



ORGANIZATIONAL FIELD AND INSTITUTIONAL PILLARS: UNDERSTANDING THE PESTICIDE FIELD IN BRAZIL AND INDIA

*CAMPO ORGANIZACIONAL E PILARES INSTITUCIONAIS: DISCUSSÃO PARA
ENTENDER O CAMPO DOS PESTICIDAS NO BRASIL E ÍNDIA*

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Abstract

This paper aimed to discuss concepts that constitute and traverse institutional theory, so as to build a structuralist epistemology that might offer support to future researchers that intend to study the evolution of the pesticide field in Brazil and India. Specifically, we defined the concepts of organizational field and institutional pillars. This was made in order to propose a research agenda that seeks to investigate conflicts and actions taken by agribusiness multinationals, politicians, family farmers, small, medium and large agriculturists, researchers from different fields and organizations of the third sector, thus legitimizing their definitions about the pesticides. This is important because health researchers could define them as harmful to human health, thus suggesting that the government should forbid their commercialization. On the other hand, aiming at sensitizing politicians and society, agribusiness multinationals could define pesticides as fundamental technologies for providing high productivity and food safety to the population.

Keywords: *Institutional Theory. Pesticides. Agriculture.*

Resumo

Este texto teve como objetivo discutir conceitos que constituem e atravessam a teoria institucional de modo a construir uma epistemologia estruturalista que possa oferecer subsídios para futuros pesquisadores que desejem estudar a evolução do campo de pesticidas no Brasil e na Índia. Especificamente, delineamos

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os conceitos campo organizacional e pilares institucionais para propor uma agenda de pesquisa que busque investigar conflitos e ações de multinacionais do agronegócio, políticos, agricultores familiares, agricultores pequenos, médios e grande porte, pesquisadores de diferentes áreas e organizações do terceiro setor a fim de legitimar suas definições sobre os pesticidas. Isso é importante, pois, de um lado, os pesquisadores da área da saúde poderiam definir os pesticidas como prejudiciais à saúde humana, sugerindo, assim, que o governo proíba sua comercialização. Por outro, com o objetivo de sensibilizar os políticos e a sociedade, as multinacionais do agronegócio poderiam definir os pesticidas como tecnologias fundamentais para proporcionar alta produtividade e segurança alimentar à população.

Palavras-chave: Teoria institucional. Pesticidas. Agricultura.

1 INTRODUCTION

This paper aimed to discuss concepts that constitute and traverse institutional theory, so as to build as structuralist epistemology that might offer support to future researchers that intend to study the evolution of the pesticide field in Brazil and India. Starting from this theoretical foundation, we conceive that using institutional theory from a structuralist point of view may be productive for understanding conflicts and actions taken by agribusiness multinationals, politicians, family farmers, small, medium and large agriculturists, researchers from different fields and organizations of the third sector, legitimizing their definitions (Hoffman, 1999) regarding pesticides. On the one hand, health researchers could define them as harmful to human health, thus suggesting that the government should forbid their commercialization. On the other, aiming at sensitizing politicians and society, agribusiness multinationals could define pesticides as fundamental technologies for providing high productivity and food safety to the population.

Some organizational fields are marked by conflicts among different agents: they seek to legitimize their definitions concerning a certain theme (Hoffman, 1999). For example, in the Brazilian winemaking sector, while winemakers strive to define wine as a food, the Brazilian government, through normative acts, classifies it as an alcoholic beverage. Thus, the high taxes over wine that Brazilian winemakers have been contesting throughout the years are still in effect (Borges & Radaelli, 2016).

Considering the pesticide sector, it can be noticed that in Brazil and India these products raise questions regarding the externalities they generate in society (Bohner, Nishijima & Araújo, 2013; Kumar, 2016; Dutra & Souza, 2017). The inappropriate usage of these products can cause not only environmental contamination, but also several public health issues, affecting the health of rural workers and consumers.

An example of intensive pesticide use can be seen in the city of Lucas do Rio Verde, in the Brazilian state of Mato Grosso: there, the intake of pesticides per inhabitant reached 136 liters during the year 2010. In 2009, the city, which has around 37,000 inhabitants, consumed about 5.1 million liters. These data reveal that the intake per inhabitant was similar between 2009 and 2010. There is a clear difference between the *per capita* intake in Brazil and in the city being analyzed: as an example of this disparity, in 2010 the country reached the mark of 4.3 liters of exposure to pesticides per inhabitant (Moreira *et al.*, 2010). When confronted with these numbers, the results of Palma (2011)

cause no surprise: they denounce that pesticides caused the contamination of the mother's milk of 62 women in the city of Lucas do Rio Verde.

In contrast, Bohner, Nishijima & Araujo (2013) highlight the functionality of pesticides in fighting pests and pathogenic organisms that can compromise agricultural production. Kloor (2014) argues that the main studies against the use of pesticides and genetically modified seeds do not offer clear evidence and are driven by ideologies that advocate against globalization, neoliberalism, and the free market. The present study does not intend to skew results, suggesting that investigations should seek empirical evidence alongside different agents related to pesticides. These can be agribusiness multinationals, family farmers, small, medium and large farmers, politicians, third sector organizations and researchers from different fields.

In view of this, suitable questions are how the pesticide field was formed in Brazil and India, and how it is managed despite the contradictory elements that surround its activities. It is well known that India and Brazil are megadiverse countries. They have huge quantities of cultivated plants (Brazil and India have, respectively, 43,020 and 45,500 known plant species), and they are also important repositories of traditional knowledge associated with biological diversity (Peschard, 2016). Thus, it is necessary to consider influential strategies that, by restructuring Indian and Brazilian institutions, have also modified the institutional and social dynamics that are responsible for sustainable progress.

This study introduces the concept of *organizational fields* in order to collaborate with future researches that analyze the role of different agents in the configuration of the pesticide field in Brazil and India. Some agents develop a variety of strategic actions in order to create, maintain or take down institutions (Fligstein, 2001); therefore, it is relevant to ponder how individuals that surround the pesticide field have taken different actions to validate their institutional definitions of the agrochemical product. In the present study, it is assumed that institutions originate from actions of agents that try to move regulatory, normative and cultural-cognitive pillars, in order to provide stability and meaning to social behavior (Scott, 1995).

In India and Brazil, what led political leaders or other agents to draw regulatory, normative or cultural-cognitive acts for institutionalizing the product? Was it the definition of pesticide as an effective product in fighting pests and, as a consequence of that effectiveness, something fundamental to the increase in agricultural productivity? This question suggests that several agents were (and are) interested in the definition of pesticides as something positive and, therefore, subject to institutionalization by the legal apparatuses of the Brazilian and Indian governments. Thus, the investigation of explanations regarding the role of several agents in the formation of a field under question, as is the case of pesticides, becomes instigating.

Approaching the topic of pesticides means focusing on issues that go beyond the economic frontier. One concern is the analysis of the productivity increase of different types of crops, which are based on an agribusiness model characterized by the intensive use of pesticides and technologies. However, this study also draws attention towards the struggle of certain agents for environmental preservation, increase in grain yield, conservation of the culture and family values of farmers and the end of the indiscriminate use of pesticides.

2 THEORETICAL FRAMEWORK

2.1 Institutional theory

Machado da Silva, Walter & Cruz (2010) refer to Czarniawska (2008), to point out that institutional theory is not only concerned about the comprehension of the relationships between individuals, organizations and the environment. It also serves as a way of thinking about social life, enabling researchers to understand elements (actions, discourses and strategies) that catalyze social and organizational dynamics.

Scott (1995) argues that institutions can be conceived as formal structures and behavioral patterns. The regulatory, normative and cultural-cognitive pillars that constitute institutions provide stability and meaning to social behavior. According to the author, the regulatory pillar involves the capacity of agents to establish rules, to inspect society's conformity at large in an attempt to influence future behavior. Organizations, concerned about punishment, obey the laws enacted by the government. This is because their coercive and punitive character imposes restrictions on social behavior, aiming at maintenance of social stability.

The normative pillar is constituted by norms shared by a certain group. Once group members believe that their values and norms grant them credibility and certification in society, they pressure their members into conforming to them. While values are a notion of what is preferable or desirable, norms specify how "things" should be done, thus defining the legitimate means to achieve the ends that are substantiated of value (Scott, 1995).

As for the institutions that emerge from the cognitive-cultural pillar, they are followed by society in an orthodox manner. They are also interpreted as constituents of the nature of social reality and as models that serve to construct meaning. Organizations act according to a cultural consensus or the fulfillment of cognitive rules that present themselves as ways of thinking or acting that are taken for granted for the good performance of a certain action (Scott, 1995).

Scott (1995) acknowledges the fact that institutions are susceptible to processes of incremental and discontinuous change. Stepping out of the conscious and into the unconscious, out of the legally imposed and into the taken for granted, institutions guide organizational behavior through the specification of patterns or norms, supported on the legal or social apparatus (Scott, 1995; March & Olsen, 1989).

From Scott's (1995) statement, we can understand that institutions are involved in normative and coercive obligations, but these are often internalized by actors of a certain community as facts that are taken for granted, which guides their processes of communication and negotiation. In this sense, it can be observed that a norm or an institutionalized practice within a certain social context can be understood as the result of a process. And, through this process, obligations, social facts, or realities appear in social dynamics with the status of certainty or something that has already been decided in thought and social action (Meyer & Rowan, 1977).

The three institutional pillars are considered by Scott (1995) as key components in an organizational field. Considering this, Child, Lu & Tsai (2007) claim that a central task for agents in a given field is building elements that will constitute these pillars, so as to serve as a cognitive guidance or as a set of structural arrangements through which new order will be normalized and executed.

2.2 Organizational field

Institutionalists have been emphasizing the concept of organizational field within institutional theory, in order to analyze the structuring of the social worlds that both limit and enable the individuals' actions. An organizational field approach stresses the active nature of an organization's context and encourages the study of the relations and particular structures that mediate the interactions in the fields (Washington, 2004).

Following a movement that emphasizes stability in social relations, DiMaggio & Powell (1983) propose that organizational fields are formed by organizations that jointly constitute an acknowledged area of institutional life. These organizations can be key suppliers, resource and product consumers, governments and their regulatory agencies, as well as other companies and agencies that offer similar services or products. The role of organizations in the fields is to respond to the demands of specialists that act in the level of professions, and the regulatory requisitions drawn out by the government. This way, the field structuring, catalyzed by great rationalizers like the state and the professions, tends to generate isomorphic practices among organizations.

Meyer & Rowan (1977) point out that organizations adopt similar positions due to the legitimacy and the institutionalization of the bureaucratic practices defined by the states and other large organizations. As social entities, organizations tend to increase their chance of survival in the markets when they conform to the institutionalized rules.

In the late 1990s, some institutionalists started to report that institutional theory emphasized solely the homogeneity among organizations, not including the process that generated this state. In this sense, the first studies of new institutionalism defined that the organizational field was structured on account of a technology or due to a tireless search for legitimacy. Later, the notion of organizational field started to consider that a field was formed by themes, which were important to the interests and goals of a set of organizations that constituted it. This new line of research began emphasizing the following key aspects that influenced the dynamics of organizational fields: going beyond inertia and stability to introduce the notion of change; considering the role of agency and organizational interests in their context; attempting to consider the strategic responses of organizations when facing pressures from the institutional environment (Wooten & Hoffman, 2008).

An analysis based solely on the functional dimensions that structure an organizational field can conceal interests and strategies underlying the relations that maintain the legitimacy of a given institution. Therefore, it is believed that this theoretical advance in the level of the field contributes to increase the researchers' capacity to expose even the influence of power games in the maintenance of institutions. Due to a high degree of institutionalization, they are respected by a population that is not aware of the interests supporting them.

The study in the level of the field presents new possibilities, and Hoffman's (1999) work can be cited. The author sees the organizational field as a center of debate and negotiation. The field is formed from the engagement of different agents, with varied goals and influences, which contest the legitimization of their definitions regarding a certain theme. The formation and evolution of the field is dynamic, and as critical events (e.g. legislation changes, environmental accidents or social unrest) happen on the field, new forms of debate emerge. This creates a reconfiguration of constituents,

interaction patterns and institutions that guided the coordination of the field. Critical events influence the path to institutional development on a certain environment, during a period of time.

Hoffman (1999) also argues that the institutional evolution moves among the three institutional pillars developed by Scott (1995). This way, in a given moment of evolution of the field, the regulatory pillar can assure, through rules and sanctions, that a theme is respected by its constituents. Even if the agents respect a given institution that conducts the evolution of the field theme in order not to face sanctions, it is not true to state that these individuals have internalized it. If not, the socially accepted beliefs (which derive from the group's cultural-cognitive pillar) that coordinate their actions might lead them to attempt to reconfigure the dominant (that is, institutionalized) understanding of the theme.

In his research on the evolution of corporate environmentalism in the American chemicals industry, Hoffman (1999) realized that as the evolution of corporate environmental practices occurred in the field, the theme traversed the different institutional pillars. For example, in 1962, writer Rachel Carson exposed and condemned in her book *Silent Spring* (considered to be a critical event) the fact that the pesticide DDT could risk the health of human beings.

The chemical industry, on its side, attempted to reduce the level of environmental risks. At the same time, it presented itself as able to solve those problems: in case it were not able, it would be acting against its own identity. The belief that permeated constituents of the chemical industry was that its technological advances would improve human life conditions. However, the book *Silent Spring* started to question, within the industry itself, the validity of this (cultural-cognitive) belief. Following the book's release, the organizational field of corporate environmentalism took shape. The creation of the American agency of environmental protection (a critical event) and the emergence of NGOs resulted in a sequence of conflicts between NGOs and the industry for the legitimation of the environmental practice. Meanwhile, the Environmental Protection Agency (EPA) acted as a mediator of these conflicts. In summary, in the beginning of the formation of the field, the chemical industry incorporated corporate environmentalism in its activities, due to the pressure from government agencies and NGOs.

Nevertheless, in 1993 — the year that marks the end of the empirical analysis of evolution of this theme, conducted by Hoffman (1999) — environmentalism was internalized as a taken for granted belief among the industry's constituents. That is, there was no longer a need for sanctions in order to enforce the rules of the game, since industry started to take proactive measures in its relation with the environment. In this moment, corporate environmentalism reached a high degree of institutionalization. Thus, it was no longer the regulatory pillar, but the cultural-cognitive pillar that started coordinating more intensively the relations between the chemical industry, the environment and other agents involved with the institution.

Child, Lu & Tsai (2007) followed Hoffman's (1999) method to analyze how the field of environmental protection systems was formed in China. These authors compared their results to those obtained by Hoffman (1999) and emphasized that, because American society is more democratic, the regulations on corporate environmentalism were preceded by strong lobbies, which originated on the institutional entrepreneurship of NGOs and the public. These are the facts that show the role of these agents' normative and cultural-cognitive institutions in the evolution of the corporate environmentalism

field. In China, the regulations on environmentalism followed a top-down model and did not originate from the pressure from NGOs and the public, like in the USA. Critical events put pressure on the government for it to solve problems. Then, the government acted introducing a system of laws aiming at a regulation of industrial practices concerning the environment. Later, the government undertook other activities as the enhancement of the regulatory system and the development of technologies and environmental certifications for the industries. This was done in order to ensure that regulations were respected and that, in time, the institution was internalized by the agents.

2.3 Organizational field and institutional pillars: theoretical concepts for understanding the structuring of the pesticide sector

Zietsma & Winn (2005) *apud* Machado da Silva, Guarido Filho & Rossoni (2006) defend the use of the concept of *organizational field* as the center of debate and negotiation, when aiming at studying how a field is defined based on intense contests between several different constituents with diverse objectives. Furthermore, the authors warn that in order to amplify the power of explanation of how dynamics and shifts occur in a field over time, one should consider both organizations that are eminently involved in the debate, as well as those involved only in the production and reproduction of institutional arrangements related to the theme.

As stated in the introduction, the effects of pesticides have repercussions on the activities of several different agents in a certain context. Therefore, the concept of organizational field as the center of debate and negotiation can reveal the formation of a certain field from the moment that different agents with varied goals and influences compete to establish their definitions of a specific theme. Machado da Silva, Walter & Cruz (2010) argue that the adoption of Hoffman's (1999) concept is because the subjects of their research were contesting the definition of a common theme, the globalization of winemaking. On one side, multinationals defend and elaborate strategies to globalize and standardize the taste of wine. On the other, small local winemakers resist by defending the appreciation of the *terroir*, that is, they advocate for the influence of the local context in the beverage's taste.

In the case of the agribusiness sector, for example, there is a bill proposed by some members of the Brazilian senate to change the name *agrotóxico* (term currently used for pesticides in Brazil). The justification is that it would be used in a tricky way, in order to undervalue Brazilian rural production and adapt the text of the law to the current norms in Mercosur (Gomes & Serraglio, 2017). The Brazilian Association of Collective Health (ABRASCO) (2016) reproduced the point of view of Fran Paula, agronomist who works at the Mato-Grossense Fund for the Support of Seed Culture. The agronomist said that the attempt to modify the name is due to the economic interests of the companies that market and exert considerable pressure on the legislators.

Some researchers stated that Brazilian and Indian governments have pursued a green revolution to improve trade, please agribusiness multinationals and agrarian elites, sustain diplomacy with countries and compete in the market for profit (Motta, 2016; Carvalho, 2014; Stone, 2007; Egorova, Raina & Mantuong, 2015; Melgarejo, 2018).

The present study considers these aspects, focusing on the dispute among different agents over a definition of pesticides, throughout the formation of the field. This work also seeks to analyze the main strategies developed by individuals to move the institutional pillars towards the advance or decline of pesticides in Brazilian agriculture.

In the field of genetically modified seeds, for example, it is well known that the governments of Brazil and India have moved regulatory pillars in order to maintain the widespread use of this technology. It is important to realize that before the legalization of GM seeds in Brazil, there were several conflicts between groups for and against this technology. As an illustration, in 1999 the state of Rio Grande do Sul (RS) hosted in its fields illegal Monsanto GM soy seeds, smuggled from Argentina. In the same year, the state proposed a bill banning commercial cultivation and the sale of genetically modified products for human and animal nutrition.

On their side, sectors for the use of GM seeds used the smuggled soy seeds fact to pressure the state, arguing that the incorporation of GM soy seeds was irreversible. On the other hand, the Brazilian Institute of Environment (IBAMA) asked judicially to participate in the process of judgment, since the National Technical Biosafety Commission (CTNBio) had not required from Monsanto the study and report about the impact of transgenic soybeans in the country. Despite its efforts, The Federal Attorney General's Office (AGU) challenged the decision of IBAMA in the Federal Court of the Federal District and stated that IBAMA could not stand against the government. Clearly, the judgment process of GM seeds can be conceived as an institutional war wherein, after some agents tried to apply a moratorium to GM seeds cultivation, the rural lobbying in the National Congress prevailed, and in 2005 GM soybean was legalized (Pelaez & Schmidt, 2000; Motta, 2016).

In India, there is a similar scenario, in which the government has pushed GM seeds to Indian agriculture through a process marked by an imbalance performance. It takes more into account the interests of the private sector and large farmers than the needs of small farmers. Beyond the fact that farmers' rights in plant protection varieties have been introduced after claims from civil society (Perschad, 2016), the decisions about the political measures related to GM crops have lacked transparency and a holistic vision, which contemplates paths other than third green revolution package (Raina, 2015). Although the government affirmed that GM seeds are safe and a satisfactory technology to Indian society, the process of their institutionalization was marked by the following contradictory and unexpected aspects:

- Considering that the Genetic Engineering Approval Committee's work on the legalization of BT cotton was based on totally confidential data from the field trials, when NGOs questioned about the degree of scientification trials, the government ignored the demand from civil society for transparency and answered that its decision was drawn from outcome of close data (Kumbamu, 2006);
- Field trials for BT cotton did not cover the entire spectrum of cotton-growing areas (Egorova, Raina & Mantuong, 2015);
- BT cotton varieties of Mahyco Monsanto Biotech were sold and illegally cultivated in Gujarat (a similar case to Brazil), while under field trials (Egorova, Raina & Mantuong, 2015). It is worth to highlight that after the Ministry ordered the destruction of the illegal BT cotton, the central government — under requirements of farmers and the state government — reviewed

its decision and pushed the case aside by arresting the Manager Director of the seed company responsible for distributing illegal seeds. On their side, “pro GM crops lobby were quietly delighted that the farmers of Gujarat had proved the market demand for the product and pre-empted the 2002 decision by the GEAC” (Sconeas, 2003, p. 9).

Given the context of the pesticide sector and the theoretical framework listed in this section, this study emphasizes that it would be relevant if future research tried to investigate the following aspects: Events considered as triggers for the institutional development that influenced in the formation of a pesticide field in Brazil and India (e.g. new legislation, environmental disasters or social dysfunctions such as suicides, increase or decrease of productivity); The main agents involved in the pesticide field in Brazil and India; The institutional pillars (regulatory, normative or cultural-cognitive) that have been moved by agents to bring their definitions about pesticides throughout the years.

In the case of the pesticide sector, it is assumed that not only the regulatory pillar has been moved by several agents, for legitimizing or bringing down the use of this technology, through rhetorical discourses, power relationships, co-opting of public agents, among others (Borges, 2014). For instance, according to Dimaggio & Powell (1983), the diffusion of normative patterns come mainly from the professionalization projects. If governments trust in scientists to take the correct decisions that can improve the life of citizens, it is assumed that the normative system (Scott, 1995) of science may have patterns of behavior shared by scientists about the adoption of pesticides as a preferable or desirable technology for human and environmental development.

It is possible to understand that institutions are involved in normative and coercive obligations. However, actors of a certain community frequently internalize these obligations as facts. The community (researchers, consumers, politicians, and other agents) taken them for granted, and such obligations guide their processes of communication and negotiation. In this sense, a norm or an institutionalized practice within a certain social context can be understood as the result of a process, through which obligations, social facts or realities appear in social dynamics with the status of certainty, or of something that has already been decided in thought and in social action (Meyer & Rowan, 1977; Scott, 1995).

Following the logic of the institutional pillars proposed by Scott (1995), one can make the following assumption: if the use of pesticides were to achieve the status of cultural-cognitive institution, the population might be against organics and in favor of large-scale production food that uses pesticides and fertilizers. This plays the role of reproducing a social dynamic that was catalyzed (in spite of controversy) by the work of institutional entrepreneurs (e.g., politicians, researchers, or businessmen from the pesticide sector), aiming at an institutionalization of the product.

One of the important theories to understand this process is the institutionalization process proposed by Tolbert & Zucker (1996). This line of research can offer a wide view of the path that has been tracked since this technology was introduced in Brazil. Moreover, the work of Pierre Bourdieu may give researchers a notion about conflicts that have emerged in this field.

3 CONCLUSIONS

The present text proposed the association of the concept of organizational field to that of institutional pillar. This association is relevant, since in a given environmental institution some agents try to accommodate actions to define an organizational field according to their objectives. Groups seek their interests and, once they have decided how a central element of the functioning of the field must be defined, they tend to reproduce their advantages until the opposing groups cannot redefine the element under contest.

There is an increasing amount of research done to understand the effects of pesticides on the lives of Indian and Brazilian farmers. Considering this, studies conducted alongside the main agents involved in the theme of pesticides in both countries can reveal interesting insights regarding the successful actions that managed to eliminate or reduce the use of the product. On the other hand, it is also interesting to analyze how multinationals that argue for the use of pesticides manage to keep these products within the boundaries of legality, even with the increasing pressure from different stakeholders (e.g. international researchers, Indian researchers, farmers, nongovernmental organizations, among others).

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