of time and legitimate it. In this operation the "alcohol" becomes "ethanol" and "sugar cane sector" became "bioenergy sector"; companies start to adopt corporate governance standards and are created councils for multi-stakeholder dialogue to discuss solutions for critics received by the sector (Sugar Cane Dialogue Group), an Institute of Agribusiness Development (ARES) is created to manage project of environmental responsibility; standards for manual cutting of sugarcane are discusses and mechanization of the crops is intensified; and mass investments in the social and environmental certification of companies are carried out.

In a similar vein, Sartore (2012) examines the genesis of the market of socially responsible investment in Brazil. The study shows that responsible investment is historically associated with the incorporation of religious principles to economic practices and that in the case of contemporary financial markets there is a process of converting these principles into a numerical language and a specific kind of logic that is well represented by the sustainability index created in the Brazilian market. Underneath the creation of this market was the believe from strategic agents of the financial sector that companies with better social and environmental practices would also have better financial performance in the long term. Assessing the volume and distribution of capital among agents involved in the construction of the index thought Multiple Correspondence Analysis, author identifies positions of the agents involved in the field and show that this space is formed by elites of different social spaces,

like NGOs, pension funds, academic field, and governments. The engagement in the construction challenges the dominant view of investment, without, however, destroy the sense of play of the field.

One last paper based on Bourdieu and Fligstein's conception of field discussed focuses in solar energy in the United States. Hess (2013) shows how grassroots movements which proposed the adoption of decentralized forms of solar power generation have engaged in the creation of regulatory frameworks and innovative forms of governance allying with dominant players from outside the energy market. Author shows how the alliances with this "countervailing power" have been decisive as a strategy to challenge dominant conception of power generation of the energy segment. Author highlights the participation os investment banks (as JP Morgan) and telecommunication companies (as Google) to unblock the diffusion of alternative technologies. However, the paper also shows that dominant companies reacted incorporating and adapting the conception of this alternative technology to their vision and interest, concluding that besides social movements can play important roles for the transformation of markets and technological systems, the results are never as envisioned due to the generally disproportional power of influence of the incumbents.

Final works presented draws on the performativity perspective and is authored by Donald Mackenzie and Michel Callon, prominent scholars of the field. Earlier we presented the view of Environmental Economics that defends that the internalization of the environmental costs thought the creation of markets to the exchange of environmental products and services. Articles show how this proposal was implemented in a worldwide scale in carbon markets as way to deal with climate change and economic theory and mechanisms actually constructed a new market. Mackenzie (2009) traces the use of market mechanisms as a way control the concentration of certain substances to sulphurdioxide trading in the US in 1995 which was presented by Clinton Administration as a case of success and influenced the negotiations of the Kyoto Protocol decisively. The establishment of Clean Development Mechanism and European Union Emissions Trade Scheme (ETS), in which his study is focused, made possible a crescent amount of carbon to be traded. Trade occurs mainly between polluters in the developed countries, which have to accomplish the goals to reduce emissions enforced by governments, and sellers of certified projects in developing countries, which may invest in projects to reduce emissions and sell the corresponded volume of credits. Mackenzie then analyses the complex set of concept and tools that sustain this market and analyses technical controversies arising that will have to be dealt with to its survival. Callon (2009) considers this market as large scale collective experiments that involve diverse technical controversies and show how these are constitutive of reality. He sees global warming as an opportunity to the constructions of new calculative mechanisms that will civilize markets and economics, since in their constitution they were somehow force to accomplish the promotion of equality among nations.

While field approaches focus on symbolic and cultural aspects, performative and network scholars are more worried with the material aspects involved in markets. Some important scholars, as Swedberg (2008), argue that one of the frontiers of economic sociology is bridging these perspectives. Empirical studies on the transformation of markets due to environmental issues may be fruitful focus to accomplish this goal.

5. FINAL CONSIDERATIONS

While, in general, economics is worried to propose models to solve environmental problems, economic sociology focus on the understanding of empirical and specific transformations in the economy related to the emerging of environmental issues. We recognize the barriers to the establishment of a dialogue between these two relatively isolated fields, but think that this is a fundamental task to the advance of knowledge. If economists recognize economics it is not and should not be autonomous from society, they would be able to build more realistic models and ones that generated fewer social conflicts when applied. Economic sociologists, on the other hand, should go ahead and propose new models and process based on their understanding of socio-economical dynamics. Socio-economic models should recognize social movements and the State as legitimate actors in the economic space. An exemplary case of economic models incorporating social values and principles is the one of the organ transplants discussed by Steiner (2010). A third disciplinary connection for thinking of a sustainable economy is the one with ecological sciences, as Ecological Economists have noticed. Sustainability deals with the limits imposed by the environment to society and the valuable knowledge out there should also considered.

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