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FOOLS BREAKING OUT: THE ROLE OF SYMBOLIC AND MATERIAL IMMUNITY IN EXPLAINING INSTITUTIONAL NONCONFORMITY

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In this article, we examine how organizations become less sensitive to the symbolic and material carriers of a prevailing logic and correspondingly enact a deviating logic. Using the highly institutionalized Belgian horticulture industry, we employ a multicase, inductive study of firms that vary in their responses to an emerging logic that diverges from institutionalized norms and practices of their organizational field. We introduce symbolic and material immunity as two essential and interacting attributes predicting firm-level deviation from a dominant logic and discuss factors that enable firms to possess these characteristics.

> Failure is unimportant. It takes courage to make a fool of yourself.
>
> -Charlie Chaplin

A central tenet in institutional theory is that "organizations, concerned with survival and thus legitimacy, take on forms not necessarily because particular forms are technically appropriate but rather because they conform to socially accepted notions of what is appropriate" (Mizruchi & Fein, 1999: 679). In this respect, deviating from such notions, or institutional logics (Friedland & Alford, 1991; Scott, 2008; Thornton & Ocasio, 2008), could be considered "foolish" (Aldrich & Fiol, 1994), as it navigates organizations into situations in which they may lose the legitimacy, the cognitive cornerstones, or the material comfort that stabilize and give meaning to their actions (Meyer & Rowan, 1977; Suchman, 1995).

Yet nonconformity and institutional change seem to be as much an inherent feature of institutions as stability (Clemens & Cook, 1999; Giddens, 1984; Greenwood & Hinings, 1996; Oliver, 1991; Scott, 2008). Although early work on institutional theory primarily focused on explaining "isomorphism" (DiMaggio & Powell, 1983) in organizational forms and behavior, more recent work has explored the ability of institutional theory to explain the conditions that foster change or deviation from such conforming behaviors (Clemens & Cook, 1999; Oliver, 1991, 1992; Powell, 1991; Scott, 2008; Tolbert & Zucker, 1996). Several studies in this latter stream have indicated that institutions work through an interplay of multiple arrangements and levels of influence (Friedland & Alford, 1991; Thornton & Ocasio, 2008) that may produce "institutional contradictions" (Seo & Creed, 2002). Institutional contradictions are the "various ruptures and inconsistencies both among and within established social arrangements" (Seo & Creed, 2002: 225) that produce a dissatisfaction with the status quo (Greenwood & Hinings, 1996) and may instigate a reflection on the "taken-for-grantedness" of institutional arrangements. By making actors within an organizational field (DiMaggio & Powell, 1983; Hoffman, 1999) aware of and open to alternative logics and motivated to adopt them (Greenwood & Suddaby, 2006; Seo & Creed, 2002), institutional contradictions arguably render actors "immune" to the pressures for conformity to a prevailing logic (Greenwood & Suddaby, 2006: 27), enabling them to deviate from it (Seo & Creed, 2002; Greenwood & Suddaby, 2006).

Notwithstanding the value of these studies, they seem to imply that once institutional contradictions are present, actors will naturally shift from one logic

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to another or take action to change a logic. In so doing, these studies ignore instances in which organizations may fail to overcome the hurdles that exist for institutional nonconformity, despite institutional contradictions being present (Ansari, Fiss, & Zajac, 2010; Fiss & Zajac, 2006; Greenwood & Hinings, 1988). After all, one of the key components of institutions is their stability in the face of uncertain and changing environments (Scott, 2008). Furthermore, whereas previous research has focused on the process by which "foolish" nonconformists legitimate themselves to external audiences (Aldrich & Fiol, 1994), it has ignored the simultaneous process of detaching from prevailing prescriptions that comes with institutional nonconformity. Missing from extant literature is an understanding of why organizations facing the same contradiction differ in their immunity to pressures for conformity and how this immunity leads to institutional nonconformity by some organizations but not by others. In sum, we propose the following two research questions: *What factors explain an organization's ability to become immune to existing* and *dominant institutional logics?* and *How does this immunity explain variation in responses to institutional contradictions?*

We set out to understand these dynamics by drawing on the notion that institutional logics consist of both symbolic and material carriers (Friedland & Alford, 1991; Thornton & Ocasio, 1999, 2008; Scott, 2008). *Symbolic carriers* are the rules, norms, and belief systems embedded in an institutional logic, and *material carriers* are the routines, relationship systems, and artifacts that materialize and reproduce them. We propose that variations in institutional nonconformity can be explained by looking at how organizations vary in their immunity to both these symbolic and material carriers. Using a qualitative study in the highly institutionalized Belgian ornamental horticulture industry, where proactive environmental strategies represented a contested deviation from institutionalized practices in the organizational field, we compared three groups of firms that varied in their intentions to deviate from the norms of the sector and their levels of success in doing so. Our results lead to a framework that uncovers how firms build symbolic and material immunity and how their interactive effect explains variation in intention and success.

INSTITUTIONAL NONCONFORMITY AND INSTITUTIONAL IMMUNITY

Institutional Mechanisms of Conformity

Within organizational fields, institutions take the form of an institutional logic (Friedland & Alford, 1991; Thornton & Ocasio, 2008), "a set of material practices and symbolic constructions which constitutes its organizing principles and which is available to organizations and individuals to elaborate" (Friedland & Alford, 1991: 248). People and organizations conform to these institutional logics, because they experience a pull toward conformity through two main carriers in an organizational field.

First, symbolic carriers consist of the rules, norms, and taken-for-granted beliefs that define the socially accepted notions of appropriate behavior and that "furnish guidelines for practical action" (Rao, Monin, & Durand, 2003: 795–796). Conformity is stimulated through these symbolic carriers because people and organizations want to avoid some sort of sanction, uncertainty, or cognitive inconsistency that comes with deviating from these rules, norms, beliefs, and taken-for granted assumptions (DiMaggio & Powell, 1983; Jepperson, 1991; Scott, 2008). For example, Zuckerman (1999) showed that organizations deviating from industry categories predetermined by stock market analysts received lower ratings and correspondingly lower stock prices than similarly performing organizations with an identity that did conform to industry archetypes. Such processes of institutionalization originate in the standardized normative interpretations that are diffused by authoritative bodies in an organizational field (e.g., educators, professional organizations, governments, etc.) or the mimesis of practices that are popular among contemporaries (DiMaggio & Powell, 1983).

Second, whereas symbolic carriers are generally considered the most important carriers of institutions (Scott, 2008), institutions are also reflected in the material artifacts, routines, and relational systems surrounding actors in an organizational field (Friedland & Alford, 1991; Scott, 2008). The governance and reward systems, the physical structure of buildings, relationships, routines, and past contracts and investments may all stimulate actors to reproduce institutionalized practices (Boeker, 1989; Gilbert, 2005; Staw, 1981). For example, Rao and colleagues (2003) reported that the field-espoused deviation of French haute cuisine from classical cuisine to nouvelle cuisine was sometimes hindered by the familial heritage of a restaurant. The existing customer base and hesitance to potentially offend the older generation by questioning the very sources of their success clearly acted as material barriers to institutional nonconformity.

Highlighting this difference in underlying forces and carriers is important, as it helps to identify not only the interplay of constraining and enabling forces that drive organizations to a common organizational template, but also the hurdles faced by

organizations wanting to deviate from or change these templates.

Institutional Immunity, Institutional Contradictions, and Institutional Nonconformity

It has been suggested that organizations need to become "immune" from institutional pressures before they can depart from institutional prescriptions (Greenwood & Suddaby, 2006: 38). Akin to disease immunity, institutional immunity is defined as low sensitivity to a particular set of institutional influences that enables an organization to deviate from institutional logics. Institutional contradictions have been suggested as the most important mechanism triggering such lower sensitivity (Seo & Creed, 2002), as they act as tensions and conflicts between different institutional influences that trigger a reassessment of a dominant logic's perceived absoluteness (Greenwood & Suddaby, 2006; Seo & Creed, 2002). Institutional contradictions emerge when multiple institutional logics with conflicting expectations exist in an institutional field, when the institutional expectations conflict with an actor's interests in efficiency or long-term adaptability to exogenous changes, or when an institutional logic conflicts with an actor's personal values and objectives (Clemens & Cook, 1999; Leblebici, Salancik, Copay, & King, 1991; Oliver, 1991, 1992; Seo & Creed, 2002; Sherer & Lee, 2002).

Recent studies have shown, however, that despite logic contradictions occurring at the field level, organizations can vary in their response to them. For example, the technical, cultural, and political fit between an emerging institution and an organization has an impact on the extent to which and fidelity with which institutional changes are adopted (Ansari et al., 2010). Purdy and Gray (2009) found that state organizations responded differently to conflicting logics depending on their geographic locations. Other studies have shown that changing organizational practices to conform to emerging institutional logics is particularly difficult for existing organizations that have long histories, because organizations tend to develop "inertia" as a result of their desire for stability (Boeker, 1989; Gilbert, 2005; Hannan & Freeman, 1984; Staw, 1981). This may lead organizations to seemingly adhere to institutional influences, conforming only to the symbolic aspects of an institutional logic but decoupling them from their material implications (Basu, Dirsmith, & Gupta, 1999; Fiss & Zajac, 2004; George, Chattopadhyay, Sitkin, & Barden, 2006; Meyer & Rowan, 1977).

Although material factors are one mechanism that induces a variation in responses to institutional contradictions, other studies have pointed at the important but understudied role of the framing of institutional contradictions (Fox-Wolfgramm, Boal, & Hunt, 1998; George et al., 2006). "Framing" refers to the "cognitive processes by which managers understand and 'enact' their organizational environment" (Fiss & Zajac, 2006: 1174) and that may influence how particular logics are made comprehensible and legitimate (Fox-Wolfgramm et al., 1998; Green, 2004; Greve & Taylor, 2000; Heracleous & Barrett, 2001; Maguire & Hardy, 2009; Snow, Rochford, Worden, & Benford, 1986; Suddaby & Greenwood, 2005; Walsh, 1995). George and colleagues (2006), for example, proposed that whether or not organizations deviate from prevailing institutions in response to external changes depends on the perception of their decision makers that these changes will or will not lead to a legitimacy-related gain in resources and/or loss of control. In a similar vein, Fox-Wolfgramm and colleagues (1998) found, in their study of U.S. banks' adoption of more socially inclusive lending practices, that the banks responded differently to this field-level institutional change depending on whether they *perceived* they were already responding appropriately to the emerging logic. As such, different framing patterns have an important influence on the variation in responses to institutional influences.

Also, institutional entrepreneurs understand that institutional contradictions are only the starting point for institutional change. Suddaby and Greenwood (2005) found that institutional entrepreneurs use different framing structures to interpret institutional contradictions than audiences opposing change. Inspired by argument structures used in theology to prove the existence of God, they identified three "theorizations of change": teleological, cosmological, and ontological. "Teleological" theorizations of change are based on the idea that change is the result of purposive action and that active intervention is required to resolve institutional contradiction in a beneficial way. "Cosmological" theorizations of change, on the other hand, depict a natural and causal evolution toward an inevitable resolution of institutional contradiction. Finally, "ontological" theorizations of change base the evaluation of change on whether or not outcomes of institutional contradiction are compatible with a priori premises or intuitions. Suddaby and Greenwood (2005) noticed how proponents of institutional change primarily used teleological and cosmological rhetorics, while opponents mostly employed ontological rhetorics. Framing thus plays

an important role in explaining how institutional contradictions are enacted.

Although the aforementioned mechanisms indicate how institutional influences may be interpreted and responded to differently, scholars lack a coherent understanding of how they play a role in firms' developing immunity to existing logics, enabling firms to detach from them and subsequently enact a deviating one. To gain such understanding requires insight into the combined symbolic and material practices through which some actors in an organizational field gain institutional immunity and others do not.

METHODS

This article draws on a qualitative inductive study in the tradition of theory elaboration (Lee, Mitchell, & Sablynski, 1999), the purpose of which is to extend existing theory by contrasting it with observed events or conflicting findings. As current theoretical perspectives fail to provide good explanations of how firms become immune to institutional pressures and how immunity results in different responses to institutional contradictions, formulating hypotheses for quantitative testing seemed premature. In contrast, qualitative case-based methods are well suited for unpacking complex phenomena about which not much is known (Eisenhardt, 1989; Gephart, 2004).

To minimize external variation beyond the phenomenon of interest, we needed one homogeneous organizational field (Eisenhardt, 1989), defined here as a confined set of organizations that "in the aggregate, constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products" (DiMaggio & Powell, 1983: 148). Furthermore, the boundaries of an organizational field depend on an issue that is of particular importance to these organizations (Hoffman, 1999). In this study, we chose the Belgian ornamental horticulture sector as our organizational field, and voluntary organizational reporting about environmental impact as the issue of study, for three reasons. First, the ornamental horticulture industry represents a homogeneous cluster of firms that face similar relationships with professional associations and that deal with the same governmental and socioeconomic context. Second, like most agricultural sectors around the world, the ornamental horticulture sector is embedded in a highly institutionalized environment, with strong forces for within-industry isomorphism and resistance to external pressures (Coleman, 1998; Lexington, 2009; Montpetit, 2000). Finally, a recently established organization called VMS (Vlaams Milieuplan Sierteelt [Flemish Environmental Plan Ornamental Horticulture]) fosters a logic that is contested within the organizational field but elicits very different responses from its members. As such, the incompatibility of the VMS logic and the traditional logic, as two social arrangements characterized by different rules, norms, and beliefs about what constitutes appropriate behavior in a field, provided the institutional contradiction of interest in our study.

We present more detail about the particular institutional context of the Flemish ornamental horticulture sector and its relationship with VMS in the following section. Our description draws on a series of interviews and focus groups conducted by the first author with bankers, government officials, professional association representatives, and independent advisors active in the sector and on 2002–06 archival data about the industry from the internet, newspapers, professional association magazines, and scientific reports. Our findings indicate that the institutional context of the Belgian ornamental horticulture is characterized by long tradition, egalitarian professional associations, and a tendency toward self-absorption.

The Flemish Ornamental Horticulture Industry and the Natural Environment

The Flemish ornamental horticulture sector cannot be understood without taking its long tradition into account. Firms are mostly passed on from generation to generation and often have histories going back over a century. Given that growing plants requires special skills and knowledge—the proverbial "green thumb"—this passing on of firms across generations has helped to sustain a regional reputation for high-quality products and an adoption of taken-for-granted and highly institutionalized routines, relationships, and commercial practices. As a result, banks favor lending to those individuals who are "born in" the sector, knowing how hermetic and stable the industry and its relationships are. Minimal influx of outsiders into the industry and the little attention given to other sectors or contexts has further reinforced this tendency. Together, these features of this highly traditional context resulted in a very myopic view:

> So it's usually father-to-son. And there is a way of thinking that usually comes with that. There are rather few people that have finished school . . . so they have very little input from a different sector or from a different market. (trade organization representative)

A second important aspect relates to the strongly egalitarian professional associations in the indus-

TABLE 1
Comparison of the Dominant and New Logics

Dimensions	Traditional Ornamental Horticulture Logic	VMS Logic
Archetypical production method	Maximize yields and minimize risk of visual plant degradation or plant loss.	Maximize yields and minimize plant loss by using methods that combine effectiveness with minimal environmental impact.
Information base	Decisions on pesticides are based on their effectiveness in eradicating pests.	Pest control methods are chosen on the basis of their effectiveness and a VMS toxicity code.
Monitoring	Any paperwork is a burden. A grower first and foremost needs to have his hands in the dirt.	Without monitoring it is not possible to measure environmental performance and compare over time or between firms.
Transparency	Avoided and distrusted: will only elicit external meddling.	Disclosing firm-level use of fertilizers, pesticides, and energy and waste treatment is necessary to compare between firms and helps to improve sector legitimacy.
Evaluation	Avoided and distrusted: people are incompetent to understand the complexity of their production; nobody will be really honest in the information provided.	External evaluation and interfirm comparison of environmental impact as a means to learn.
Group dynamic	The slowest in the sector determines the pace of evolution toward more environmental regulation.	Proactive firms build the future of the sector.
Rationality	Why invest in environmentally friendly practices when there is no market demand for it?	A modern business invests in environmentally friendly practices.

try. Growers unite in local guilds, which are in turn represented in two higher-level professional associations. Board members of these guilds and professional associations are mostly elderly and are often retired growers. As a result, the discourse of the professional associations tends to reflect traditional views, which are not necessarily adapted to changing market conditions and social dynamics and strongly promote values of solidarity and egalitarianism.

Finally, the industry strongly tends toward self-absorption, celebrating independence, and loathing external meddling. This attitude is sometimes attributed to the specific profession of growing plants, which is mostly a solitary and repetitive job.

> [They] simply don't accept authority. Rules that are enforced, even though they're socially grounded and justified, are not coming from themselves and are not accepted by them, they'll just say "we'll take care of that our way." (consultant)

The tendency toward self-absorption was further explained through references to the long tradition and connections to aristocracy, but also because recent market dynamics had led to a shift from a munificent to a hostile environment. The unease that came with lower bargaining power with traders, decreasing status and income, and increasing administrative requirements made the sector resistant to any additional form of intervention or change:

> It was almost like freemasonry . . . all interferences with the indoor private settling of [sector] policies were considered to be from people that were "ignorant," from "government officials that basically spent their days doing nothing." . . . "They don't know the sector, who do they think they are that they can just meddle" . . . especially among the growers from generation to generation, they adopt that same rhetoric. (consultant)

VMS: An Alternative Logic

VMS promotes a logic of voluntary environmental reporting that represents a shift from the dominant logic in the organizational field and has met with considerable symbolic and material resistance. Originally started in the Netherlands as MPS (Milieuproject Sierteelt [Environmental Project for Ornamental Horticulture]) in 1995, VMS, founded as a local subsidiary in Flanders in 1997, stresses the importance of proactive environmental strategies and transparent reporting about organizational environmental impacts. It was argued that such activities would yield benefits in terms of sector reputation and the potential for firms to differentiate themselves in the market.

Table 1 provides a comparative summary of how the prevailing institutional logic in the Belgian ornamental horticulture industry differs from the new VMS logic. Shifting from the established dominant logic to the nascent VMS logic was discouraged in the traditional Belgian ornamental horticulture industry, as became clear in the number of symbolic and material barriers mentioned by the interviewees. Table 2 summarizes our data on these barriers.

TABLE 2
Stimuli Perceived in Shifting from the Dominant Logic to the VMS Logic

Stimuli Perceived in Shifting Logics	Example
Symbolic	
Criticism for inviting more stringent regulation	"I get criticized sometimes [for VMS membership] and then people tell me 'you just disclose all those things! They don't have to know all that [pesticide and fertilizer use]. You just show it to them and next thing you know they'll be putting taxes on that!'" (grower)
Ridicule deviations from tradition	"Anyone wanting to manifest himself with something like promoting more women in the governance structures, or 'we should be doing something about environmental issues,' or 'I'm going to join VMS,' these things are just laughed away pretty quickly." (consultant)
Resisting external intervention	"[Growers typically say] 'We are arboriculture growers, it is we that will know how to grow a tree, right, and we're not going to start registering and having us controlled, come on!' So it's the same establishment that resists VMS there too." (consultant)
Ridicule external screening as incompetent	"You see! I knew it wouldn't work, I've always said it, and registration . . . what do they know about growing azalea . . . of course you can't grow azalea without that product." (consultant)
Forcing deviant firms to cryptononconformity	"[VMS members] are certainly not the guys that will stand up and say 'Look we're members, we're in the general assembly [of professional association] here, and we're part of VMS, let's make a plea in its favor.' It was rather 'we're members alright, but we're not going to . . . "come out of the closet" about it, so the speak.'" (consultant)
Unrealistic proposition	"Environment is a hot item, ok! But look: VMS, 100 members, that's peanuts! Because it just costs people money." (professional association representative)
Material	
Lacking financial incentives	"This is the most difficult point of the VMS system at the moment. The consumer does not know VMS. Despite my efforts and registration, I never get a request about what VMS certificate my plants have. Registering with VMS does not lead to added financial value." (grower)
Lacking competencies and infrastructure	"Growers work according to a system of preventive calendar spraying. . . . Among [ornamental horticulture] growers, it [integrated crop control] still encounters some resistance. They don't know what it's about, their knowledge of parasites is inadequate, they fear the system will be too expensive because it is rather labor intensive." (government official)
Approaching retirement	"There are a lot of small businesses here with an owner-manager of about 50 years that don't have a successor. They're not going to enter VMS anymore." (trade union representative)
Lacking supporting advisory services	"For example, you're stuck with a severe aphid infection and you call and ask 'I've got an aphid infection here, what should I spray?' DDVP! Of course, what does the chemicals vendor know about MPS [VMS]? Nothing! He just says 'DDVP is the best product.' It's something else when that chemicals vendor lives in the Netherlands, he'll know 'I can't sell this product to florists, because it results in bad points for them.' The whole system there works on MPS, so everybody has experience with it, same with suppliers and all." (grower)
Lacking supporting downstream market	"When we ask the owner-managers why they don't innovate, they answer that it's because the market doesn't ask them to innovate. The traders themselves aren't really open to innovations either" (government official)

In the prevailing logic, the focus of production is primarily on maximizing yields and minimizing the risk of plant diseases by applying ample fertilizer, pesticides, and other necessary chemicals. In contrast, firms following the VMS logic focus on production methods that combine effectiveness with minimal environmental impact. Firms are motivated to voluntarily provide information related to the use of fertilizers, pesticides, energy, and waste treatment for learning and "benchmarking" between firms and to involve external perspectives and evaluators in this process. Professional associations originally subscribed to the idea of VMS and took positions on the VMS board but remained skeptical about many of its ideas. Firms following the prevailing logic avoid external intervention, rarely seek external advice, and avoid disclosing firm-level environmental information, since their managers fear that this information could be "used against" the firms or the sector and lead to additional regulation or taxes. In addition, VMS membership was regarded as disloyalty to colleagues, as VMS set environmental targets that a majority of growers felt were impossible to reach. As a result, VMS was often disapproved of and ridiculed in conversations among growers, making many VMS members prefer to remain in a state of "cryptononconformity": deviating from the prevailing logic without flaunting espousal of an alternative logic, and not engaging in actively changing the prevailing logic. Together with the absent social and consumer attention (and rewards) for ornamental plants produced in an environmentally friendly way, this lack of social support in the industry

resulted in a very limited and even decreasing number of VMS members. Only 127 growers (6 percent of the industry) were members of this organization at the time of the interviews (MPS, 2006), and numbers have been declining since 2003.

Case Selection

Given that all firms were exposed to this emerging and deviating logic, but differed in their responses to it, the Flemish ornamental horticulture industry represents a particularly suitable context in which to examine the factors that enable firms to manage the institutional hurdles that prevent them from nonconforming. The VMS system allowed us not only to isolate businesses with an *intention* to defect from the prevailing logic and compare them with those without such an intention, but also to differentiate those businesses that were successful in achieving this objective from those that were not. Under the VMS logic, firms collect and voluntarily disclose information about their waste treatment and their use of fertilizers, pesticides, and energy. On the basis of their performance relative to a set of international scientific norms on environmental impact, firms receive an evaluation (on 100 points) in return, and a label that shows their environmental performance as high as A (70–100), or as low as B (55–70), C (15–55), or D (< 15). VMS prevents abuse of the system by carrying out independent audits that check the validity of the disclosed information.

Since high environmental performance ratings are only possible when a horticultural firm adheres to the principles of the VMS logic, VMS performance serves as a good proxy for successful institutional nonconformity. We thus selected three firms with an "A" score as cases of successful institutional nonconformity ("VMS+") and three firms with a "C" scores ("VMS–") as unsuccessful cases of intended institutional nonconformity. In addition, we selected three "non-VMS" firms that acted as polar types (Eisenhardt, 1989) for the two other groups and were identified by key informants as highly conforming to the traditional logic. Although focusing on the variation of nonconformity, we aimed to keep firm size (number of employees), financial performance (independent credit assurance grading), and the main crop type grown similar across polar types. Table 3 summarizes the characteristics of the selected firms.

The primary unit of analysis was the firm, yet we were also interested in how individual organizational decision makers' interpretations of the VMS logic affected organizational responses. Although a decision maker's interpretation of and a firm's response to a contradiction represent different levels of analysis, the small sizes of the firms comprising the nine cases meant that organization-level responses were always and only the result of owner-managers' cognitive perspectives. As such, the condition of homogeneity of decision makers within a firm necessary to relate individual-level constructs to organization-level constructs was satisfied (Hitt, Beamish, Jackson, & Mathieu, 2007; Klein, Dansereau, & Hall, 1994).

Data Sources

We developed case studies of the nine firms by performing interviews and collecting archival data. The interviews were done in three stages. The first stage consisted of interviews with the owner-managers of the nine firms. Questions asked of the VMS members included, "Why are you a member of VMS," "How are you able to achieve your performance," and "What difficulties do you experience in obtaining high VMS scores." Questions asked of non-VMS members were similar but probed owner-managers for reasons why they were not VMS members and for difficulties they foresaw if they were to become members. After each interview, the interviewer wrote a case summary that included both the facts garnered and interpretation and reflections. In the second stage, to assess the accuracy of the owner-managers' perspectives, we compared them with the perspectives of people who were knowledgeable about the firms. To this end, we engaged the VMS director and a government consultant, who both had long histories in the industry and were knowledgeable about each of the firms studied. Whenever information was lacking or did not allow us to make comparisons, we included additional interviews with employees or external consultants who were well informed about the firm involved. Besides checking the accuracy of the case summaries, the interviewees in this round were also asked to resolve remaining inconsistencies and to give additional reflections on a focal firm and its VMS performance. The revised case summaries were then used in a third stage of interviews, again with the owner-managers of the firms and sometimes their spouses or family members involved in the family firm and intended to verify the accuracy of the case summary and to obtain interviewees' reflections on the summary and additions to it. Subsequently, the case summaries were written in their final versions, including the additions and corrections that were made in the last interviews. In total, we had 38 interview contacts, typically lasting between 90 and 120 minutes.

In addition to the primary sources of data we collected, we looked for references to institutional

TABLE 3
Descriptions and Data Sources for Firms Studied

Firm and Relation to VMS[a]	Employees	Financial Performance[b]	VMS Score (Label)	Interviews	Interview Sources	Archival Document Sources
Panamarenko (1; VMS+)	6	5	99 (A)	4	Owner-manager, VMS representative, government consultant, production manager	Company website, magazine interview, published books, internet references, VMS registration
Fabre (2; VMS+)	7	5	97 (A)	3	Owner-manager, VMS representative, government consultant	Company website, VMS registration
Ensor (3; VMS+)	5	5	95 (A)	4	Owner-manager, wife of owner-manager, VMS representative, government consultant, private consultant	Magazine interviews, internet references, company website, VMS registration
Bruegel (3; VMS–)	4	5	58 (C)	4	Owner-manager, VMS representative, government consultant, private consultant	VMS registration
Rubens (1; VMS–)	4	5	57 (C)	4	Owner-manager, VMS representative, government consultant, private consultant	VMS registration
Van Dyck (2; VMS–)	7	6	(D)	3	Owner-manager, VMS representative, government consultant	Magazine report, company website, VMS registration
Memling (3; non-VMS)	3	8		4	Owner-manager, VMS representative, government consultant, private consultant	Internet references, magazine interviews
Bouts (1; non-VMS)	4	7		3	Owner-manager, VMS representative, government consultant	Company website, internet references
Van der Weyden (2; non-VMS)	6	6		3	Owner-manager, VMS representative, government consultant	Internet references

[a] Firm names were altered to ensure confidentiality. Numbers in parentheses indicate the three groupings of "polar type" firms.
[b] As determined by the Euler Hermes Grade database, reflecting the credit risk of the organization based on the financial situation on a 1–10 scale (5 = "average risk," 6 = "above average risk," 7 = "increased risk," 8 = "high risk"; www.eulerhermes.com).

pressures and the behavior of the nine firms in secondary sources as well. We collected archival data on the firms, examining newspaper clippings, professional association magazines, brochures, pictures, and websites from a period prior to the interviews, between 2002 and 2006.

Data Analysis

As is typical in inductive multicase research (Denzin & Lincoln, 2000; Miles & Huberman, 1994; Strauss & Corbin, 1998), we analyzed the data by first building the individual case study summaries, synthesizing and comparing the interview transcripts, archival data, and our field notes collected after the interviews and archival data collection. Throughout this process, the second author acted as a critical reviewer and interrogator of the first author to ensure the internal and external validity of the case summaries and emerging findings. When analyzing the cases, we first compared matched-pair polar types. Subsequently, we used a replication logic to see whether the rest of the cases confirmed or refuted the emerging findings (Eisenhardt, 1989; Yin, 2003). Extant literature was enfolded as insights were developed (Eisenhardt, 1989). We looked for similar constructs emerging from the data, using tables and charts to facilitate comparison (Miles & Huberman, 1994). The iterative process between data analysis, literature enfolding, and writing resulted in a number of propositions that explain the different responses to VMS as an emerging contested logic and the role of symbolic and material immunity in these responses.

FINDINGS

It became clear after the many iterations of our data analysis that successful adoption of the deviating logic depends on the development of two complementary and connected forms of immunity: symbolic and material immunity.

Theories of Change, Symbolic Immunity, and Symbolic Resistance

As mentioned, current theoretical and empirical work has ignored how individual organizational decision makers may cognitively interpret and respond to field-level contradictions differently (George et al., 2006). Since all the organizations in our study were facing the same two contradicting logics but demonstrating different responses to them, we started our analysis at the level of the individual decision maker and sought to understand how the cognitive framing of VMS by the owner-managers of the studied businesses impacted their behavior vis-à-vis the prevailing logic. In particular, our data showed that the three groups of firms differed in their projections of the future envisioned for VMS, as well as in the underlying rationale for this projection. Using these results, we then explored how framing enabled some owner-managers to make their organizations immune to the symbolic aspects of the dominant logic and others did not.

Table 4 summarizes how the owner-managers of the nine firms interpreted the potential future of VMS and how their interpretations affected their sensitivity to the arguments for conforming to the dominant logic. Table 5 compares these constructs for three polar-type firms, Ensor (VMS+), Bruegel (VMS–), and Memling (non-VMS).

Theories of change. From our analysis, it became clear that the three groups of organizational decision makers varied in the way they theorized a future for VMS. Drawing on different causal connections among features and implications of VMS, they formed very different interpretations of its future as a logic. For example, recurring across the three VMS+ firms (Panamarenko, Ensor, and Fabre) was a framing of VMS as an *espoused future*, a purpose-driven change from the present that reflected their intrinsically held convictions and desires. In all three cases, their framing of VMS reflected an assumption that the future was in their own hands and that a better alternative future was needed. The owner-manager of Panamarenko (VMS+), for example, argued:

> When I go to Plantarium [large horticultural fair], in the Netherlands, then I talk about it, because I bring my sign, my VMS sign. And then sometimes people say, "Well, well, are you into that . . . it's so much work and this and that. We just spray and we save a lot of time with it." But I don't listen to them, because I'm convinced that [VMS] is the future. . . . For the plants, for yourself, for the guys that work here. It is very important to me. In the old days, they used to just throw DDT and it lasted a lifetime. . . . That's what happened in the old days. It's now or never that we have to do something about it. And sometimes you can't go any further . . . but anything we can do, we'll do.

In contrast, the owner-managers of the VMS(–) firms Bruegel, Rubens, and Van Dyck framed VMS as part of an *inevitable future*, as a natural evolution of the dominant logic that could not be stopped. As a result, their membership reflected the anticipation of the time that registration of fertilizers and pesticides would become compulsory or when it could lead to higher sales. Underlying their projected future for VMS was a chain of logic built on a rather deterministic view of the world. For them, change itself had become inescapable, and often also very difficult to understand. To reduce uncertainty and avoid risks or missed opportunities, they interpreted VMS as one of a series of changes that were unfolding in their environment to which they needed to adapt. For example, when asked why he became a member, the owner-manager of Rubens (VMS–) answered:

> I don't know, actually. I started with it because you used to hear "It's going to become compulsory, some markets are going to ask you to join it." So that's when I said, I'm going to join. Then we're already used to it, up-to-date.

Finally, the owner-managers of the three non-VMS members, Memling, Bouts, and Van der Weijden, framed VMS as part of an *unrealistic future* that was impossible and unfair. For them, the logic VMS was proposing was incoherent and contained flaws that made it intuitively illegitimate. As mentioned earlier, the most common concern heard here was the lack of financial returns to VMS members. In addition, however, non-VMS members distrusted the voluntary VMS reporting:

> Well, first and foremost, somebody that is a VMS member doesn't get a cent more for his plant, you have to put in a lot more time and energy . . . and they cheat! Because they all have two closets [it is compulsory to keep pesticides in a specifically designed closet]. One VMS closet and one other closet with pesticides. . . . So that's not fair then, is it? I am not into that. (owner-manager of Bouts)

In the three non-VMS firms, the underlying change logic disfavored change a priori. For the owner-managers of these three firms, the low VMS adoption rates were clear evidence of its irrationality. Only if larger scale VMS adoption were achieved would they consider their a priori assumptions. The Bouts owner-manager said:

> If 90% of growers in Belgium would be member of VMS, then I would do it as well. Like I said, [I'm] not

TABLE 4
Cognitive Immunity and Theory of Change

Firm and Relation to VMS	Perceived Impact of VMS	Change Rationale	Theory of Change	Cognitive Sensitivity
Panamarenko (VMS+)	*Espoused future* • Attention for the environment is key to success as a firm and as a sector. • Pollution is irresponsible. • Trends in the Netherlands and other industries show that this is important. • Powerful tool for monitoring and management.	*Purposeful design and active intervention* • Lack of VMS market value is secondary to benefits that come from monitoring. • Transparency stimulates learning. • Flaws in VMS need maturing, but principles are right.	Teleological	Immune
Ensor (VMS+)	*Espoused future* • Sector needs to embrace this as a way to keep up with society. • Self-regulation is better than governmental regulation. • Independent assessment of environmental impact. • Pollution is irresponsible. • Trends in the Netherlands and other industries show that this is important.	*Purposeful design and active intervention* • Transparency is necessary to maintain independence and control. • VMS is not proactive at all if you compare with other industries and countries, we have to take action to keep up. • Flaws in VMS need maturing, but principles are right.	Teleological	Immune
Fabre (VMS+)	*Espoused future* • Sector needs to move to more modern management techniques, such as proposed by VMS. • Trends in the Netherlands and other industries show that the environment is important. • Independent assessment of environmental impact. • Potential future market opportunity.	*Purposeful design and active intervention* • Lack of VMS market value is secondary to monitoring benefits. • Traditional practice is outdated. • Flaws in VMS need maturing, but principles are right.	Teleological	Immune
Bruegel (VMS–)	*Inevitable future* • Registration will become compulsory in the future. • Some successful firms in the sector started doing it.	*Natural evolution* • Better VMS than a system that the government imposes. • Agrees with arguments that it doesn't bring economic value.	Cosmological	Immune
Rubens (VMS–)	*Inevitable future* • Registration will become compulsory in the future. • Potential future market opportunity. • Powerful tool for monitoring and management.	*Natural evolution* • Better VMS than a system that the government imposes. • If majority lags behind, then VMS membership could be a competitive advantage.	Cosmological	Immune
Van Dyck (VMS–)	*Potential trend* • Potential future market opportunity. • Some successful firms in the sector started doing it.	*Natural evolution* • Maybe there will be a market opportunity in the future. • Some leading companies started doing it, falling behind is not an option.	Cosmological	Immune
Memling (non-VMS)	*Unrealistic future* • Logic is impossible and too drastic. • Unfair principles.	*Intuition and a priori judgment* • Everybody cheats once and a while, so how can you trust that the system will work? • Doesn't really know why he's against.	Ontological	Resistant
Bouts (non-VMS)	*Unrealistic future* • Attention for environmental issues is overstated. • Entire system is flawed, unfair and therefore illegitimate. • VMS has not proven itself.	*Intuition and a priori judgment* • Past initiatives have taught him to distrust these kinds of initiatives. • Doesn't see the point in proactive given that environmental requirements in Belgium are far more stringent than those of Eastern European countries.	Ontological	Resistant
Van der Weyden (non-VMS)	*Unrealistic future* • Logic is impossible. • Entire system is flawed, unfair and therefore illegitimate.	*Intuition and a priori judgment* • It starts with voluntary transparency, but it will soon end up in compulsory reporting. • Doesn't see the point to be proactive given that environmental requirements in Belgium are far more stringent than those of Eastern European countries.	Ontological	Resistant

TABLE 5
Theories of Change, Cognitive Sensitivity, and Behavioral Impetus across Three Polar-Type Firms

Dimension	Ensor (VMS+)	Bruegel (VMS–)	Memling (non-VMS)
Theory of change	*Teleological*	*Cosmological*	*Ontological*
Envisioned future	*Espoused future* "For me the most important thing about VMS is the openness towards the external world, including the government. . . . I'm open and if they'd want to ask me "what is it that you do here in your firm": I get independent controls every year to check whether it's really true what I'm saying. I've got something in my hands like: here you go, environment, I'm all ok, I'm doing it. Towards the government, I think, this is a must.	*Inevitable future* "I am convinced that, now with our new minister of agriculture, there's going to be one, such a [compulsory] system of registration. And if we can show that there is already a good system [VMS], then we don't have to make a new one."	*Unrealistic future* "I think they are just too drastic. . . . You have to use this, and you can't use that for this label. I'm saying that is impossible. Endosulfan, you just can't [do without]. . . ."
Change rationale	*Purposeful design and active intervention* "These days, a sector that is hiding, will sooner or later end up in marginality. And that would be undeserved. I believe that a lot of companies, with the appropriate efforts and discipline, can get an A-label with these new norms. The azalea sector and the ornamental horticulture sector should also try to sell itself in this perspective."	*Natural evolution* "[I became a VMS member] because particular colleagues started to do it. . . . When VMS was founded, they asked azalea growers to join and so that's when we joined."	*Intuition and a priori judgment* "I have never been in favor [of VMS]. I don't know why, I have just never been in favor of it." "It's not watertight."
Cognitive sensitivity	*Immune* VMS member	*Immune* VMS member	*Resistant* No VMS member
Behavioral impetus	*Proactive adoption of new practices* "Use Endosulfan once a year or three to four other products? I use the three or four other ones, which costs me more. But I've made a decision to join this system [VMS], so I stick to it." (owner-manager)	*Partial adoption of new practices* "The C [score] this year was because of a product that I used that is not allowed by VMS and MPS [Endosulfan], but I registered. You've got others that use it, but don't register."(owner-manager)	*Continuing old practices* "If you do something, you have to do it well. Or you simply don't do it. So I don't do it."

the first one, but also not the last one [to begin with something]. But how many members are there? 100?

Interestingly, these theories of change held by individual decision makers as frameworks for legitimizing their *own* shifts between logics mapped neatly onto the teleological, cosmological, and ontological theorizations of change that institutional entrepreneurs employ to persuade *others* to engage or refrain from change (Suddaby & Greenwood, 2005). A firm (i.e., an owner-manager) adopting a teleological theory of change tends to view an upheaval as necessary in light of the long-term gain; in our case, firms with such a theory framed VMS as part of an envisioned future. A firm adopting a cosmological theory of change tends to view an upheaval as part of the "orderly evolution of universal laws" (Suddaby & Greenwood, 2005: 46), which reflects the owner-managers who saw VMS as part of an inevitable future. In contrast, the non-VMS members, who saw VMS as part of an unrealistic future, used an ontological theory of change and tended to adhere to an a priori viewpoint that refutes an alternative conception of the future in principle.

Important for our study is that these theories of change served as "cognitive maps" for the owner managers. Based on experience and past "symbolic and material records of action" (Smircich & Stubbart, 1985: 726), cognitive maps represent "connections among phenomena, a story about why acts, events, structure and thoughts occur" (Sutton & Staw, 1995: 378). In other words, they act as lenses through which individuals make sense of the world. Furthermore, besides serving as mental templates that individuals impose on their information

environment to give it form and meaning (Walsh, 1995), cognitive maps serve as the basis upon which future action is predicated (Smircich & Stubbart, 1985). As such, each of the theories of change resulted in an interpretation of VMS that made sense for the owner-managers but also made them insensitive to alternative interpretations. Furthermore, it resulted in different behavioral impetuses.

Cognitive sensitivity. Associated with the differences in theories of change, we found clear differences among the three groups in terms of the sensitivity the owner-managers had for the arguments in favor of or against VMS. More specifically, we found that having a teleological (VMS+) or a cosmological (VMS–) theory of change enabled them to develop a condition we labeled "cognitive immunity." Cognitive immunity is insensitivity of an organizational decision maker to a meaning system that draws his/her organization to conform to a dominant logic. Actors who demonstrated cognitive immunity employed a meaning system that used the same conceptual building blocks that together made up the dominant logic, but reconstituted in a way that the arguments in favor of this logic became void. Writing about cognitive maps, Weick said, "The only place that you can make a significant change is *between* variables. These relationships are what give order to the events you have depicted" (1979: 79). The alternative causal relationships of building blocks allowed the cognitively immune actors to cognitively detach from the traditional logic.

For example, all firms developed arguments about the relationship between two conceptual building blocks: "transparency," a major symbolic aspect of VMS, and "the ability to maintain control and independence." Although the owner-managers expressing an ontological theory of change connected these blocks to formulate an argument against VMS, those having a teleological or a cosmological theory of change interpreted them in favor of VMS. According to the latter, the only way to maintain control over governmental environmental expectations was to be transparent and self-governing. The owner-manager of Ensor (VMS+), for example, had a teleological theory of change and considered the transparency aspect of VMS part of a future in which he could remain proud about the sector. As a result, he envisioned transparency as a means to maintain control over the future of the sector and was insensitive to arguments against transparency as a result:

> These days, a sector that is hiding will end up marginalized, and that would be undeserved. . . . The azalea sector and the ornamental horticulture sector should also try to sell itself on this perspective. The road is open. I think that firms that were in doubt in the past better seize the opportunity to become a member.

Similarly, the owner-manager of Bruegel (VMS–) thought that, in time, the government would make pesticide and fertilizer registration compulsory anyway, which clearly showed his cosmological theory of change. Perceiving these elements of the VMS logic as part of an inevitable future, he argued that it would be better to follow along and maintain control by adopting a system that had emerged from the sector, rather than one developed and implemented by the government. In line with his cosmological theory of change, he viewed "meddling" as a given and considered VMS as the "lesser evil." As a result, he was insensitive to the arguments in favor of the dominant logic, which was to resist VMS because it represented intervention from outside the industry.

> There are also colleagues that used to be a member and that have quit, but I am convinced that. . . . Now with our new minister of agriculture, there's going to be one, such a [compulsory] system of registration, but if we can show that there is already a good system [VMS], then we don't have to make a new one.

In contrast, the owner-managers of Memling, Bouts, and Van der Weijden (non-VMS), drawing on their ontological theory of change, interpreted the interaction between transparency and control quite differently. According to them, there was no way to prevent external intervention resulting from transparency, and VMS was therefore inconsistent with the traditional logic in principle. VMS membership would only invite regulation that would reduce managerial discretion and control and therefore presented a critical problem to these owner-managers:

> It's so much bureaucracy, all for statistics, to show the government [how the sector is doing], while in reality, things are often so different. . . . I don't like to let myself be pushed against the wall, by the government, "You better do this, and if you use that product or that product, then [you will get a certain score]." . . . Come on! Those are things I despise. I don't do it, I am not into that, I like to be free, and so that's why I don't do it [become a VMS member]. (owner-manager, Van der Weijden)

In other words, as a result of their interpretation of the future of VMS and the resulting theories of change they held, the owner-managers of Memling, Bouts, and Van der Weijden (non-VMS) perceived that VMS would lead to a potential *loss* of control, whereas the six VMS members perceived that VMS

would lead to a potential *gain* in control. This finding resonates with recent work (George et al., 2006) suggesting that framing an environmental change as resulting in a potential gain of control is associated with institutional nonconformity, but framing it as a loss of control fosters institutional conformity.

It became clear that owner-managers with an ontological theory of change were also cognitively insensitive, but in their case against the arguments in favor of VMS. For example, they differed substantially from the owner-managers with a teleological or a cosmological theory of change in their interpretation of VMS as being proactive or not while placing VMS in different contexts for comparison. An ontological theory of change made owner-managers use their own organizational field as a reference point relative to other, "less advanced" contexts, but the owner-managers with a teleological and cosmological theory of change referred to other, "more advanced" contexts. Both groups of VMS members (the "+" and the "–" members) referred to the Netherlands (where VMS-like practices already existed) to prove that change was possible or inevitable, as they considered increase in firms' attention to their environmental effects something that was not particularly proactive, since it already existed elsewhere.

> If you go to the Netherlands a lot, then you know, they are a couple years ahead of us in that respect, I always think, and it's going to come over here as well anyway. We will have the same thing over here anyway. If you see how agriculture is evolving, horticulture comes along. (owner-manager, Ensor)

In contrast, the non-VMS members thought that the Belgian ornamental horticulture sector was already very proactive, because they compared its current environmental regulations with past ones and with those of industries and areas stereotyped as very polluting, such as the steel industry and Eastern Europe.

> I think it's a shame that they attack such a small sector. . . . It's almost like we're the biggest polluters out there. I think everything related to the environment, in general, is just exaggerated. Just go 1000 kilometres away from here, and nobody talks about the environment, there they can just pour the soot out of their chimneys and so on. . . . People sling so much mud at agricultural and horticultural sectors when it comes to environmental issues. I have a lot of problems with that. (owner-manager, Bouts)

This latter perspective resonates with the notion of virtuous resistance, which is resistance to institutional change that exists when "an organization's top management feels it is already doing what is being called for by institutional forces" (Fox-Wolfgramm et al., 1998: 120).

Although this insensitivity to the arguments in favor of VMS could have led us to conclude that the non-VMS members had also developed cognitive immunity, a further analysis led us to label this insensitivity "cognitive resistance." Cognitive maps are the result of experiences an individual accumulates, and they serve to reduce the complexity of external information (Walsh, 1995). When such cognitive maps are shared among contemporaries and socially reproduced, they become institutionalized (Green, 2004) and are therefore maintained and reproduced over generations (Scott, 2008; Zucker, 1977). It is known that cognitive maps are resistant to change, even in turbulent markets, especially when they were developed in stable environments (Barr, 1998; Hodgkinson, 1997; Narayanan, Zane, & Kemmerer, 2011; Walsh, 1995). As a result of the social confirmation of the legitimacy of dominant institutional logics, such change-resistant cognitive maps provide a "genetic basis" for the logics' stability. Cognitive resistance is therefore an inherent component of cognitive maps. In contrast, cognitive immunity requires a more active and conscious argumentation that needs to be *developed*. Cognitively immune decision makers are able to negate the social reproduction of a dominant logic only through a reconnection of the causal argument structures of the dominant logic. This difference between cognitive immunity and resistance resonates with the difference between immunity and resistance as defined in immunology (Black, 2001). Both are biological conditions that characterize an organism's capacity to resist diseases or harmful influences, but resistance is genetically determined and persists over generations, whereas immunity needs to be acquired through exposure or vaccination. In a similar vein, we label inertial and inherited insensitivity to competing emerging logics "cognitive resistance" and label insensitivity acquired after exposure to a contradicting institutional logic "cognitive immunity." Cognitive immunity and resistance are therefore fundamentally different mechanisms and have different origins.

Together, these findings indicate that the sensitivity of owner-managers to the symbolic carriers of a competing logic is associated with the theories the owner-managers have about what constitutes legitimate change, which we summarize in the following propositions:

> *Proposition 1a. Organizational decision makers who possess a teleological or a cosmologi-*

cal theory of institutional change have a higher likelihood of developing cognitive immunity.

Proposition 1b. Organizational decision makers who possess an ontological theory of institutional change have a higher likelihood of developing cognitive resistance.

Behavioral impetus. Although the existence of cognitive immunity and cognitive resistance explains the ability of the owner-managers we studied to cognitively detach or not detach from the *traditional logic* in their field, it does not explain how they subsequently varied in their behavioral responses to the field's *emerging logic*. Our data indicated that the owner-managers' theorization of change also influenced how they dealt with the rules, norms, and beliefs embedded in the deviating logic. The comparison among Ensor (VMS+), Bruegel (VMS–) and Memling (non-VMS) is a particularly illuminating example of how firms differed in their theories of change and how they instigated behaviors related to the VMS logic. All three companies grew the exact same plants and faced similar pest risks, in particular aphid infestation, which was a real problem in the industry. The general antiaphid practice in the sector was to use Endosulfan, a very effective and cheap, but very toxic, product that resulted in low VMS scores or even withdrawal of a firm's label. At the time of the interviews (2005–06), it was also already known that Endosulfan would be banned from the market entirely in 2007, owing to European Union pesticide regulations. The comparison of the three firms, shown in Table 5, reveals how the approach toward VMS, the use of Endosulfan, and the perceived logical coherence of VMS were very different.

Owner-managers having a teleological theory of change did not perceive flaws or inconsistencies in VMS as reasons to quit it, but rather as normal growing pains that needed their active input to cocreate the new logic. As a result, they proactively looked for ways to implement the new logic at their firms and live by its principles. Ensor (VMS+), for example, strongly adhered to the VMS rules and completely abandoned use of Endosulfan, despite the substantial disadvantages this gave in terms of cost and labor and the lack of a readily available replacement solution. Consequently, this firm's owner-manager engaged in a proactive search for new production methods and alternative crop protection methods together with his production advisor and combined intensive crop monitoring with a number of alternative, more expensive, products.

> Involvement in the VMS story means making choices. When, soon after I became a member of MPS, I had to control aphids, I knew that Endosulfan was not an option. I used four other products to control the plague in a satisfactory way. Afterwards you learn to keep the infestation pressure below a certain threshold with strict controls and a vigilant eye.

The notion that actors who frame something as an ideal are more strongly compelled to accomplish that ideal and are more willing to abandon practices-in-use for this purpose is well established in psychological studies (Gioia & Thomas, 1996; Higgins, 1998; Liberman, Idson, Camacho, & Higgins, 1999; March & Simon, 1958). When actors frame something as a desired end, they are driven by accomplishment and open to change (Liberman et al., 1999). In contrast, people framing an objective as an externally imposed "ought" are more driven by security and safety to realize their duties and obligations, and they are therefore less likely to abandon safe and secure known practices (Crowe & Higgins, 1997; Higgins, 1998; Liberman et al., 1999). Interestingly, this is exactly the behavior we noticed among those with a cosmological theory of change, who adopted a pace of change that was contingent on the availability and presence of new practices in the organizational field. Since the owner-managers with a cosmological theory of change perceived VMS as part of an inevitable future that was imposed by external institutional forces, they felt unable to change its direction or interact with potential problems they faced in implementing it until such options became available in their organizational field. For example, despite his joining VMS, Bruegel's (VMS–) owner-manager was described as very risk-averse and reluctant to reduce conventional calendar-based spraying of pesticides—including Endosulfan—out of fear of having quality losses or plant damage. Whereas Ensor's owner-manager involved his independent advisor in proactive and experimental improvement of his practices, Bruegel's advisor reported a far more conservative and inflexible approach in Bruegel's production methods, including with regards to Endosulfan:

> I have to say that he sprays relatively more than I let other businesses do. . . . The question [to spray more] mostly comes from him.

As a result of this inflexibility about adopting new behavior to achieve a high VMS score, the owner-manager of Bruegel assumed a schizoid position (Greenwood & Hinings, 1988) in which he signaled an intention to follow the VMS logic of transparency and monitoring but compromised his

efforts to fully live up to the expectations of VMS excellence.

Finally, in keeping with findings in research on cognition that change in organizational action does not occur until cognitive maps have been changed (Barr, 1998; Barr, Stimpert, & Huff, 1992; Hodgkinson & Johnson, 1994), the three firms that possessed an ontological theory of change remained committed to existing practices and were resistant to addressing flaws in the new logic. This was also reflected in Memling's approach to Endosulfan. He touted his ability to refrain from using the product but said that he would buy it if needed. First of all, this indicated his reluctance to adhere to the VMS rules about the product if he viewed it as needed. Interestingly, however, when we checked this statement with his production advisor, it turned out that he did use Endosulfan. This further confirmed that his refusal to become a VMS member because of his distrust of other firms' transparency was also reflected in his own reluctance to disclose sensitive information about his firm. As a result, he refused to become a VMS member or engage in any effort to change the VMS logic. In sum, we propose:

Proposition 1c. Organizational decision makers who possess a teleological theory of change have a higher likelihood of developing a behavioral impetus to bring their behavior in line with a deviating logic.

Proposition 1d. Organizational decision makers who possess a cosmological theory of change have a lower likelihood of developing a behavioral impetus to bring their behavior in line with a deviating logic.

Proposition 1e. Organizational decision makers who possess an ontological theory of change have a higher likelihood of developing a behavioral impetus to maintain their behavior in line with a dominant logic.

Throughout our analysis of the data, we found that the specific size of our cases enabled the owner-managers to translate their own cognitive sensitivity and behavioral impetus into their organizations. Connecting the level of the individual decision maker with that of the organization, we found that owner-managers who were cognitively immune to the dominant logic in this case and had either an active or a passive approach to adhering to the emerging logic were able to build symbolic immunity for their firms. Symbolic immunity is a firm-level ability to neutralize symbolic stimuli favoring conformity to a dominant logic. In a similar way, symbolic resistance represents an organization-level insensitivity to arguments in favor of a dominant logic. Given that this effect of the owner-manager's cognitive immunity and behavioral impetuses on their firms' symbolic immunity is the result of the homogeneity of decision making in the firms (Klein et al., 1994), we therefore propose:

Proposition 1f. Organizations whose decision makers are homogeneous in their cognitive immunity to a dominant logic and their active or passive behavioral impetus to bring their behavior in line with a deviating logic develop symbolic immunity to that dominant logic.

Proposition 1g. Organizations whose decision makers are homogeneous in their cognitive resistance to a dominant logic and their absent behavioral impetus to bring their behavior in line with a deviating logic develop symbolic resistance to that dominant logic.

Business Model Differentiation and Material Immunity

Even though owner-manager's cognitive maps may facilitate institutional nonconformity at the firm level, material hurdles may still prevent organizations from actually enacting the intentions of their decision makers. In the process of breaking with rules, norms, and beliefs embedded in a prevailing institutional logic, an organization will inevitably be faced with routines, artifacts, and relationship systems that reinforce the logic's value (Scott, 2008). In this context, for example, as Table 2 shows, the VMS symbolic system required more vigilant care, monitoring, and paperwork. Many growers considered these time-consuming efforts for which they did not have the skills and for which they were not rewarded in the market. Furthermore, they also did not find the right people in their traditional networks to help them overcome these hurdles.

In our data, however, we found that the successful VMS firms seemed to be immune to such material hurdles reinforcing the value of the traditional ornamental horticulture logic. This "material immunity" was manifested as the organization's ability to neutralize the instrumental incentives favoring conformity to the dominant logic. For organizations to have such material immunity, they had to possess organization-level material structures that represented local differentiated translations of the dominant logic that, in combination, resulted in an incentive system that was conducive to adopting an emerging logic. Since institutions are produced and reproduced in many different organizations and locations in a field, multiple

variations of conformity to the same institutions may exist within it (Seo & Creed, 2002; Thornton & Ocasio, 2008). As a result, organizations may build differentiated manifestations of conformity, which may hold the seeds for institutional nonconformity (Seo & Creed, 2002). This finding emerged while we investigated what material carriers fostered conformance to the dominant logic. Although theorists have stressed that "carriers are of fundamental importance in considering the ways in which institutions change," defining which carriers matter is "elusive" and will change "just as institutional frameworks differ" (Scott, 2008: 79). Our analysis revealed three main carriers at the firm level that reinforced conformity to the traditional ornamental horticulture approach to VMS: a firm's competitive strategy, resource base (including routines and material infrastructure), and relationship systems. Interestingly, these three translations of field-level carriers of the traditional logic at the level of the firm constitute some of the defining building blocks of what we define as a business model (Morris, Schindehutte, & Allen, 2005). Table 6 summarizes our data on how the organizations differed in terms of these material carriers and the resulting effect on facilitating the adoption of VMS principles.

The case of Panamarenko (VMS+) was a clear example of how competitive strategy, resource base, and relationship systems worked together to reinforce following the VMS principles. This firm was geographically isolated from most export firms, so its strategy had to be differentiated in a way that enabled it to attract customers. As a result, the owner-managers sold plants on-site and focused on a niche of rare and exclusive plant varieties. They pushed this commercial strategy further by organizing workshops and exhibitions and constructing walking trails, a bar, and a bed-and-breakfast so people could extend their stays. Customers, often plant hobbyists and general nature enthusiasts, were focused less on price and more on the strength and innovativeness of the plants. Because the owner-manager viewed having customers visit an environment in which a lot of pesticides were used as irresponsible, the firm used biological predators of harmful insects and weeded mechanically:

> So those greenhouses in front are treated only with organic pest control . . . there's no spraying there. We do that because customers get in there and we don't want to have any products used there. . . . We hang small bags there and then people ask "what is that?," "well, that is organic. . . ." Which isn't always easy, you know. Because I have to say, in March, mildew, all those things, that is a serious investment, it's quite costly, organic pest control. (owner-manager, Panamarenko)

Furthermore, because many of the plants were sold on-site, they were exempt from the requirement to sterilize plants destined for export, which further reduced the need for pesticide use. An interesting by-product of selling rare plants on-site was that they had direct contact with their customers. In these interactions, they found out about a plant that was very popular but difficult to find in the market, and they started producing them for export as well. Since traditional exporters did not know how to handle this product, Panamarenko's owner-manager decided to go to trade fairs and retailers himself and leave the production to a production manager. A very rare initiative in the industry altogether, this meant that Panamarenko's owner-manager was away from the firm once in a while. To stay updated on the firm's activities, he asked his production manager to register pesticide and fertilizer use very carefully, using the VMS system. As a result of this local differentiation of the traditional logic at the level of the firm, the VMS registration was seen more as a necessary tool for professional management of the organization than as an administrative burden. Taken together, Panamarenko's strategy, relationship systems, and routines all stimulated following VMS principles.

In contrast to Panamarenko (VMS+), the business models of Rubens (VMS–) and Bouts (non-VMS) strongly fostered the traditional logic and followed the stereotypical strategy in the industry of undifferentiated mass production for export through exporters. Plants were required to be visually impeccable and pest-free, and competition was based mostly on price and volume. As a result, having a VMS label did not result in any market value for these firms, perspective that the exporters they worked with reinforced:

> I haven't had any customer that has asked me "Are you in VMS? You do have an A, do you?" No one asks me. I've asked my customers myself: "Do you think it's a good thing?" and they said "Just make sure your plants are good.'" (owner-manager, Rubens)

Furthermore, independent advisors supported this perspective. Given that they were primarily paid to optimize yields and plant quality, they were reluctant to support growers' following the more risky path of minimizing pesticide and fertilizer use:

> If there are products available in Belgium that are not on the VMS list, then I say: "Guys, go ahead and take those products, please, what is the problem?" VMS is not going to determine your profitability right? (independent consultant for Rubens)

The VMS principles further conflict with this strategy because they require a careful and time-

TABLE 6
Business Model Differentiation and Material Immunity[a]

Variable	Stereotype in Traditional Logic	Panamarenko (VMS+)	Ensor (VMS+)	Fabre (VMS+)	Bruegel (VMS–)	Rubens (VMS–)	Van Dyck (VMS–)	Memling (non-VMS)	Bouts (non-VMS)	Van der Weyden (non-VMS)
Competitive strategy	Mass production for export, differentiation based on cost.	++	++	+	(–)	(–)	(–)	+	(–)	(–)
Routines and material infrastructure	Preventive calendar spraying. Avoid paperwork and delegating production.	++	+	++	(–)	+	+	+	(–)	(–)
Relational systems	Selling plants through traders, who argue there is no market for VMS products. Advice from consultants that focus on minimizing quality deterioration through the use of pesticides.	++	++	+	(–)	(–)	(–)	+	(–)	(–)
Business model differentiation[b]	(–)	++++++	+++++	++++	(–)	+	+	+++	(–)	(–)
Business model conduciveness to VMS logic	No	Yes	Yes	Yes	No	No	No	Yes	No	No
Material immunity	No	Yes	Yes	Yes	No	No	No	Yes	No	No

[a] To rate the deviation of material structures, we assigned a score of "+" if a was deviating, but other firms could be found in the industry with similar deviations. We assigned "++" if a firm was unique in its deviation.

[b] Business model differentiation is the sum of differentiating elements in the strategy, routines, and material infrastructure and relational systems.

consuming monitoring of the plants and use of fertilizer and pesticides based on necessity and timeliness. Both Rubens and Bouts preferred the use of a method called preventive calendar spraying: prescribed doses are preemptively sprayed at set time intervals to reduce the risk of pest infestation and maintain plant quality, regardless of whether or not a need for the spraying existed at the given time or not. When asked whether he would want to refrain from preventive calendar spraying, the Rubens' owner-manager answered:

> We have to do it preventively. . . . I won't stop doing that, we're going to continue doing that. Because there is a chance that you don't see red spider mites. . . . I don't dare give that up. There's too much at stake.

The case of Rubens further shows that the differentiation that comes with local translation of a dominant logic does not always result in a business model that is conducive to the adoption of a deviating logic. As a way of reducing costs, Rubens focused on minimizing the time plants remained at the firm and employed few people. He used externally grown base stock and sped up plant growth by supplying ample fertilizer and toxic chemical growth retardants to ensure harmonized plant growth. Staff scarcity, risk of pests in the base material, and fast plant turnover combined to leave him little time for the more time-consuming and intensive monitoring that VMS principles required.

> Because he doesn't have a lot of time, when new base material arrives at the firm, he prefers to use a cocktail of three products on it, to be sure that the next couple of weeks he doesn't have to worry about [potential pest problems]. (independent advisor of Rubens)

Overall, a consistently replicated pattern across the cases was that when local translations of the dominant logic resulted in differentiated material structures that together shaped a business model supporting the implementation of the VMS principles, the organizations became materially immune to the incentives to conform to the dominant logic. The cases of Van Dyck and Rubens (VMS–), for example, show how an insufficiently differentiated business model, while showing some deviating aspects in their strategy, did not add up to a business model that was able to neutralize the strong forces that encouraged following traditional production and transparency principles. Together, these findings lead us to propose:

> *Proposition 2a. Organizations that have locally differentiated elements in the translation of a dominant logic in their competitive strategy, resource base, and relationship systems have a higher likelihood of developing an organization-level material structure that is conducive to adopting a deviating logic.*

However, since having multiple deviations could theoretically also lead to a business model less conducive to adhering to VMS norms, we add an additional proposition:

> *Proposition 2b. Only when organizations have an organization-level material structure that is conducive to adopting a deviating logic do they develop material immunity to a dominant field-level logic.*

The Role of Symbolic and Material Immunity in Explaining Successful Institutional Nonconformity

To address our second research question, we explored how symbolic and material immunity worked together to explain the variety in responses to the institutional contradiction between the traditional and VMS logics. The results of our analysis show that successful institutional nonconformity was only possible when the organizations possessed immunity on both a cognitive (cognitive and symbolic immunity) and a material level (material immunity). For example, Memling's (VMS+) business model contained some elements that would enable it to adhere to the VMS principles. Its owner-manager had the most innovative advisor in the industry, and Memling used their own cuttings as root stock, which reduced the risk of external pest contamination. Although both Memling's owner-manager and his advisor thus concluded that the material conditions favored Memling's getting a high VMS score, engaging in both the symbolic (becoming a VMS member and reporting environmental impact) and the material actions (minimizing pesticides through careful monitoring and abandoning the use of Endosulfan) were inconsistent with his ontological interpretation of VMS as a logic. As such, Memling was an example of how a symbolic system, as the interplay among rules, norms, and commonly held beliefs, drives an organization to isomorphism with the dominant logic. In contrast, the three VMS(–) members show that symbolic immunity is not enough to ensure successful deviation from a dominant logic. Rather, symbolic immunity was sufficient only for displaying nonconformity with respect to the symbolic aspects of the deviating logic and did not prevent their expressed intentions from being partially decoupled from actual behavior. Only when owner-managers framed VMS as part of an espoused fu-

ture and when their business models gave the appropriate incentives to enact its principles were firms able to deviate successfully. As a result, we propose:

Proposition 3a. Only when organizations possess both symbolic and material immunity to a dominant logic are they be able to successfully deviate from a dominant logic and enact a deviating logic.

Given that the symbolic and material aspects of a logic act to reinforce one another, the question emerges whether the mechanisms that lead to symbolic immunity also influence the development of material immunity, and the other way around.

The impact of theories of change on material immunity. As we have argued before, owner-managers who possessed a teleological theory of change were not only cognitively immune to the arguments in favor of the traditional logic, but were also more open to breaking with past behaviors and to looking for alternative solutions that enabled them to follow through on VMS principles. As such, they built new elements into the various domains of their business models that, over time, enabled them to further develop their material immunity. Fabre (VMS+), for example, focused increasingly more attention to reducing their pesticides and use of fertilizers over the years and adopted VMS registration as one of their core routines. As a result, they considered it "the most important source of information we have now." Furthermore, they experimented with new techniques and practices they came across through their extended network and were thus successful in adopting radically deviating processes and technologies to realize their objectives:

> It sounds a bit stupid maybe, but game repellent, you know that right, plants are sometimes eaten by rabbits and all. Others will then spray with [a very toxic product]. And what do we spray our fruit trees with against game? Tabasco! Everybody laughs at you, you know, but it does give you the results, it's environmentally friendly and it doesn't cost you anything! It's just, when a rabbit tastes it, you know yourself that it's very hot. And what we do is add a product that makes it stick to the leaves and the little trees. (owner-manager, Fabre)

The owner-manager's commitment to VMS enabled Fabre to embrace a series of practices and routines that helped build material structures to sustain VMS adherence.

In contrast, when organizational decision makers developed symbolic immunity as a result of a cosmological or ontological theory of change, they were less willing to abandon traditional practices. In sum, we propose:

Proposition 3b. Organizational decision makers possessing a teleological theory of change are more likely to adopt locally differentiated practices that foster adherence to a deviating logic in order to make their organization materially immune to a dominant logic.

Proposition 3c. Organizational decision makers possessing a cosmological or an ontological theory of change are less likely to adopt locally differentiated practices that foster adherence to a deviating logic in order to make their organization materially immune to a dominant logic.

The impact of local material structure differentiation on theories of change. Although the various impacts of cognitive maps for the interpretation and enactment of external changes are well documented in the literature, it is less well documented how people develop such cognitive maps (Walsh, 1995). Managerial cognition scholars tend to agree that cognitive maps are developed from past experience (Narayanan et al., 2011; Walsh, 1995). Research has shown that an individual's location in a social network determines exposure to institutional contradictions and ability to legitimize deviant behavior (DiMaggio & Powell, 1983; Greenwood & Suddaby, 2006; Haveman & Rao, 1997; Kraatz & Moore, 2002; Leblebici et al., 1991; Rao et al., 2003; Sherer & Lee, 2002), yet our data seem to be more in line with work of Palmer and Barber (2001) suggesting that a person's history may be at least as important as network location. More specifically, the extent to which the material infrastructure of a firm had triggered its owner-manager to experience considerable personal or organizational change and the extent to which it facilitated a broad interaction scope within and outside the organizational field predicted the development of a particular theory of change. Table 7 shows how we measured field location, change history, and interaction scope.

Change history. Since the origin of cognitive maps lies primarily in a person's experience, we probed the data for experiences that the owner-managers had indicated as being important for their view on VMS. From this exploration, we found that owner-managers with a teleological or cosmological theory of change also referred to change as a significant part of their personal and organizational experience, but stability or gradual change reflected the experience of owner-managers with an ontological theory of change. The owner-manager of Panamarenko (VMS+), for example, had essentially no training in ornamental horticulture and

TABLE 7
Field Location, Social Legacy, Network Diversity and Its Impact on the Theory of Change

Firm	Field Location[a, b]	Change History	Interaction Scope within and outside the Organizational Field[b]	Theory of Change
Panamarenko (VMS+)	*Peripheral* • Geographically peripheral • Social leadership roles: 0	*Background* • Educated as a translator, no education in horticulture; learned the trade as a hobbyist while being a police officer and took over the firm at later age. *Involvement in organizational change* • Has introduced several plant innovations and marketing strategies that are rare in the industry; have experience with other deviating practices.	*Role variety (four)* • Producer, developer of new IP protected plant varieties, trader, retailer *Boundary crossing* • Various international contacts through international trading • Member of many organizations within and outside sector	Teleological
Ensor (VMS+)	*Central* • Geographically central • Social leadership roles: 3	*Background* • University college education as car mechanic, used to be a plant trader in family business of his wife, learned the trade when he came in the industry. *Organizational change* • Family business was generally leader in both technological and marketing innovation; have experience with introducing other deviating practices; last years were dedicated to developing new business model.	*Role variety (three)* • Producer, extrader, exsalesman *Boundary crossing* • Various international contacts through international trading • Member of many organizations within and outside sector	Teleological
Fabre (VMS+)	*Middle* • Geographically central • Social leadership roles: 0	*Background* • University education in economics; took over father's business at young age, when father died; had to learn the trade on their own. *Organizational change* • Father suggested to move and not follow general logic; have since adopted several practices that were rare in the industry.	*Role variety (three)* • Producer, salesman, trader *Boundary crossing* • Various international contacts through international trading • Member of many organizations within and outside sector • Involved in local politics	Teleological
Bruegel (VMS–)	*Middle* • Geographically peripheral • Social leadership roles: 3	*Background* • Ornamental horticulture education; born in the industry, spent three months in Germany in early 1980s before joining family business; learned the trade in family business while working with father and took over his father's suboptimal business at later age. *Organizational change* • Firm structure is outdated and ill-located, have had some losses as a result of this in the past; realizes change is needed, and invests where possible, but room for it is limited.	*Role variety (one)* • Producer *Boundary crossing* • None	Cosmological

TABLE 7
(Continued)

Firm	Field Location[a, b]	Change History	Interaction Scope within and outside the Organizational Field[b]	Theory of Change
Rubens (VMS–)	*Peripheral* • Geographically peripheral • Social leadership roles: 0	*Background* • Ornamental horticulture education, born in the industry and learned the trade in family business while working with father and took over his father's suboptimal business at young age. *Organizational change* • Firm structure is outdated and investment agenda is focused on quickly catching up and professionalizing the firm. • Try to adjust assortment and look for new market opportunities.	*Role variety (one)* • Producer *Boundary crossing* • Base material is sourced from foreign companies, to which he's traveled	Cosmological
Van Dyck (VMS–)	*Middle* • Geographically central • Social leadership roles: 0	*Background* • Ornamental horticulture education, took over his father's agriculture business and learned the trade on the go and via professional association exchanges. *Organizational change* • Has been aggressively investing in expansion of the firm and adopting new technologies. Aim to be among the leaders or early adopters of innovative technologies. Added new plants in assortment.	*Role variety (one)* • Producer, salesman *Boundary crossing* • Has done some visits to long term customers abroad and has been on organized business trips abroad in the past	Cosmological
Memling (non-VMS)	*Central* • Geographically central • Social leadership roles: 4	*Background* • Ornamental horticulture education, born in the industry, but started new firm, learned the trade at home. *Organizational change* • Has only recently begun to invest in new infrastructure because son indicated he wants to take over firm. • Classic assortment.	*Role variety (one)* • Producer *Boundary crossing* • None	Ontological
Bouts (non-VMS)	*Central* • Geographically central • Social leadership roles: 3	*Background* • Ornamental horticulture education, born in the industry, took over family firm, learned the trade at home. *Organizational change* • Has not changed infrastructure. • Classic assortment.	*Role variety (one)* • Producer *Boundary crossing* • None	Ontological
Van der Weyden (non-VMS)	*Middle* • Geographically central • Social leadership roles: 1	*Background* • Ornamental horticulture education, born in the industry, learned the trade at home. *Organizational change* • Firm structure is outdated and investment agenda is focused on gradually catching up. • Continue old assortment.	*Role variety (one)* • Producer *Boundary crossing* • None	Ontological

[a] We measured field location by looking at how geographically distant an organization was from the center of the field and by counting the number of social leadership positions it had within the field. A social leadership role encompassed every leadership position a person held within an organization. So being chairman of both the local guild and the field-level professional association counted as two roles.

[b] We measured roles by recording every unique economic or social leadership role a respondent mentioned.

had acquired his firm at a later age. Unlike many other owner-managers born in the industry and acquiring their firms from their families, he departed from the career as a police officer he had had until then when he decided to buy an ornamental horticulture firm.

> In the plant world, I'm sort of a maverick. . . . Most here are generation to generation. . . . I'm glad that I have a neutral view on those things.

Fabre's owner-managers (VMS+), who *did* acquire the firm from their parents, represented an example of a significant change history that existed despite their being born in the industry. As a result of their father's early passing, they had been left to discover how to develop a successful firm on their own and so retained many fewer intergenerational norms than other firm inheritors.

> We have always been innovators and that is also partly thanks to—well maybe it's awkward to put it that way—but that our father died so young. I was 20, my brother 23 and we had to take all decisions ourselves. There was nobody that . . . while most growers that inherit the firm from their fathers, they will have their father looking over their shoulder and they would never do what we did back then. (owner-manager, Fabre)

Although this quote reflects a time in the beginning of the 1980s, this self-willed and action-oriented management approach was maintained in all aspects of the owner-managers' decision making over the years. Along similar lines, the owner-managers of both Bruegel and Rubens (VMS–) had inherited firms in which investments had been delayed to the point that the firms had become entirely outdated. To keep pace with market evolution, they were very focused on executing investment agendas that made their firms more up-do-date.

> My father was quite prudent. So when we took over, we told ourselves "Go horse go!" . . . It's been a continuous construction site here. (owner-manager, Rubens)

In contrast, the owner-managers of Memling, Bouts, and Van der Weijden (non-VMS) were very reluctant to try out new things. The plant assortments they grew, their client bases, and even their physical infrastructures were still the same or very similar to those of their father's businesses. Memling and Van der Weijden had introduced changes, yet in a very prudent and gradual way. Van der Weijden, for example, only put up a barn when customers started asking for it and the owner-manager figured that such an investment had become unavoidable.

> For me, investments need to pay back very quickly. That's also the reason why we waited so long to put up the barn. . . . I think it's better to go step by step.

In keeping with the cognition literature stating that previous experience triggers the development of cognitive maps, it seems that the owner-managers for whom personal and organizational change was a significant part of their experience also developed theories of change that were more conducive to considering change as an option. In contrast, owner-managers who had experienced more stable personal and organizational histories seemed to have theories of change that were open to change only if it was fully proven to be needed. In sum, we propose:

> *Proposition 3d. The more organizational decision makers have experienced personal and organizational change, the higher the likelihood of their developing a teleological or cosmological theory of change.*

> *Proposition 3e. The less organizational decision makers have experienced personal and organizational change, the higher the likelihood of their developing an ontological theory of change.*

Interaction scope. When analyzing the network position of the owner-managers, we quickly saw that there was no clear association with the theories of change held by the firms. Emerging from the data, however, was the fact that the successful firms had much broader varieties of contacts both within and outside the organizational field and that this was the result of possessing multiple economic roles and boundary-crossing contacts. Whereas the adoption of multiple roles exposed them to multiple perspectives *within* Belgian ornamental horticulture, boundary crossing brought firms into contact with alternative institutional logic perspectives *outside* the industry. This construct is similar to Greenwood and Suddaby's (2006) construct of "boundary bridging" but is different in the sense that boundary bridging occurs when organizations grow to occupy more than one organizational field and as such bridge their original field's boundaries. Our concept of "boundary crossing" is defined as the mere establishment of connections outside the boundaries of the organizational field, and this may or may not be a result of the size of the firm. Together, the variety (Harrisson & Klein, 2007) of interactions increased the interaction scope within and outside the organizational field, and as such the odds of being exposed to structurally separated spheres that held different interpretations of the institutional contradiction between VMS and the

traditional logic. For example, through their experience as traders, the owner-managers of both Ensor and Fabre (VMS+) had seen the Dutch material support system for MPS production in action and had also visited a wide range of firms that had achieved excellence in the system. Having seen these examples with their own eyes, they became less sensitive to the argument that combining excellence in VMS and profitability was impossible:

> In retail, he sees the increasing trend towards registration, production standards and GAP norms. Firms that are in direct contact with large retailers no longer doubt the necessity of VMS registration. (VMS newsletter interview with owner-manager, Ensor)

Interestingly, for Panamarenko, Ensor, and Fabre (VMS+), having a broad interaction scope was also the result of vertically integrated business models that combined multiple economic roles within firm boundaries. All three firms had experience with trading and selling plants in the marketplace in addition to their production experience. Since strict barriers are usually maintained between growers, between traders and growers, and between growers and higher-level professional association decision makers, having a vertically integrated firm enabled these owner-managers to bridge the "structural holes" (Burt, 1992) that separated these normally distinct role spheres within the confines of their own firm. Such boundary-bridging contacts not only exposed the firms to diverging perspectives on the future of the traditional logic, but also increased their sense of control over their own futures. As such, a teleological theory of change is consistent with their previous experience with their particular material structure.

> An azalea grower in Lochristi is not used to selling his product. . . . Belgian exporters, they control what is bought and sold. And they also go to trade fairs. . . . While I go myself to IPM [a big trade fair] in Germany, that's where all giants go and I go there with my small stand. Why? Because I want to promote [my particular plants]. Those people are not able to sell my plants, so I have to do it myself. . . . But that's how you learn, you make contacts, you learn what's possible. Because if you stay in your firm, then you don't hear, you don't see and you don't know what's happening. And that's the way you hear who's good at what, who's interesting. (owner-manager, Panamarenko)

In contrast, the non-VMS members and the unsuccessful VMS members had far more narrow interaction scopes. Their economic roles were limited to production and, except for a few trips on the part of the Rubens and Van Dyck (VMS–) owner-managers, none of them had frequent personal exposure to foreign firms or other organizational fields. Previous cognition research has shown that managers with experiences in more complex or diversified roles (Calori, Johnson, & Sarnin, 1994; Hodgkinson & Johnson, 1994) also develop more complex cognitive maps to accommodate their roles. Furthermore, role accumulation has been shown to make actors tolerant of discrepant views and to expose them to various sources of information (Merton, 1957; Sieber, 1974; Stryker & Burke, 2000). Such tolerance and positivity toward deviating perspectives has also been shown to increase when multiplicity of roles connects an actor to structurally separated groups in an organizational field (Roccas & Brewer, 2002). Thus, the limited role interaction scope of the non-VMS and the unsuccessful VMS members was more conducive to the adoption of theories of change that cast the external environment as something incomprehensible (cosmological) or that were intolerant of alternative viewpoints to begin with (ontological). In sum, we propose:

> *Proposition 3f. The broader the interaction scope of an organization within and across the boundaries of an organizational field, the higher the likelihood of its developing a teleological theory of change.*

> *Proposition 3g. The narrower the interaction scope of an organization within and across the boundaries of an organizational field, the higher the likelihood of its developing a cosmological or ontological theory of change.*

DISCUSSION

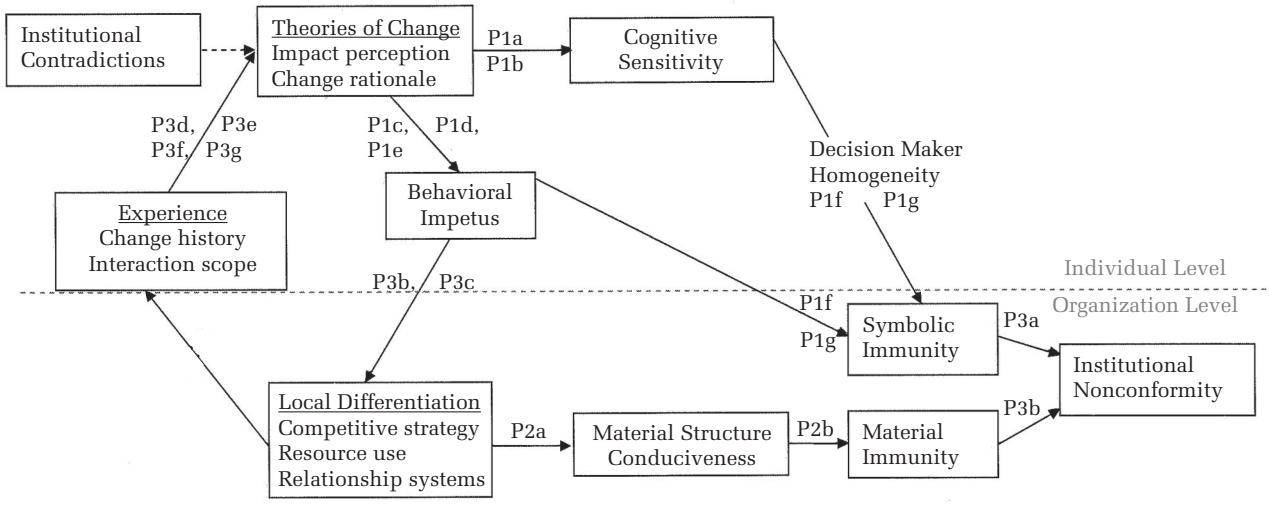
We motivated this study by asking two research questions: What factors explain an organization's ability to become immune to existing and dominant institutional logics? and How does this immunity explain variation in responses to institutional contradiction? Drawing on three sets of case studies, we propose that variations in responses to institutional contradictions can be brought back to differentiating between immunity to both the symbolic and material carriers of institutional logics. Symbolic immunity emerges from the cognitive maps that organizational decision makers use to connect a deviating logic with future change. When these "theories of change" are teleological or cosmological in nature, they desensitize their decision makers to the meaning systems that would otherwise make their endeavors seem foolish (Aldrich & Fiol, 1994). In contrast, firm decision makers' framing the deviating logic with an ontological theory of change renders them symbolically resistant to

change. Second, multiple local differentiations of the dominant logic in the organizational structure of a firm increase the likelihood that the resulting business model neutralizes the material hurdles that would otherwise discourage deviation from prevailing institutions and result in the material immunity necessary for successful institutional nonconformity. Finally, although both versions of immunity have different origins and offer immunity to different aspects of an institutional logic, they also need to be present together for an organization to successfully deviate from the existing dominant logic. We summarize and illustrate these findings in Figure 1.

We believe this study provides three important insights. First, our findings contribute to a better understanding of how embedded agency emerges within firms in an organizational field. Whereas previous research has been instrumental in identifying the external sources and contingencies that predict when firms deviate from institutional pressures for isomorphism, an examination of the organization-level microprocesses that explain variation in successful deviation has mostly been neglected (Lawrence, Hardy, & Phillips, 2002; Thornton & Ocasio, 2008). For instance, dialectic theory shows how institutional contradictions at the level of the organizational field provide the seeds for disengagement from institutional influences (Seo & Creed, 2002). Network location theory has shown how the location of an organization in an organizational field explains its exposure to such institutional contradictions (Greenwood & Suddaby, 2006; Leblebici et al., 1991), and studies based on resource dependence theory and social movement theory provide insights on how the specific content of institutional contradictions may trigger nonconformity (Greenwood & Suddaby, 2006; Oliver, 1991; Rao et al., 2003; Sherer & Lee, 2002). Finally, rhetoric theory has shown how institutional entrepreneurs may use an organization field–level discourse illuminating institutional contradictions within a field to legitimize deviating behavior (Green, 2004; Green, Li, & Nohria, 2009; Suddaby & Greenwood, 2005). These studies illuminate processes external to an organization as impulses for deviation, but they fail to acknowledge that actors, despite being exposed to these cues, may differ in their response to them and in their success to deviate from institutional practices.

In this study, we connect these various literature streams and show how each of them sheds light on a particular mechanism of responding to an emerging deviating logic. More specifically, our data point out the strong necessity for a combined analysis of both symbolic and material aspects of institutional change. Although much theoretical work has emphasized the dialectic between symbolic and material aspects of institutional logics (Friedland & Alford, 1991; Scott, 2008; Thornton & Ocasio, 1999, 2008), empirical work on institutional nonconformity has neglected the dual and interacting influence of these structures. A quote from one of the interviewees comparing the adoption of VMS principles with quitting smoking made us realize the need to become immune both on a symbolic and a material level. To withdraw from an addiction and avoid relapse, one not only needs to be cognitively and affectively convinced of the need to withdraw (Baker, Piper, McCarthy, Majeskie, &

FIGURE 1
The Role of Symbolic and Material Immunity in Explaining Institutional Nonconformity



Fiore, 2004) but must also break with old routines and relationships and create a new identity that excludes the addiction (Helmuth, 2001; McIntosh & McKeganey, 2000) and " reverses the premises that may produce alcoholism and other problems" (Weick, 1979: 88). Whether or not the contradictory aspects of the challenging logic emerge as a result of resource dependencies, inefficiencies, incompatibilities, or misaligned interests, we propose that both symbolic and material immunity are necessary assets needed to withstand the "temptations" of reverting to a prevailing logic.

As a result, insights about the influence of discourse and rhetoric on institutional change can be broadened from interorganizational dynamics to include processes at the level of the individual decision maker in a firm. For example, we extend and elaborate the literature on structural antecedents of institutional change by showing its influence on the interpretation of institutional contradictions by the individual organizational decision maker. Whereas past research has shown that network positions as diverse as marginal (Haveman & Rao, 1997; Kraatz & Moore, 2002; Leblebici et al., 1991), elite (Rao et al., 2003; Sherer & Lee, 2002), and boundary-bridging (Greenwood & Suddaby, 2006) are all associated with deviant behavior, we found that structural features and network positions of organizations are important to the extent that they produce an experience with alternative viewpoints or change. In keeping with the notion that experience shapes cognitive maps (Walsh, 1995) and that experience-based cognitive maps serve as the lens through which new events are interpreted (Cohen & Levinthal, 1990; Narayanan et al., 2011; Walsh, 1995), this finding begs future research to take into account the past of a decision maker's network position and experience with change as much as the network position or status itself (Palmer & Barber, 2001).

Our study context also sheds new light on other studies in which nonconforming firms were seen to coexist with conforming firms, such as the series of studies by Rao, Durand, and Monin on institutional nonconformity in French gastronomy (Durand, Rao, & Monin, 2007; Rao et al., 2003; Rao, Monin, & Durand, 2005). Several of our findings resonate with quotes in their work. For example, one chef illustrated a lack of material immunity to obstacles to defecting from classical cuisine when he lamented that it took him 15 years to bring his restaurant to the deviating nouvelle cuisine, constrained as he was by the expectations of loyal customers and family influence in the restaurant (Rao et al., 2003: 809–810). Yet although Rao and colleagues introduced the importance of identity-discrepant cues that induced actors to abandon traditional logics, beyond the scope of their work were the firm-specific processes that explained how these cues were processed at the individual and organizational levels of analysis. We stress the importance of the dual role of symbolic and material immunity in explaining firm-level deviation: a symbolically immune firm is unable to deviate from institutional prescriptions without material immunity and vice versa. Building on these insights, future research could further explore this relationship between material immunity and the coexistence of multiple logics in organizational fields. For example, the coexistence of logics in organizational fields could depend on the presence of different viable business models and competitive strategies that are mutually incompatible as a result of different forms of material immunity.

Despite our vigilant care to the rigor of the research process, our findings are not without limitations. Given that we chose to limit our study to a single industry, our findings may lack applicability to other contexts. In this regard, we determine a number of contextual factors as important to our findings, opening up opportunities for related research. First, the ornamental horticulture sector in Belgium is experiencing high levels of competition and even hostility and has a very traditional population. It may be interesting to see whether the same capabilities we identified will emerge in sectors where "business as usual" is profitable and has interesting future perspectives. Second, all the firms in our study were very small, and their behavior thus reflected the decisions made by their owner-managers. Examining how the complex interactions between multiple decision makers in a firm influence organizations' gaining symbolic immunity holds considerable promise for future research. Finally, the institutional logics surrounding the Belgian ornamental horticulture sector were able to provide the necessary tools for which the proactive businesses were looking. An alternative conclusion might have been developed if the institutional context surrounding the organizational field was less munificent in solutions or had similar institutional logics. This raises new questions related to the speed and scope of an actor's institutional nonconformity. For example, what happens when alternative solutions are simply not there? What do organizations do while they are waiting to become materially immune? In such contexts, the importance of collaborative efforts to create inexistent resources may become more important and may require the development of new institutions. Our study is positioned alongside an alternative stream in institutional theory that has investigated

how institution creation occurs in light of "institutional voids" (Aldrich & Fiol, 1994; Maguire, Hardy, & Lawrence, 2004). Seo and Creed (2002) introduced the notion of "praxis" to describe how firms engage in developing a new institutional setting; our study peeks into the process by which firms legitimize an alternative yet perceived as inferior logic that takes up a position alongside a dominant logic without replacing it. However, since the deviation from institutional logics may hold the seeds for the creation of new institutional arrangements, future work may investigate how the processes of institutional nonconformity can lead to or are akin to the processes at work in institution creation.

Conclusions

The question of how actors are able to break away from the very institutions that give meaning and stability to their actions has occupied institutional theorists for many years. With the comparative case study analysis presented in this article, we were able to present a multilevel model that shows how firms can deviate from institutional prescriptions when they become both symbolically and materially immune from their influences. Although framing institutional nonconformity as part of a teleological or cosmological theory of change rendered organizations symbolically immune, they needed to harbor multiple local differentiations of a conforming business model that also made it conducive to adopting the new logic to become materially immune. Furthermore, although particular theories of change can instigate the adoption of new material structures, material structures may expose organizational decision makers to experiences that form the basis for theories of change. If, as Charlie Chaplin said, "Failure is unimportant. It takes courage to make a fool of yourself," we would add that failure especially awaits those fools that are not symbolically and materially immune.

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