

Business Conflict and Risk Regulation: Understanding the Influence of the Pesticide Industry

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Abstract

Despite the criticism, frequent in the literature, of business influence on the formulation of pesticide risk regulation, there has been remarkably little systematic study of this practice. This article discusses Costa Rica pesticide producers' business influence on global and national efforts to improve risk regulation. Generic pesticide producers, selling off-patent chemicals, contest the views of traditional, research-based pesticide companies, which demand stricter application of global regulatory guidelines. These business sectors use different forms of power (as identified in neo-Gramscian theory) for bending regulation to their advantage. The argument developed here builds on neo-pluralist business conflict theory for explaining shifts in environmental governance. It challenges a recently made argument that business conflict increases the state's ability to issue more restrictive environmental regulation. Instead, to truly understand the outcomes of business conflict–environmental governance interactions and the implementation of global environmental standards, researchers should analyze the structural heterogeneity within states.

A common view of the pesticide regulatory process is that legislators and regulators are pliable and bow to pressure from the pesticide industry. Critical literature points to the influential, if not hegemonic, role of business and its power to oppose regulatory measures, given its economic resources to invest in lobbying and promotional campaigns (Dinham 2005; Toleubayev et al. 2011). Business can dominate regulation, particularly in developing countries, because of weaker state institutions, lack of regulatory capacity, and lack of risk information. The industry's promotion of safe use and sustainability pushed states to shift from strengthening risk regulation to public-private investments

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in safe-use campaigns (Sherwood and Paredes 2014). Despite these insightful observations, the literature refers to business's influence on regulation in rather general terms that fall short of a systematic empirical study and theoretical explanation. This article contributes to filling this gap, arguing that we cannot simply assume extensive business influence on environmental regulation. Simply assuming influence ignores the political agency of business and the variability and diversity of business influence (Clapp and Fuchs 2009; Falkner 2008; Newell and Levy 2005).

This article addresses a controversy within the pesticide industry concerning risk regulation and aims to identify the diverse sources of business influence. It describes the strategies of the generic pesticide industry and of research-based companies that want to relax or partially tighten risk regulation. A contentious issue is who may access the risk data (the data on chemical identity, efficacy, and environmental and health safety that are required for product registration). May other companies use these data to start a procedure for equivalence assessment, and seek registration on the basis that their product is equivalent to a product that is already registered?

I analyze this business conflict at the global level and through the highly instructive case of Costa Rica. The actors involved consider Costa Rica a test case for competition within the pesticide industry and for discussion of equivalence assessment and control over risk data at the global level. Costa Rica has very high levels of pesticide use (Galt 2014), a history of environmental awareness and public contestation of pesticide use (Barraza et al. 2013), and a relatively large scientific community studying the environmental and health impacts of pesticide use (Brisbois 2014). I analyze the business conflict regarding equivalence and risk data through the lens of business conflict theory, which examines how such conflicts shape environmental governance (Falkner 2010; Roemer-Mahler 2013). This body of theory focuses mostly on global environmental regimes (e.g., Falkner 2008), but I argue that it is also instructive and necessary to study how competition in global markets, international treaties, and global guidelines shape risk regulation nationally. Global environmental governance thus refers not only to the suprastate or interstate level of regime formation, but also to how global market developments, trade agreements, and norms about risk reduction—spreading through mobile experts and guidelines—interact with local contexts. In other words, we need to examine local contexts, such as those in Costa Rica, as the places where such global processes get meaning and are put into practice, serving as testing grounds for strategy development.

Data collection (in 2008–2009 and 2014) involved twenty-six semistructured, in-depth interviews with state officials ($N = 12$), representatives of the pesticide industry ($N = 6$), a farmers' union ($N = 1$), researchers and science advisers ($N = 5$), and an activist of the Pesticide Action Network ($N = 2$), as well as the recordings of a half-day public meeting about pesticide registration¹ with

1. Co-organized by the author.

representatives of the most important organizations. Data also came from detailed document analysis, including laws, regulations, pamphlets, business meeting minutes, media items, publications, parliamentary reports, and court documents.

Conceptualizing Influence

The locally used labels “Generics” and “Transnationals” (TNCs) serve as a useful shorthand for the two competing sides of the pesticide sales sector. The Generics trade in pesticides that are no longer protected by a patent. The TNCs are the research-and-development-based (multinational) industries that historically have developed most pesticides, such as Bayer and Monsanto. I have developed a theoretical framework from the neo-pluralist perspective on environmental governance and its concepts of business conflict and business influence (Falkner 2012). Unlike structuralist approaches to business influence, a neo-pluralist perspective emphasizes the divergence of business interests and the need to study empirically how this may affect business influence on regulation (Bernhagen 2008; Tienhaara et al. 2012).

Falkner (2012) suggests first identifying the root sources of business conflict: in this case, control over risk knowledge, and thus the possibility of registering a product. The Generics carry out very little research to develop or register new pesticides or spend large amounts on advertising to bring a product to market. With low research and advertising costs, they can compete with lower prices. Any costs incurred for toxicological studies required for first registration would eliminate this competitive advantage. The key divisive issues of enforcing patents and the connected issues of data ownership and confidentiality in the registration process are further analyzed below.

Falkner (2012) also discusses collective business action, such as through business associations. Representative associations lobby internationally in standard-setting forums and nationally influence law-making processes and law enforcement. At the global level, CropLife represents the interests of the TNCs, and AgroCare (founded in 2008) those of the Generics (the Latin American member association is Asociación Latinoamericana de la Industria Nacional de Agroquímicos, or ALINA). In Costa Rica, CAMARA (Cámara de Insumos Agropecuarios) represents the TNCs, and CANAPROGE (Cámara Nacional de Productores de Genéricos) represents the Generics. Firms in the latter group, often founded with Central American capital, operate nationally or regionally. They import products and repack and label them, or make specific formulations with imported active ingredients, but they do not produce active ingredients for pesticides. Below I identify where the strategies of these business associations differ.

The third area of research in Falkner’s (2012) framework—the historical context—is discussed below where relevant. I also researched the fourth area he mentions—interactions between business influence and countervailing environmental social movements but will not discuss it here since no environmental

movements were involved in the formulation of pesticide regulation in Costa Rica during the study period.

Falkner's (2010) neo-pluralism recognizes the structural power of business but emphasizes firms' political agency. Within the neo-pluralist perspective, the concept of agency in relation to structure and power varies. The neo-pluralist literature has an ambivalent relationship with neo-Gramscian perspectives that study the influence of corporate business on environmental regulation (Newell and Levy 2005). Some authors incorporate insights gained from neo-Gramscian analysis (e.g., Falkner 2008), whereas others present their neo-pluralist approach as a critique of, or alternative to, neo-Gramscian analysis. Bled (2009, 157), for example, criticizes the skeptical view of authors like Newell and Clapp, which, according to Bled, is simplistic, because it pictures business as "fundamentally opposed to environmental measures." In contrast, Bled seeks a balance, endorsing a more "optimistic view" based on the positive outcomes of corporate social responsibility efforts. Vormedal (2011, 6) recognizes the importance of the neo-Gramscian analysis of how business strategies are structurally determined and "influenced by the evolution of environmental governance itself." However, Vormedal considers the a priori assumption in such analysis of markets' and market actors' structural power to shape environmental governance to be "a rather deterministic account of regulatory outcomes."

Neo-Gramscian theory does not have to be skeptical, simplistic, or deterministic. Neo-Gramscian studies identify the role of business power in corporate food regimes (e.g., Clapp and Fuchs 2009). This focus does not necessarily imply a theoretical position that only looks at dominant structures and does not recognize agency, as suggested by the critiques of this approach. I draw upon neo-Gramscian theory here because it helps elucidate distinct modes of power. The challenge for combining neo-Gramscian and neo-pluralist perspectives is to discard thinking in terms of an opposition between business agency (and therefore variability in positions toward environmental regulation, from obstructing to shaping it) and structures (social, political, and economic relationships that condition action), without collapsing agency and structure (Joseph 2008). Hence, the presence of a plurality of business strategies and environmental consequences results not only from agency (the apparent view in recent neo-pluralist literature), but equally from the causal efficacy of multiple underlying structures (Joseph 2008). Dominance (or failure) is not fixed in structures, nor is it a simple, fluid, or contingent outcome of agency; rather, it is created within, and related in complex ways to, structural conditions.

A neo-Gramscian analysis recognizes different types of power related to interacting material, institutional, and discursive "relations of force" (Andrée 2011, 175). It is not simply economic size that explains the power of business to influence regulation (as in anecdotal remarks about the lack of restrictive pesticide regulation because of business lobbying or bribery). It may be as important to research the organization (business representation and business-state interaction) and framing of policy debates. The material aspect can be further

divided into direct or instrumental power and structural economic power—for example, when policy-makers prioritize the goal of economic growth over other human values (Fuchs 2007; Ougaard 2010). Fuchs and Ougaard have identified a particular form of structural power rooted in the high technical complexity of some issues, which means that decision making by public authorities depends on technical knowledge and studies carried out by industry. Below I explore this model for the pesticide issue. To analyze the institutional aspect, I discuss interactions between business associations and the state. A final domain of power is ideational (or discursive) power (Fuchs 2007; Ougaard 2010), and I examine here how business associations strategize to set the agenda and construct underlying frames for approaching regulatory issues. I discuss some complex interactions between risk narratives, the scientific construction of facts, and the use of arguments in political encounters. Looking at discursive power does not mean reducing power to discourse (as it always interacts with other domains of power), nor does it deny the materiality of pesticides and the reality of risks and capital accumulation. In short, my analysis goes beyond a methodological individualist interpretation of business agency, firm-specific factors, and the contingent heterogeneity of business strategies, by linking identified business strategies to instrumental, structural, and discursive forms of power. I do not discuss institutional power separately, rather addressing institutionalization and organization in the discussion of the other three types of power.

Contesting Equivalence Procedures: Roots of the Business Conflict

The international organizations most involved in shaping pesticide governance are the UN Food and Agriculture Organization (FAO), the World Health Organization (WHO), and to a lesser extent the UN Environment Program (UNEP). The dominant governance instruments are the International Code of Conduct on Pesticide Management (FAO/WHO 2014; Jansen 2003), a voluntary agreement with an impressive number of different, topic-specific guidelines on how to handle pesticides and how to set up regulatory systems, and the Rotterdam Convention, a binding agreement on prior informed-consent procedures in the international pesticide trade (Jansen and Dubois 2014). The FAO plays a key role in organizing expert knowledge on pesticide management because of its central position in maintaining the Code of Conduct and the Rotterdam Convention. Historically, the FAO has taken the lead in defining the pesticide specifications used by national authorities in regulatory decision making.

The root of the conflict between the TNCs and the Generics lies in a shift in 1999 to a new FAO procedure for specifying pesticides (FAO 1999). Key contested elements include the procedure for establishing *equivalence*, and the role of the FAO/WHO expert advisory committee, the Joint Meeting on Pesticide Specifications (JMPS). The JMPS establishes “unique, robust and universally applicable standards for pesticide quality” (FAO/WHO 2010, 289). The 1999 changes introduced the theme of property rights for risk data into the regulation

formulation. Tellingly, the 1999 edition of the manual starts with a FAO policy statement “regarding procedures for handling unpublished proprietary pesticide data” (FAO 1999, ix), completely absent from the preceding edition (FAO 1995), in which pesticide specifications just referred to the active ingredient (in technical-grade material), independent of manufacturer and manufacturing process. As of 1999, each pesticide specification had to be linked to a specific manufacturer. Moreover, many specification details are no longer published, because they contain proprietary data or confidential business information (FAO 1999). Furthermore, the new specification process demands inclusion of toxicological data on impurities. Thus, since 1999, equivalence has been determined not only by the similarity of the active ingredients in different products, but also, and more contentiously, by possible differences in the nature and levels of relevant impurities. Risk assessors consider impurities important for several reasons. The chemical compositions of pesticide products with the same active ingredient but manufactured under different conditions, from different raw materials, or by different routes of synthesis may differ significantly in impurities, which may affect the toxicological properties of the pesticide (Ambrus et al. 2003, 938). Impurities may themselves be toxic, may affect storage stability of the product, may be phytotoxic to treated crops, or may result in undesirable residues in food or the environment. In some cases, impurities may even potentiate the toxicity of an active ingredient (Ambrus et al. 2003). These new equivalence rules matter from a global environmental perspective because countries use them to draft pesticide regulations, because the rules ultimately determine which pesticides will be allowed into national markets, and because they have triggered contestation of global risk regulation and its supporting expertise.

CropLife and AgroCare wrote position papers and defended their views at the open JMPS meetings. Their views differed in several aspects. CropLife (2011) considered that pesticide specifications will enhance confidence in pesticides and prevent the use of inferior-quality pesticide products, based on three key claims. First, CropLife emphasized that “published specifications alone are inadequate for assessment of equivalence between two actives” (CropLife 2000, 2) because comparison should be based on *full impurity profiles*. CropLife was afraid that countries might grant secondary registrations based only on the published information in FAO/WHO specifications. CropLife argued that the *reference profile* (an approved data set about a particular active ingredient) in an equivalence assessment must be based on a *complete data package* (as required by the new procedure). CropLife did not mention that their own off-patent, older pesticides had mostly been registered without the risk data studies that are now required. This is an important stumbling block to the registration of generic pesticides. Once a reference profile exists, equivalence assessment is possible, but only with a full impurity profile of the candidate material.

Second, CropLife argued that many data submitted for pesticide specifications are proprietary. Thus, science advisers and regulators at multilateral and

national levels should guarantee high levels of confidentiality and protect data use during the period of exclusive use of regulatory data (until the data protection period expires). Third, CropLife called for the strict application of FAO/WHO procedures and for active industry collaboration with international organizations to develop pesticide specifications and procedures, and with country authorities to implement proper equivalence assessment procedures and data protection (CropLife 2000). CropLife (2010) underlined the inherent rigor of the FAO/WHO equivalence procedure as assuring the safety of both users and consumers. CropLife (2011) advised national registration authorities to involve the JMPS in conducting the equivalence evaluation process if reference material or proper procedures and capacity did not exist nationally.

Against this narrative of demanding complete data packages and full impurity profiles, data protection, and the unassailable status of FAO/JMPS, AgroCare articulated a series of criticisms. Most AgroCare narratives began with the utilitarian claim that the generic industry increases the competition in the pesticide market, thus reducing agricultural production costs and increasing agricultural output worldwide (AgroCare 2011), thereby reducing the cost of food for consumers (CIPAC/FAO/WHO 2008). The current equivalence procedure sustains an uncompetitive market for crop protection products and thereby “arbitrarily extends monopoly pricing against the welfare of farmers and consumers” (ALINA 2009; CIPAC/FAO/WHO 2009, 9). The Generics argued that the insistence on product registration with a full data package goes against the principle of equivalence and only serves the TNCs’ monopolies, because it eliminates many active ingredients (older, off-patent ones, previously registered without full data) from the market, whereas these pesticides have been used safely for a long time (ALINA 2010). A second criticism was the nontransparent character of the new equivalence procedure: the content of FAO/WHO specifications is undisclosed, since it contains information that the standard proposer claims to be confidential (AgroCare 2011; CIPAC/FAO/WHO 2011). The Generics argued that data protection (which they support in principle) “should be fair but limited” (CIPAC/FAO/WHO 2008, 11); this meant that reference profiles should be made available and other companies should know what the standard fully entails. In addition, they argued that the nontransparent reference profiles could be qualified as “unfair commercial use” as defined in the TRIPS Agreement (CIPAC/FAO/WHO 2009), and as a violation of the World Trade Organization agreement, which requires “prompt publication of a standard upon adoption” (AgroCare 2011, 6). Third, the Generics objected to the linking of FAO/WHO specifications to a single manufacturer, which could thus capture the international standard (AgroCare 2011). This “eliminates the essence of a quality standard that can be met by different manufacturers” (CIPAC/FAO/WHO 2009, 9). Fourth, although the Generics accept that the JMPS is a legitimate standard-setting organization, they questioned its role as “the exclusive conformity assessment provider of the world” (AgroCare

2011, 7). Because the JMPS Panel determines only a handful of specifications at its annual meeting and because evaluating submissions takes a lot of time, this had been a real bottleneck (AgroCare 2011; FCI 2011).

The new FAO equivalence procedure opened a rift between the Generics and the TNCs in Costa Rica. Many arguments stated in CropLife's and AgroCare's position papers in 2010 and 2011 were also recorded in interviews with CAMARA and CANAPROGE representatives in 2008. In 1998 and 2000, two decrees were issued that made it easier for the Generics to register many of their products without submitting regulatory data if a similar product had already been registered (Decrees #27532 and #28852). When the TNCs contested the latter decree with an appeal to the Constitutional Chamber, the up-to-then unified business association became divided. CANAPROGE split away from CAMARA in 2002. This was an early example of a global process in which new associations of Generics started to contest the TNCs' view on intellectual property issues (author interview with CANAPROGE representative, May 13, 2008).

The contingent, internal factor in Costa Rica that fueled the latent business conflict between TNCs and Generics was the decision of the Auditor General to audit the implementation of environmental laws in 2002. The auditors chose pesticide regulation as their first auditing activity (interview with Auditor General officials, November 17, 2009). This resulted in four reports that identified many defects and gaps in the existing laws and regulations and their implementation. The Auditor General demanded, among many other things, a new regulation (already announced in the Phytosanitary Protection Law of 1998, but never issued); that all applications for pesticide registration be evaluated according to the law; and the reevaluation of all existing registrations, strictly following the criteria stipulated in the law. However, it would take a long time to issue a new regulation. In the meanwhile, the assessment of existing and new applications for pesticide registration was suspended on the grounds that most applications did not contain all required supporting data. This soon led, as an unintended consequence, to what would be called a *reservoir* of unprocessed applications, which grew rapidly to about 480 applications, mostly generic pesticides. This reservoir and the formulation of the new regulation became the core arena of a prolonged battle between the TNCs and the Generics, and between these industries and the regulatory apparatus. At quite an early stage, the Generics felt threatened and appealed to the Constitutional Chamber of the Supreme Court. However, the Chamber dismissed the appeal because the Auditor's reports did not impose any sanction on specific firms or infringe their legal rights (Resolution #13968 of the Constitutional Chamber). In the subsequent events, the external, global environmental governance factor of the new equivalence procedures and international standards for handling proprietary risk data interacted with the internal, national factor of improving the state's function in, and organization of, regulating pesticide risks.

Business and the Formulation of Regulation

To shed light on the interaction between global environmental standards and national regulation in a developing country, I discuss the industry sectors' use of various forms of power to influence the formulation and implementation of new regulations in Costa Rica. I focus on three major regulatory events.

The first was the development of Decree #33495, issued in January 2007, almost three years after the Auditor General's reports had demanded new regulation on pesticide registration. This was the first regulation to require a rather complete set of risk data. It also included a timeline for the re-registration of all registered pesticides (Costa Rica 2007a).

The second event, the progression of Decree #33495 to complementary or alternative regulation, was meant to resolve contested issues. Law #8702, issued in January 2009 (Costa Rica 2009a), aimed to solve the problem of the application reservoir by temporarily reducing the number of requirements for registering a pesticide. Several interviewees nicknamed it the "Law of the Generics," since it presumably facilitated the approval of lodged applications for the registration of generic pesticides. With reference to this temporary law, more than 400 pesticides could be registered temporarily. In 2009, Decree #34903, which modified Decree #33495, also came into force. This decree favored the TNCs, in that it permitted registration only via equivalence when data property rights were not violated.

The third important event was the struggle around the referendum on the ratification of the Central America Free Trade Agreement—CAFTA (a free-trade agreement between the USA, five Central American countries, and the Dominican Republic, signed in 2004). The way in which patents and intellectual property rights were covered by CAFTA was a contested issue.

How did *direct* or *instrumental* power manifest itself in these three events? The most contentious issue from Decree #33495 is illustrative: the transitional provisions, which would allow temporary registration of existing applications with incomplete data. The TNCs disputed the constitutionality of Article 7.3.2 on the determination of equivalence. This article permitted the use of supporting documents of an existing registration as a reference profile, exempting new applicants from submitting all supporting documents required for a first registration (Costa Rica 2007b). The TNCs also wanted the state to honor the Auditor General's provision that new regulation should consider the FAO and WHO guidelines on pesticide matters, which the TNCs said were not being followed. Softening the regulations and regulatory practices would be undesirable from a sustainability perspective and irresponsible, according to the TNCs. The Public Prosecutor recommended to the Constitutional Chamber, which judged this case, that there were no grounds for the data exemption provided by Decree #33495 (Costa Rica 2007b). The TNCs' complaints were partially accepted in this case, but they lost an appeal to the Constitutional Chamber against Law #8702 (Verdict #08917). Nevertheless, essential elements of that

law were criticized by the Attorney General in 2009 (Opinion #C-255), who stated the opinion that the Health Law took precedence over Law #8702. This basically put an end to this emergency law that was meant to relax the constraints on registering pesticides without full documentation, and thus to solve the reservoir problem.

Like the TNCs, the Generics invested money and time in instituting legal procedures against specific elements of laws and regulations in various cases. For example, when the TNCs took a case to the Constitutional Chamber for Law #8702, the Generics responded with an action of unconstitutionality against Decree #34903 (rejected by the Constitutional Chamber in the same year). Looking at these and other data on legal actions, it is clear that the companies did not hesitate to expend resources on court cases.²

Data on other forms of instrumental power, such as direct lobbying, are more difficult to find. The Generics allied with one political party (*Partido Acción Ciudadana*), and on several occasions members of Congress for different parties spoke in favor of their cause during congressional sessions (e.g., Costa Rica 2009b). I found few data on political lobbying by the TNCs, except for one case relating to the formation of the Central American Customs Union. The harmonization of pesticide regulation was an important bottleneck in the 2009 negotiations. Different countries had different views on relaxing the registration of generic products. The companies united in CropLife agreed to lobby against the plan to convene meetings between regulatory officials and the collective industry in the context of the negotiations about the Central American Custom Union (“one should not open the debate”) and, instead, asked each country member to lobby for the acceptance of CropLife’s position paper on equivalence and the reference profile (minutes of CropLife meeting, May 17–18, 2006, El Salvador). This research could not establish any success on the part of the proposed lobby. In sum, the clearest examples of instrumental power are seen in the capacity to start court cases, but these cases by themselves brought little direct success for either the TNCs or the Generics. Their value, I argue here, was their connection to the other domains of power.

Structural power requires more abstraction than instrumental power to identify it. An instructive case is the consensus meetings held when the state was drafting Decree #33495. The Ministry of Agriculture convened two closed meetings with the different branches of the pesticide industry to arrive at a consensus about regulating equivalence, the ownership of data, and temporary registration of products with incomplete risk data. The first, in January 2006, had little concrete impact, but the second, in June 2006, resulted in a signed agreement that formulated transitional provisions that would later be adopted in Decree #33495. These provisions were meant to empty the reservoir of unprocessed applications. The agreement also discussed how the regulatory system

2. Jansen (2017) provides further details on these legal events and provides a timeline of all laws and decrees relevant to this study.

should protect confidential information. However, the consensus reflected in the agreement did not last long. On review, the TNCs were not satisfied with the proposed transitional provisions and once again argued, through legal actions, for alterations to the proposed regulation. They also contested the interpretation of the agreement. The history of the consensus meetings shows the effort that the Ministry of Agriculture put into involving industry in co-drafting the regulation. Over several rounds, state officials tried to co-opt industry for the new regulation and appease the contending business representatives. The state's need for industry to endorse regulation was also referred to in author interviews with state officials and was a recurring trope in newspaper articles about the topic. Joseph (2008) calls this the need for social cohesion, expressed here as the unquestioned role of the Costa Rican state to mediate between and appease different views. The consensus meetings reflected the importance of political legitimacy: the state looking for business approval of regulation. It remains an open question what might have been different if an active environmental movement had been involved. State efforts to forge consensus also revealed a second aspect of structural power—namely, the horizon of state action to make economic growth in general possible, even when business actors opposed each other. Hence, forging consensus was not just an accidental activity but was linked to the importance attributed to pesticides for generating economic growth. This element of structural power surfaced recurrently in respondents' statements (in interviews with the author, at the public meeting, and in media reports), underlining the importance of pesticides in general for agricultural producers and for the country (economic growth, foreign exchange).

Structural power also manifested itself in the institutionalization of so-called emergent property rights, via the Central American Free Trade Agreement (CAFTA). Besides the classical property rights of patents, trademarks, and copyrights, a new construction of rights appeared: the protection of regulatory information or data exclusivity. Article 15.10 of CAFTA says that data provided by a company to register an agrochemical may not be used for the registration of any other agrochemical for a period of ten years. This stipulation aims to prevent the distribution and unauthorized use of confidential information. This way of protecting intellectual property is different from, and supplements, the power of patents and assures a minimum period of monopoly for a first registration. Under the label of confidentiality, the TNC firms withheld risk data studies from the Costa Rican regulators, suggesting that they could not trust the regulatory system to confidentially handle and store their data (interviews with various government officials, November 2009, 2014; public meeting). The mood to accept these new property rights changed with the advent of CAFTA. In 2002, the Attorney General had pronounced that the registration of a product does not give the registrant the right of exclusive use or intellectual property (Costa Rica 2005). Decree #35828, issued in 2010, on the other hand, reads like the implementation of CAFTA and expresses the legal acceptance of exclusive property rights to risk data submitted for registration purposes (Costa Rica 2010). Thus,

the TNCs' power could now be derived from national law incorporating CAFTA's principles.

This brings us to the third form of power: *ideational* power. Despite Costa Rica's environmental image, an anti-pesticide view did not play any role in this whole discussion. The hegemonic view was that environmental and health concerns could be addressed with proper risk regulation, not by banning pesticide use. However, within this dominant perspective, the Generics and the TNCs followed different strategies as to how they linked their views to accepted patterns of thought. The TNCs built their argument by reference to FAO and WHO, thus connecting their view to recognized international expertise (author interviews, document analysis). Key claims referred to the promise of sustainability, obtained by following expert guidelines, and to the promise of product quality, needed by producers. The TNCs had been building linkages with state officials for a long time by investing in joint educational programs for the safe use of pesticides, promoting an image of sustainability.

The Generics followed a different strategy, meant to circumvent the strictures of Decree #33495. They interacted with farmers—who had been pressuring for the registration of generics since the Auditor General's reports—and Congress members to lobby for alternative regulations. A group of farmer organizations led by UPANACIONAL (representing mostly small- and medium-sized farmers) lobbied for a rapid registration of the generic pesticides in the reservoir, stressing in particular the argument of lower prices. In April 2008, the organizations marched with 2,000 farmers in San José, and their reception by the Minister of Agriculture got full media coverage. In November 2008, several members of Congress argued vehemently that registration via equivalence was not possible. They observed that the transitional provisions of Decree #33495 could not be implemented because of juridical limitations, thereby proposing that registration of generic pesticides should be facilitated so as to lower agrochemical prices. The key tropes were anti-imperialist, referring to the power of TNCs, and nationalist, referring to the Generics' support to the country and its farmers through the promise of lower costs (the TNCs were framed as wanting to make big profits and harm the economy). These connections form the basis of the Generics' ideational power. The Generics repeated these tropes when participating in the "No" campaign for the referendum about the ratification of CAFTA in 2007, arguing that only transnational companies would benefit from the data exclusivity provision. The president of CANAPROGE was an active campaigner against ratifying CAFTA. He even traveled to the US to speak on behalf of the "No" campaign (after a very intense and bitter campaign, the "No" campaign lost with 48.4 percent of the votes).

The Generics also fought a discursive battle with legal consequences over the definition of what constitutes a new product; this was important because several regulations state specific requirements for registering a new product. For TNCs, a new product meant every new application for registration, but for the Generics, "a 'new product' shall be defined as one which does not contain a

chemical entity that was previously approved in Costa Rica," as legalized in Law #8686 (Costa Rica 2008, art. 6). This definition allowed generic products to be seen as old products, thereby falling under a less stringent intellectual property regime and regulatory assessment, at least according to the Generics' interpretation.

Despite the different claims (sustainability/quality vs. anti-imperialist/nationalist) and reference to, and mobilization of, different networks to support these claims, the industry in general succeeded in maintaining political support for a risk regulation that would not harm business interests. The combination of instrumental, structural, and ideational power led to business influence in the formulation of regulation, whereby the state mediated and tried to resolve the business conflict.

Why, then, has no regulation fully satisfied the industry to date? Despite all the legal changes and juridical maneuvering, pesticide registration has remained difficult (many applications, including revalidations, could not be approved due to lack of data). Some legislation was a direct result of business pressure (e.g., Law #8702, the "Law of the Generics"); other legislation was not. Both regulation *of* business and regulation *for* business have occurred (Glover and Newell 2004). Such swings in the state's responses correspond to heterogeneity within the state. Of importance are the distinct institutional rationalities prevalent in the different ministries involved in pesticide regulation (Agriculture, Health, and Environment) and juridical complexity (courts consider many more laws and utilize other reasoning—juridical—than the Ministry of Agriculture and the pesticide registration office). For example, the Attorney General and the Constitutional Chamber of the Supreme Court ruled on the precedence of the Health Law, thus annulling or reinterpreting pesticide-related decrees or their implementation by the Ministry of Agriculture.

Furthermore, an important theme in interviews with business representatives and state officials was the division of responsibilities, mandates, and tasks between the agencies involved. The regulatory process itself is not a single activity but contains multiple processes with various state actors pursuing different aims. The judicial branch seemed to speak out against easing pesticide registration (being critical of any deviation in the constitutional rights and obligations of the state). Remarkably, court decisions in Costa Rica made mandatory the FAO Code of Conduct (FAO 2014), which was supposedly a voluntary guideline. In the jurisprudence, international agreements took precedence over national laws. In contrast, the legislative branch involved business associations in the formulation of legislation and demonstrated a more pesticide-friendly bias, adopting arguments from the different pesticide businesses. The executive branch acted heterogeneously, depending on the mandates of the different agencies. Even when major decision-makers said they listened to the industry and were relaxing pesticide registration (as the Minister of Agriculture did on repeated occasions), implementation was incomplete. Ministry officials tended to stick to the rules, thereby assisting in the development of actions that went

against the industry's interests. This bureaucratic-procedural tendency also supported the implementation of stipulated procedures, was rather impartial about the outcomes, and was relatively independent of political influence. The effect was that the path toward more stringency in risk assessment, outlined by the Auditor General, was still influential. In short, business power does not simply dissolve or completely determine state bureaucracy, mandates, and expert interpretations of risk management. This is the case even when political forces within the state, in this instance exemplified by several ministers of agriculture, defend business interests.

At the time of writing, the latest proposal for solving the contention around pesticide registration was *registration by incorporation*—that is registering a pesticide on the basis of registration elsewhere—for example, the US or the EU—rather than doing a full evaluation of all data. The TNCs and the Generics both have interests in the proposed bill (Costa Rica 2014). It gives the Generics hope of being able to register products for which they do not have risk data, and it gives the TNCs the option of registering products without releasing their proprietary data to the Costa Rican government. Future analysis of the final law and implementation will be needed to verify the effects on the business conflict, pesticide registration, and the mandates of various state agencies. Among other things, it will be interesting to see what happens if regulatory decisions in the US and the EU differ with regard to a particular product. Which decision will then prevail?

Discussion and Conclusions

This study of complex strategies, regulatory actions, and narratives enriches the currently understudied domain of how the pesticide industry coproduces the formulation of risk regulation. The business conflict notion derived from neo-pluralist theory was useful for showing how control over risk data and the technical definition of equivalence have become an international and a national political battlefield. Neo-Gramscian thinking contributed by providing a framework for understanding the different types of power wielded to sustain or promote particular interests. This framework was useful to me for analyzing the multiple business strategies and multiple regulatory outcomes in Costa Rica.

My first conclusion is that diversity in business strategies is not simply a result of individual business agency, as in those neo-pluralist views that find neo-Gramscian approaches deterministic, but rather resulted from, and were conditioned by, different forms of structuring. Distinguishing between instrumental, structural, and ideational power made it possible to go beyond a simple concept of lobbying as the expression of the industry's power to defend its interests, whereby the state is a passive recipient just turning lobbying efforts into policy. Businesses did much more than lobby backstage in the registration office to get exemptions for their products (they did that, too, although there is little evidence of how often it happened and how successful it was). Pesticide business strategies

diversified in the 2000s, to include front-stage political activism (marching with mobilized peasants and developing a pro-poor, anti-imperialist political discourse on pesticide availability), enrolling politicians who became spokesmen in the legislative domain, proposing alternative regulations, being involved directly at the negotiation table in deliberations about new regulation, invoking international expertise and risk management knowledge, and seeking judicial decisions to stop unfavorable regulatory outcomes. Examination of the different modalities of power reveals that business influence does not mean simply presenting one's stakes; rather, it is based on structural relationships and taps as well into dominant discursive themes (on sustainability, quality, scientific expertise, economic growth, anti-imperialism, and nationalism). The model used here does not imply that the instrumental, structural, and ideational power categories are empirically distinct. Locating a particular empirical practice in one category and not in another will always be somewhat arbitrary, since instrumental, structural, and ideational forms of power are not independent of one another. As a heuristic device, however, this analytical distinction helps us identify and distinguish a variety of forms of business influence and how they may shift over time. For example, at one juncture a business might strongly emphasize strict risk regulation according to FAO guidelines, whereas at another juncture the same business might be reluctant to provide the required risk data, and thus might act against the principles of these guidelines.

My second conclusion concerns the type of business conflict and influence in environmental governance. In the case studied for this article, capital did not necessarily push for less—or more lenient—regulation (as is suggested in the literature referred to in the introduction). Instead, the comparison of the two groups showed that one demanded stricter regulation and law enforcement regarding the requisites for admission of industrial products, which could be potentially better from an environmental governance perspective, whereas the other group argued for changes in regulation to lower the requirement for risk data. These findings confirm Hough's (2003) suggestion that business may shift its position on risk regulation when conditions change, and Clapp's (2003) observation that transnational corporations may support more restrictive regulation, despite the higher regulatory costs, when this gives them a comparative advantage over generic producers. Bled (2009), Meckling (2011), and Vormedal (2011) have provided other examples of businesses shifting to a more pro-regulatory position (biodiversity, carbon trading, sustainable aquaculture). This literature attributes an important role to businesses that make profits from environmental protective services or products, and that thus are pro common interest, which has made some authors "optimistic" (Bled 2009). This pesticide business case shows that the theory is also relevant when the latter is not the case. It is hard to contend that the TNCs or the Generics produce environmental services or products (although they would argue otherwise). Their shared interest is to sell pesticides, often the same ones. The TNCs also want to continue selling their off-patent pesticides, precisely by demanding strict regulation to halt the entry

of lower-priced competitive products. Nevertheless, the requirement to provide complete risk data in regulatory practice performs an important role from an environmental governance perspective. So, business conflict and environmental governance also interrelate strongly in this case.

My final conclusion concerns the assumption underlying the neo-pluralist perspective (Falkner 2010), that corporations' influence on regulatory processes decreases when there is no unitary business front. I argue that this assumption is not always supported: whether or not such a reduction will happen is contingent on dynamics within the state. The clear case of business conflict in Costa Rica has not been used by the state or civil society to realize a more environmentally friendly regulation. In fact, the state actively tried to unite the industry by asking the individual entities to come up with a single view. If there have been improvements in pesticide risk regulation, this was not through use of the business conflict but because (parts of) laws and decrees were annulled or reinterpreted in light of different institutional rationalities within the state (legalist, with regard to the Attorney General and the Constitutional Chamber, and technocratic and bureaucratic-procedural, with regard to the Ministries of, respectively, Health, Environment, and, to a lesser extent, Agriculture). Increasingly, officials from the Ministries of Environment and Health have opposed interpretations by the Ministry of Agriculture of existing or proposed regulation. This suggests that we broaden business conflict theory (Falkner 2010; Roemer-Mahler 2013) and combine it with a state agency conflict theory to understand the web of power and influence around risk regulation. It also suggests that a structural embedding of environmental governance principles in law, institutions, and organizations is crucial for countering or balancing business power, particularly whenever no active environmental movement has formed around an issue.

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