

CULTIVATING THE NICHE: A STUDY OF THE ORIGINS AND
CONSEQUENCES OF STANDARDS-BASED CERTIFICATION
ORGANIZATIONS IN THE U.S. ORGANIC FOOD INDUSTRY

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Standards-based certification organizations (SBCOs) as a source of market order have been largely neglected as a topic of study by social scientists, particularly when compared to other sources of order such as the state and the market. This dissertation presents three papers that examine the origins of SBCOs, their impact on broader regulatory structure, and how they influence market entry and exit rates in the U.S. organic food industry.

The first paper, “Fences and Gates: An Inductive Case Study of Standards-Based Certification Organizations in the U.S. Organic Food Industry,” employs qualitative evidence to develop a typology of SBCOs and then quantitatively assesses what facilitating conditions led to the founding of distinctive SBCO forms in U.S. states. Findings from this paper suggest that the codification of standards and certification processes initially served as a “fence” that established a boundary around the concept of organic but which subsequently served as a “gate” by which industry outsiders entered the organic industry and engendered endogenous field-level change, significantly altering the trajectory of the market.

The second paper, “Mechanisms Generating Variation: Regulatory Change in the Organic Food Industry,” empirically examines how different SBCO forms influence variation and evolution in the content of industry law. This approach moves beyond extant dichotomous conceptualizations of regulation that dominate institutional analyses of regulatory structure. The results of this paper provide answers

to questions of when and under what conditions private governance organizations influence variation and evolution of industry regulation.

The third paper, “Certifying the Harvest: The Role of Standards-Based Certification Organizations in Market Entry and Exit Dynamics,” examines how SBCOs, through key processes of creation of standards, advocacy, verification of compliance, and endorsement, influence patterns of market entry and exit of organic producers. Drawing on state-level and firm-level data sets spanning a 15-year period (1986–2000), I show that SBCOs stimulate entry into the market and that the certification they provide to individual firms inhibits market exit and moderates the competitive effects of increasing form density.

BIOGRAPHICAL SKETCH

Brandon Lee received his undergraduate degree in political science and anthropology from Brigham Young University in 1999. During his undergraduate studies, he spent a year conducting ethnographic research on land tenure, indigenous legal systems, and linguistics in Spanish-speaking communities in Mexico and K'iche-speaking communities in Guatemala. After graduation, he directed student field study programs in Mexico and Guatemala and served as a consultant to the energy industry. He received his M.S. in organizational behavior from the School of Industrial and Labor Relations at Cornell University in 2003 and received his Ph.D. in the same field and school in January 2007. He recently accepted a position at London Business School as an assistant professor of strategic and international management. Brandon is married to Josie Lauritsen; their son, Noah Benjamin, was born in June of 2004.

For Josie

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PAPER 1:
FENCES AND GATES:
AN INDUCTIVE CASE STUDY OF STANDARDS-BASED CERTIFICATION
ORGANIZATIONS IN THE U.S. ORGANIC INDUSTRY

INTRODUCTION

Recent theoretical and empirical work underscores the central role that audiences¹ play in the construction and maintenance of form identity, product categories and classification structures (Zuckerman 1999; Pólos, Hannan, and Carroll 2002; Rao, Monin and Durand 2003, 2005). Organizational scholars argue that the identity of a particular organizational form/population “inheres in the expectations, assumptions, and beliefs held by agents . . .” and that “ownership of an organization’s identity resides within an organization’s audience rather than within the organization itself” (Hsu and Hannan 2005:476). These audiences, therefore, wield substantial power to influence the fate of organizational populations. For example, Zuckerman (1999) demonstrated that firms that are not easily categorized by securities analysts into pre-existing industry classifications are viewed as less legitimate and suffer a discount reflected in their stock price. Complementing Zuckerman’s study, Hsu (2006) shows how the evaluative schemata developed by individual movie critics shape their own subsequent decisions regarding the movies they review. As these schemata become more coherent, movies belonging to favored genre categories tend to receive greater critical attention. Wade, Porac, Pollack, and Griffin (2006) explore similar processes associated with *Financial World’s* ranking of exemplary CEOs. They find that while stockholders initially value these rankings (positive abnormal stock returns following the announcement of the awards), over time the effects dissipate and become negative in succeeding months. CEOs materially benefit from the award yet

¹ “Audiences” refer to “collections of agents with an interest in a domain and control over material and symbolic resources that affect the success and failure of the claimants in the domain” (Hsu and Hannan 2005:476).

face heightened expectations about future performance, and CEO compensation continues to improve as long as return on equity remains positive. However, if return on equity turns negative, compensation for awarded CEOs is lower than for CEOs who never won an award for an equivalent level of performance.

Despite sustained interest in how such third parties impact the fate and dynamics of organizational forms, there is scant research on the origins of such audiences and the classification structures they employ (but see Bowker and Star 1999). As Pólos et al. note, “The framework we propose . . . requires simply that such codes come into existence and that controllers of valued resources use these codes in granting and withholding access to the resources . . . *we simply assert that certain social codes exist and get enforced, without specifying who does the enforcing and how*” (2002:95–96, emphasis added).

To address this theoretical gap, this paper explores the origins and variation of standards-based certification organizations (referred to hereafter as SBCOs) in the U.S. organic food industry. By SBCO, I mean an organization whose primary purpose is to create and promote standards, verify the compliance of other organizations to those standards, and formally acknowledge that an organization has met the standards through the conferral of a certification, endorsement, or accreditation. Engaging in collective action to develop intra-industry standard-setting bodies as a way to establish a product’s identity and stabilize exchange is an important strategy for entrepreneurs seeking legitimacy for their nascent industry. These bodies “set the bar” and evaluate whether or not firms meet that standard. Such accreditation/certification processes are central to continued maintenance of well-established fields such as health care (Ruef and Scott 1998; Scott et al. 2000), higher education (Zajac and Kraatz 1993; Casile and Davis-Blake 2002), nonprofits (Litwack and Hylton 1962; Singh, House, and Tucker 1986), and college sports (Stern 1981; Washington 2004). Although there is a

significant amount of research on the legitimation processes of accreditation, there is relatively little work that considers the origins of such bodies in nascent markets.

To uncover key conditions/antecedents and mechanisms that lead to the establishment of SBCOs, I employ both qualitative and quantitative evidence to develop an inductive case study of the U.S. organic food industry from 1973 to 2000. I gathered data on all founding events of organic SBCOs in the United States from 1970 to 2000. This time frame captures the founding of the first SBCO and tracks all other SBCOs founded through 2000, when federal standards dramatically changed the market landscape. This context provides a suitable arena to examine the founding and evolution of the SBCO as a primary source of industry governance² over an extended time period.

Using a multi-method approach, I draw on archival data sources and over 20 interviews with organic growers and SBCO employees (past and present, including presidents and directors). Adapting Rothschild and Whitt's (1986) typology of collectivist-democratic and bureaucratic organizations, I first illustrate how SBCOs within the organic food industry varied along five key dimensions: source of solidarity, authority structure, social control/relations, incentive structure, and specialization. After categorizing these various forms of SBCOs, I focus on the temporal and geographic patterning of SBCO founding and quantitatively assess what types of facilitating conditions predict the founding of each form of SBCO. While a substantial body of research has examined temporal variation in broader types of industry governance structures and their impact on industry and organizational dynamics (Campbell, Hollingsworth, and Lindberg 1991; Ruef and Scott 1998; Scott

² Governance structures refer to "all those arrangements by which field-level power and authority are exercised involving, variously, formal and informal systems, public and private auspices, regulative and normative mechanisms" (Scott et al. 2000:172–173). Given the central importance of SBCOs to markets and yet the paucity of social science research on their influence on organizational fields (Arhne et al. 2000), I bracket my discussion of governance in this paper to SBCOs.

et al. 2000), it has neglected the possibility and implications of spatial variation in their emergence and importance. While this work counters institutional determinism by emphasizing temporal variation and contingency, there is additional theoretical value in exploring the antecedents and facilitating conditions that generate unique types of governance organizations in geographically differentiated locales.

The findings of this paper are consistent with extant research that demonstrates how the emergence of new types of economic activity and the infrastructure that supports them often require and always benefit from a supportive ideological base (Stinchcombe 1965; Aldrich and Fiol 1994; Rao, Morrill, and Zald 2000; Scott et al. 2000:174; Simons and Ingram 2004). In the context of the U.S. organic food industry, early organic growers collectively organized to distinguish organic from ordinary food by developing a set of processes and practices of how organic food should be cultivated. They collectively acted to codify these practices in standards and certification procedures that allowed them to create a “discursive opposition” (Campbell 2005:51) to conventional agricultural practices and products by which they demarcated a solid jurisdictional boundary around the organic food category. In this way, early SBCOs and the standards and certification processes they developed served as “fences” differentiating their products from conventionally produced food in the marketplace. However, this extensive theorization (Strang and Meyer 1993) and subsequent codification led to the diffusion and transposition of the organic concept to different locales that became instantiated in a host of unique forms of SBCOs, enabling the entry of “movement outsiders” to begin to populate the market and engender change among all participants (including incumbents) in the marketplace. In this way, SBCOs served as “gates”—providing a means by which outsiders to the organic movement could access, participate in, and significantly alter the trajectory of the growing market.

This understanding provides insight into questions of endogenous field-level change in institutional theory (Greenwood and Suddaby 2006). I find that geographically differentiated locales provide seedbeds for the emergence and development of unique intra-industry governance arrangements. As these arrangements diffuse and are “translated” (Czarniawska-Joerges and Sevón 1996; Campbell 2005) to fit local social and institutional contexts, they become sources of institutional variation and contestation as spatially dispersed pockets of economic activity are knit together through industry growth and consolidation. These processes provide insight into how industry-generated governance structures facilitate “market incursions into previously protected fields” (e.g., Zelizer 1978; Thornton and Ocasio 1999; Ahmadjian and Robinson 2001; Lounsbury, Ventresca, and Hirsch 2003), which represent a “pressing need for research” (Davis and Marquis 2005:341).

In the next section, I focus on the development and origins of third-party certification organizations in the organic food industry. I then use quantitative data to illustrate the factors and antecedents that drive heterogeneity in SBCO organizational form. I conclude with a discussion of the various ways that the study of SBCOs can expand our understanding of institutional change.

THE ORGANIC FOOD MOVEMENT AND INDUSTRY GOVERNANCE

The early North American organic movement built upon earlier food reform movements such as the early vegetarian and whole wheat crusades, the pure food campaigns, and the back-to-the-land movement.³ Its chief advocate in the United States was J. I. Rodale, a publisher-turned-organic farmer. In the early 1940s, Rodale purchased a farm in Pennsylvania and, with no experience as a farmer, drew heavily on the work of a cohort of scholars and farmers⁴ who believed that agriculture was

³ See chapter three of Peters 1979 for a review of these movements.

⁴ Prominent pioneers of organic agricultural thought and practice and their writings include: F. H. King, *Farmers for Forty Centuries, or Permanent Agriculture in China, Korea, and Japan*, 1911; Rudolph

better understood and practiced through biological and ecological principles. Important organic farming practices used and tested by Rodale included green manuring, drainage techniques, composting, and soil aeration. These practices were grounded in the belief that all waste must return to the soil to replenish necessary nutrients and minerals, creating an unbroken chain of health from waste to soil to plant to animal to human.

To advocate organic farming practices more widely, Rodale launched a magazine in 1942 called *Organic Farming and Gardening*. The magazine served as a “meeting place” where readers exchanged ideas regarding their organic agriculture experiences (Rodale 1942:14). Rodale also founded the Soil and Health Foundation (which later became the Rodale Institute), through which he published highly influential books that became key sources of information for pioneering organic farmers. In his 1948 book, Rodale attempted to formalize the concept of organic agriculture by issuing a creed of “organiculturists,” outlining the fundamental principles and practices of organic agriculture:

Organiculturists are: . . . opposed to artificial or chemical fertilizers . . . make compost by Sir Albert Howard’s Indore process . . . see soil as a living, breathing entity which requires that crops are rotated and that land must lie fallow at regulated intervals . . . observe the Law of Return, restoring to the soil all plant residues that came from it . . . reject the use of poison sprays in orchards and on farm crops . . . are not in favor (at least at this time) of the use of human excrement or sewage sludge on food crops . . . and are trusted with the sacred trust of producing food that will impart health to the people who consume it. As a patriotic duty he assumes the obligation to preserve the fertility of the soil, a precious heritage that he must pass on, undefiled and even enriched, to subsequent generations. (p. 68)

Rodale’s early efforts to generate interest and support for organic food were largely unsuccessful. In the first year of publication, Rodale’s magazine had only ten

Steiner, *Agriculture: A Course of Eight Lectures*, 1924; Sir Albert Howard, *An Agricultural Testament*, 1940; and Lady Eve Balfour, *The Living Soil*, 1943.

subscribers. However, the virtues and value of organic food became increasingly salient as broader movements surrounding environmentalism drew the public's attention to the dangers of pesticides and other agricultural chemicals (Carson 1962). During the 1960s and 1970s, organic agriculture and its associated practices resonated with an increasing audience of gardeners, farmers, and consumers. By 1960, subscriptions to Rodale's publications had risen to 260,000. By 1980, subscriptions to *Organic Gardening* reached above 1,300,000.

As interest in organic farming grew, maintaining the integrity of the organic concept became paramount for movement farmers and consumers. As a 1972 article in *Organic Gardening and Farming* emphasized, "We've all got to raise our voices and let the rest of the country know that organic is our word, that it means something to us, and that we are going to defend it to the best of our ability" (Rodale 1972:44). In an effort to fend off misrepresentation and fraud, initial solutions offered by movement insiders included growing the food yourself, buying from a trusted farmer, or enquiring about the retailer's definition of organic and his relationship to the farmer. Despite these short-term solutions, Rodale (1971) realized that the development of a viable organic market would require a more systematic verification method: "Eventually, a foolproof organic certifying procedure will have to be developed, or the commercial market for unchemicalized food will not develop" (p. 74).

In 1971, under Rodale's supervision, Organic Gardening and Farming (OGF) initiated a pilot organic certification program in California. The program consisted of obtaining a commitment from each farmer to build or maintain three percent humus content in the soil within five years. An organic seal was developed to identify the commitment, commodity, and location of the farmer. Soil analyses, residue analyses, and personal inspections were also part of the program (Allen 1971:81). The OGF certification program grew to include regional groups in twenty states. After two

years, OGF phased out the certification program because it was believed that “certification programs are best developed by organic farmers and the people directly associated with the distribution and consumption of their harvests, on a grass-roots, regional basis” (Foote and Goldstein 1973:89). Rodale’s pilot program was discontinued in 1973.

Following the discontinuation of this program, a myriad of certification organizations cropped up across the U.S. during the next thirty years. While significant variation existed in these organizations in terms of their geographic scope, motivations, organizational structures, target clientele, and procedures, their primary functions included the establishment of standards and the certification and verification of “organically grown” claims from farmers. This involved extensive paperwork, annual and spot inspections, various crop and soil sampling, payment of dues and fees, and an agreement to abide by practices and rules set by the certification organization. Over time, certification organizations achieved significant normative, extralegal power to deal with those growers not measuring up to the standards. That power was manifest in SBCOs’ ability to prohibit a certain crop to be sold as certified organic, to impose fines, and to decertify a grower not in compliance with the standards and required procedures. In these matters, the burden of proof nearly always rested on the suspected grower (Guthman 2004). As such, SBCOs clearly retained substantial power not only in defining the parameters of what organic included, but also in determining who could actively be a player in the emerging market.

Early standards creation and certification efforts in the 1970s were organized around local nonprofits that primarily represented the interests of small, organic farmers (whose products and anticapitalist ideologies were largely ignored by mainstream agribusiness). As the organic food market grew in the 1980s, the Organic Crops Improvement Association (OCIA) entered the certification field by developing

an international, federated structure that facilitated the entrance of larger farms and agribusiness interests into the emerging market. Finally, in the mid-1980s (and particularly in the early 1990s), state governments established their own certification agencies, and private certification organizations began to populate the field.⁵ The emergence and growth of SBCOs in the U.S. organic food industry exhibited fairly distinct temporal and spatial patterning. Figure 1.1 shows the temporal emergence of SBCOs in the U.S. organic food industry from 1970 to 2000 and Figure 1.2 shows their spatial emergence.

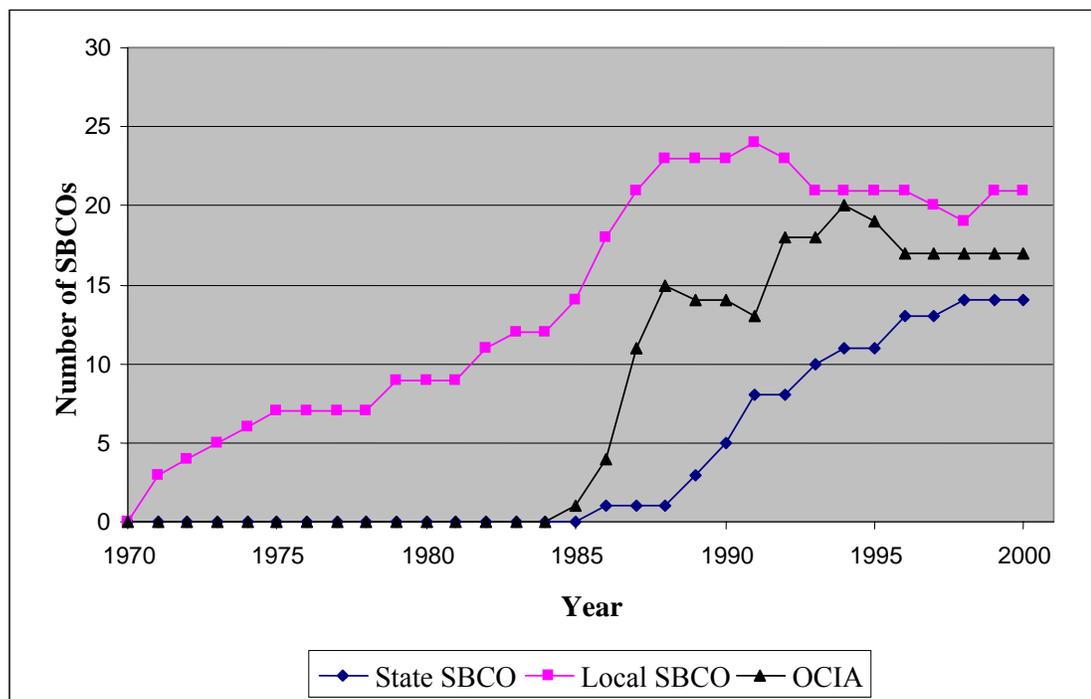


FIGURE 1.1: CUMULATIVE NUMBER OF SBCOs, 1970–2000

⁵ Information on private certification organizations was not readily forthcoming, and although they captured much of the certification market (particularly the certifier Quality Assurance International), data were not available on the states in which these for-profit certifiers operated. Furthermore, during the study period, only six for-profit certification organizations populated the field, making statistical analysis difficult.

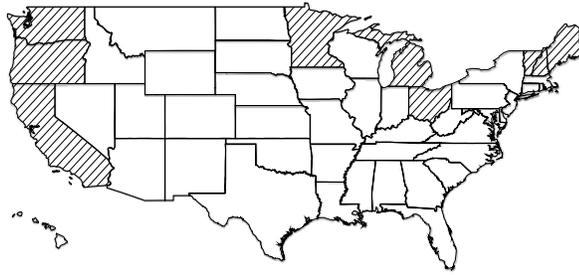
In the remainder of this section, I draw upon interviews and historical archival data sources to describe these three categories of certification organizations.

Local Nonprofit SBCOs

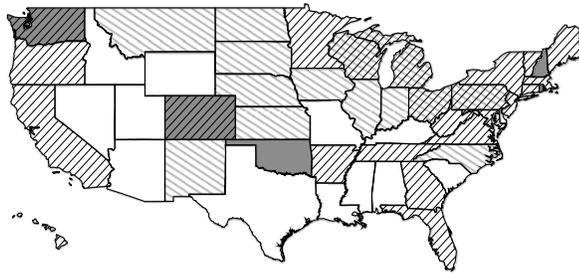
By local nonprofits, I refer to SBCOs that were incorporated as nonprofit organizations at the intrastate level and were formed by local organic growers. These organizations almost exclusively certified growers within their state of founding (although some in later years of the industry began to certify beyond the borders of their founding state). Following the termination of the OGF program, the California Certified Organic Farmers (CCOF) became the first organization to independently certify growers. In the first newsletter published by CCOF (1974), the founders of the organization wrote,

We feel that the primary purpose of our organization is to rid the organic food industry of the phonies. As an organization and as individuals, we are dedicated to this purpose. By offering to the public organically grown food that has been certified by our organization, we feel that in due time all consumers will be able to walk into health food or natural food stores and be certain that he is buying organically grown food which it is so labeled. Our individual dedication to this organization is not for personal profit or glory, but merely for the protection of the consumer and the honest members of this industry. To this cause we have all devoted much time, effort and money and for this cause we will continue. (p. 2)

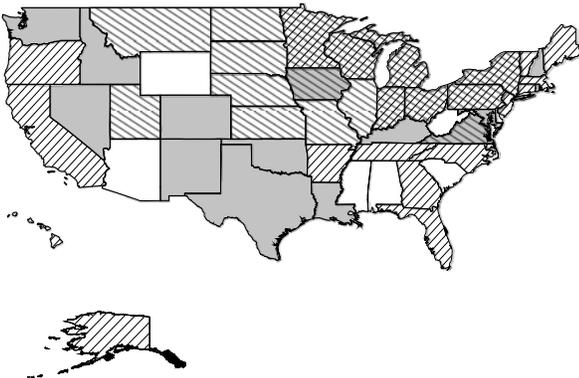
After the creation of CCOF, nonprofit certification organizations formed from local networks of farmers throughout the United States. As shown in Figure 1.2, all certification organizations in the United States before 1985 were local nonprofits. The earliest certification organizations appeared in California, Oregon, Maine, New Hampshire, Vermont, Michigan, and Minnesota. Over time, more local nonprofits were founded throughout the Northeast, primarily along the eastern seaboard and then moving south and west.



1980



1990



2000

LEGEND



FIGURE 1.2: GEOGRAPHIC PATTERNING OF SBCOs, BY FORM

Local nonprofit SBCOs absorbed much of the risk and costs associated with experimentation and illegitimacy in the early moments of the industry. Their collectivist ideals served as a sustaining motivation in the face of limited economic benefit accruing to early growers. These local nonprofit SBCOs were institutional entrepreneurs that established the identity, legitimacy, and accountability of the organic industry, guaranteed the quality and value of its products and services, and increased the integrity and reliability of growers. They accomplished this through the creation of a set of standards and verification procedures that subsequently diffused and were transposed in other locales by a variety of actors.

OCIA

Although founding generation members of social movement organizations may be attached to a broader social movement and its ideology, second generation members often tend to be oriented more toward the goals and services of only a particular organization, rather than those of the movement at large (Rothschild and Whitt 1986). In a similar fashion, a “second generation” form of SBCO exhibited marked differences from its early local nonprofit predecessors. In 1985, the Organic Crop Improvement Association (OCIA) grew out of Organic Farms, Inc., a wholesale distributor in Beltsville, Maryland, that sought a summer source of fresh vegetables that could not be grown in the South. To this end, OCIA established two pilot programs, one in Vermont and one in Quebec. As part of the programs, OCIA demanded certification from growers, funding their participation for the first year with the understanding that growers would then take responsibility to run the program thereafter. OCIA was to then serve as an accreditation body over these and all other existing certification programs, including local nonprofits. However, local nonprofits declined the proposition in order to maintain control over their own standards and certification processes.

Although the program stalled in Vermont (for reasons that will be explicated in more detail below) the program caught on in Quebec and then spread to Ontario. By 1986, OCIA had 35 members (CAAP 1986). Shortly thereafter, OCIA grew significantly, establishing chapters and affiliates throughout various parts of the United States and Canada, focusing on serving international markets for certified organic food primarily in Europe and Japan. By 1989, OCIA had established chapters in 11 states and boasted a membership in North, Central, and South America of over 6,000 producers. In the United States, OCIA established a strong presence in Illinois, Indiana, and Nebraska, and then fortified its influence and presence in other Midwestern states. By 2000, OCIA had 35 chapters in 16 states. Much of the later growth of the organization came from the founding of multiple chapters in the same state.⁶

State Certification Organizations

Beginning in 1985, state bureaucracies forayed into organic certification. In 1985, Washington state lawmakers gave the director of the Department of Agriculture the prerogative to create and modify a materials list⁷ and to be responsible for the enforcement of the law. This was the most power given to a state department of agriculture to this point in the industry. Exercising that power in 1986, the Washington Department of Agriculture created the first state-run certification organization in the United States, a move that subsequent state departments of agriculture would follow, beginning with Texas. Public pressure and the recognition of the potential revenue for the state played important roles in initiating these two states' involvement in the organic food market.

⁶ The majority of OCIA-dominated states had multiple chapters (11 out of 16).

⁷ A materials list refers to materials listed as either allowed, restricted, or prohibited in the production, processing, and handling of organic food.

The Washington program materialized as a result of grassroots efforts by the grower-run Tilth Producer's Cooperative (TPC) that previously certified organic producers. In 1985 this group, along with a local five-store retail consumers' cooperative, began pushing for an organic food law. Two years later, additional legislation mandated the establishment of a certification program under the Washington Department of Agriculture (Friedman and Fishman 1989).

In contrast to Washington, whose legislation was driven by industry participants, the Texas Department of Agriculture was proactive, taking the initiative to establish a state organic program. To determine the potential of the organic food market, the Texas Department of Agriculture (TDA) conducted a survey and found that there existed a potential \$35 million organic market in Texas, with 90 percent of the products coming from California. To capture some of that market, the TDA implemented a comprehensive certification program to encourage Texas producers to farm organically in order to supply their own state's demand for such products. The Texas legislature approved \$45,000 for the development of the program, which served as a model for other state programs (Friedman and Fishman 1989).

The efforts of the Washington and Texas Departments of Agriculture set the stage for other states to take a proactive role in the industry. As shown in Figure 1.1, state agencies did not get involved in certification until 1986—long after local nonprofit SBCOs had laid the groundwork by developing standards, providing models of how to organize, and establishing markets. After the initial founding of the first state-sponsored certification organizations in Washington and Texas, a spate of other state organization foundings occurred. By 1993, 8 additional states had established state certification organizations. By 2000, that number reached 14.

The geographic pattern of state certification foundings shows that most state certification organizations were founded primarily in the Rocky Mountain States, the

Southwest, and the South Central states of Oklahoma, Texas, and Louisiana. Figure 1.2 shows that state certification organizations were largely founded in states that had neither local nonprofit nor OCIA chapters.

A TYPOLOGY OF SBCOs

Although each of the three forms of certification organizations discussed above performed the same functions of setting industry standards and verifying compliance to those standards, they varied in important ways. This variance and its relationship to the temporal and spatial history of the industry is theoretically significant because the geographic and temporal patterning indicates the way in which SBCOs first served as jurisdictional “fences” but then later and in different geographic locations served as “gates” by which growers distinct from those pioneering the industry entered the industry.

To develop the distinctions between SBCO forms, I adapt Rothschild and Whitt’s (1986) typology of ideal types of bureaucratic and collectivist-democratic organizations to highlight five important dimensions (source of solidarity, authority structure, social control/relations, incentive structure, and specialization) along which differences in these forms can be identified. Table 1.1 outlines and describes these dimensions. As the foregoing analysis of these dimensions illustrates, the three major categories of SBCOs in the organic food industry (local nonprofit, OCIA, and state-level certifiers) adhere roughly to a continuum in which the ideal types of bureaucratic and collectivist-democratic are at each end. It should be emphasized that this typology is a continuum, given that few organizations completely embody purely bureaucratic or collectivist-democratic ideals. What follows is a narrative analysis of each of the five dimensions as they apply to the three major categories of SBCOs in the organic food industry. These dimensions then offer a point of departure for examining the conditions that predict the presence of one form of SBCO over another.

TABLE 1.1: IDEAL-TYPICAL DIMENSIONS OF COLLECTIVIST-DEMOCRATIC AND BUREAUCRATIC ORGANIZATIONS*

Dimensions	Collectivist-democratic	Bureaucratic
Source of Solidarity	Ideological; strength contingent upon the number and intensity of adherents to ideology	Self interest; strength of solidarity contingent upon shared material interests
Authority Structure	Resides in the collectivity as a whole; rules are minimized and developed by democratic means	Resides in individuals by virtue of their incumbency in office and/or expertise; universal, fixed rules are developed and implemented by office incumbents
Social Control/Relations	Social control based on personalistic and/or moral appeals Concept of community is paramount. Relations are personal and intrinsically valuable	Social control achieved through supervision, standardized rules and sanctions Concept of impersonality is paramount. Relations are role based and instrumental
Incentive Structure	Normative and solidarity incentives prevail over material incentives	Remunerative incentives prevail over norms and solidarity
Specialization	Functions are generalized and organization often provides additional services beyond its officially stated purpose	Functions are specialized and segmented

* Adapted from Rothschild and Whitt 1986

Dimension 1. Source of Solidarity

For many industry pioneers, participation in the early organic movement was largely predicated upon ideological grounds. The source of solidarity for these participants was a set of shared ideals-turned-practices, many of which were part and parcel of larger countercultural movements of the time.

Many of the “political” enthusiasts were hangers-on from the 1960s, initially student, civil-rights, and environmental activists, turned now to the land. These enthusiasts frequently thought of themselves as organizers, bent on mobilizing

the organic movement to a new political self-consciousness . . . These advocates were articulate in other visions of the movement, including anarchist, Marxist, communal, and decentralist ideals. This “politics”, vaguely stated, left many questions unanswered, but it created a distinct identity for many enthusiasts. (Peters 1979:12)

One industry insider describes the countercultural landscape of the time as follows:

What else was happening back in the early mid 70s? The back-to-the-land movement. So you had a lot of communes. You had a lot of people that were militantly opposed to capitalism who were trying to set up an alternative production and distribution system, not necessarily Marxist, but not necessarily pursuing profit either. They were trying to figure out how to fulfill a higher objective. Paramount among them was the Sunburst Commune in Santa Barbara County. Amigo Bob came out of that. A whole lot of people who are still in organic farming today, got started on communes. And were trying to figure out ways to keep organic food moving without having to deal with the Man. That is really hard to explain to people about what that meant for organizational stability and accountability and all that. (Interview, June 20, 2006)

The “‘politics’, vaguely stated” and “the higher objective” mentioned in these quotes refer to the primary source of solidarity for early movement actors. Based on a critique of mainstream systems of production, distribution, and consumption, the ideological impetus for the organic food movement was a commitment to all-encompassing economic, social, and ecological ideals. An early industry publication articulates these ideals as follows:

The wheel on the back cover . . . depicts a wholistic alternative to a corporate industrial food system. Though it might be argued that food is food regardless of the system by which it is produced, the differences between the commercially and ecologically accountable systems to food and agriculture are major. Differences in motivation, rationale and worldview manifest themselves in the way land and people are mobilized, how food is produced and how foods are distributed and ultimately utilized. By definition, the corporate industrial food system is profit motivated. This places a priority on immediate results and accountability measured in terms of economic gains. What follows is a stress on maximum yield stimulated by intensive use of capital and technology

accompanied by exploitation of energy and displacement of people. Though considerations for conservation, ecology and social implications are best alluded to, they are secondary and rhetorical at best. In contrast, a system of food and agriculture motivated more by ecological and social considerations over profit accountability is based on a different set of assumptions which expresses itself in stressing optimum over maximum yields; techniques that value human and biological inputs over technological ones; energy conservation over energy exploitation; methods that are labor intensive more than capital intensive, especially where the later is limited and former is abundant. On the time scale, the concern is with posterity as well as immediate gains. The implications of such contrasting regard for resources, people and food command serious attention. (Fujimoto 1976:v)

As the earliest certifiers in the industry, composed primarily of industry pioneers, local nonprofit SBCOs shared the ideological source of solidarity of the early movement at large. Seeking to protect their ideals and the products they embodied, local nonprofits formed to promote and endorse conceptions of “organic” that were consistent with early movement trends. In emotive, dogmatic language, CCOF, the first local nonprofit SBCO, clearly alluded to its ideological roots in its first newsletter.

. . . more and more energy and dollars are spent every year in devitalizing, refining, and generally rendering useless and sometimes dangerous the food the world so desperately needs. This same sort of “wisdom” takes our most precious resource—the soil, and violates and rapes it in every way possible. It turns this source of life both literally and figuratively into concrete and sees to it that fewer and fewer people have access to it . . . To re-make our lives with unprocessed and organically grown foods is no longer a fad or life style, it’s becoming a necessity. The more people that we can expose to these foods, the better their lives will become, and the better chance we will all have for survival. In many ways it’s a dark picture, but at the same time it’s the most exciting challenge we have yet to face. (Hillyard 1974:14)

While the motivations of individual members varied,⁸ local nonprofits that followed continued to found largely on the ideological groundwork of movement pioneers such as CCOF.

In contrast to local nonprofits, OCIA members' participation in the organic industry was unequivocally rooted in market-related concerns. Many of the OCIA farmers I interviewed suggested that their transition from conventional to organic agriculture was driven by economic necessity/opportunity. One farmer in Montana reported, "I wouldn't be farming today if it weren't for organics . . . I got into organics because I was broke and had a lot of new land that was virgin sod . . . I got into it purely because of economics" (Interview, May 22, 2003). Another OCIA-certified farmer from Iowa reported that her transition to organic was simply a consequence of trying to cut costs as interest rates escalated during the late 1980s. To save money, she began to reduce the amount of chemicals she used on the land. This slow reduction allowed her to eventually transition into organic farming, which ultimately prevented her farm from going bankrupt. This motivation was echoed by a farmer in Ontario who stated, "I don't think we were taking advantage of a consumer

⁸ A recent critique of the literature that examines growers' motivations for practicing organic agriculture suggests that the organic/conventional divide that casts organic farmers as purely ideological and conventional farmers driven only by economic profit is a false dualism (Guthman 2004). Guthman argues that the dichotomy neglects how motivations shift as a result of individual agronomic and financial success and/or broader changes in the growth of the organic market. Nonetheless, it is undisputed that farmers that entered agriculture as organic farmers indeed identify very strongly with the idea that organic agriculture is a countercultural ideology. It is also generally true that smaller growers more closely identify with social movement ideals, whereas larger farms are (or were) nearly always operate under a more business-oriented logic (Guthman 2004). With regard to local nonprofits and their founders, I find a similar phenomenon: those that founded these organizations tended to be much more committed to the idealism underpinning organic agriculture than were other types of certification organizations. However, it is naïve to think that local nonprofit SBCOs did not permit farmers to be certified who were driven primarily by economic motivations. For example, one informant, in describing the membership motivations of the local nonprofit SBCO that she was involved with, suggested that there was "a mix between people who got into it because of philosophical/ideological reasons and people who were really practical, business oriented; there wasn't a surfeit of business-oriented people, but some of them became that way when they realized that was the only way it was gonna work, you know what I mean? [laughing]" (Interview, June 28, 2006).

that was interested in organics. We were trying to recover more of our costs of production by not using chemicals” (Interview, June 16, 2005).

OCIA farmers not only certified to address cost issues of production, they also wanted to satisfy the demands of downstream buyers and wholesalers in the value chain. A Kansas grain grower explained that he initially resisted certification because he did not want to have to deal with the bureaucracy. He noted, “Back in the day, it was just a phone call and an affidavit. This was all that certification consisted of” (Interview, May 28, 2003). However, he finally decided to certify in 1984 when he sent a millet crop to Arkansas, where it was not accepted. It was at that point he decided to become certified. Similarly, an Ontario farmer recounted that growers in his OCIA chapter and those in the Saskatchewan chapter came to third-party certification by necessity: “Their customers in Europe needed some guarantee that some kinds of standards were being used in certification. From Saskatchewan, a lot of wheat was going to Europe. They got involved in OCIA because of marketing opportunities . . . their market dictated to them that they had to do that” (Interview, June 16, 2005). He further noted, “I think their market was dictating to them to have a third-party certification more so than the farmers themselves were” (Interview, June 16, 2005).

As quotes from OCIA farmers indicate, the market-driven necessities of conventional farmers at the time allowed OCIA leadership to draw on a clear-cut economic source of solidarity to establish and promote their certification efforts. As one farmer puts it, the transition from conventional to organic farming was made easier because the OCIA representative “was really a salesman. He got people enthused and farmers had heard that organic oats were a good deal” (Interview, June 10, 2003). The ideological source of solidarity that was so evident in local nonprofit certification, and the organic movement at large, was conspicuously diminished for

OCIA and its “conventional, run-of-the-mill farmers” (Interview, June 16, 2005), as one informant called them. The contrasting sources of solidarity were described by an OCIA farmer: “I started going to the Anaheim food show in ’92 and that was a trip—that was a trip. The people in that show, I mean, I had never seen these kind of weird people in my life, really in my life—it was something.” When asked if OCIA had “weird people” in their ranks, she said, “Some, but very few. Most came from people who were just about to lose their farms and this [organic farming] was something that will maybe work . . . and I know people that it has saved their farm (Interview, July 23, 2004).

In contrast to local nonprofit SBCOs and OCIA, each of which had clearly evidenced sources of solidarity, state SBCOs embodied more of the ideal bureaucratic organization. According to Weber (1978), modern bureaucracy is established on the basis of rational-legal authority. Consistent with Weber’s conception of bureaucracy, state SBCOs exhibited ideal-typical characteristics such as rule and role formalization, impersonal and instrumental relations, valorization of remunerative incentives, and advancement based on achievement. These bureaucratic elements obviated the need for other sources of solidarity (ideological, regional, etc.) for the continued maintenance of state SBCOs; they had the institutional mandate and financial backing of the respective state governments.

Dimension 2. Authority Structure

Rothschild and Whitt note that the “collectivist-democratic organization rejects bureaucratic justifications for authority. Here authority rests not with the individual . . . but resides in the collectivity . . . collectives seek not the transference of power from one official to another, but the abolition of the pyramid in toto: organization without hierarchy” (1986:51). Although local nonprofit SBCOs were not as opposed to organizational hierarchy as the ideal-typical collectivist organization,

they exhibited a clear preference for and commitment to decentralized and democratic decision-making. For example, one of the founders of the Northeast Organic Farmers Association of Vermont, a local nonprofit, described the organization's process for writing standards: "We had a committee and we drafted some standards and extracted some comments and feedback from people and it went on a few rounds and then we agreed upon it. We had a pretty strong commitment to a democratic, open process" (Interview, June 28, 2006). Commenting on the structure of authority in the California Certified Organic Farmers (CCOF), Guthman (2004) states, "There was a strong countercultural element within CCOF and among nonaffiliated organic growers as well, evidenced in the idiom they used in reference to their annual meetings: 'tribal gatherings.' This idiom was barrier enough to other, less countercultural growers for a long time. In addition, the original CCOF growers were notably resistant to formality; it was not until the late 1980s that CCOF received proper tax status from the Internal Revenue Service and filed its first tax returns" (p. 112).⁹ CCOF strove to have members vote and control the establishment of standards and direction of the organization. A former employee of two local nonprofit SBCOs stated that all early certification organizations had a very similar commitment to decentralized and democratic decision-making processes (Interview, June 20, 2006).

In contrast to the organizational structure of local nonprofit SBCOs that preserved collective decision making as much as possible, as an international certifier, OCIA established chapters in multiple states that had six or more members and then appointed unpaid chapter presidents to be responsible for completing all of the paperwork associated with certification and inspection for each farmer. OCIA members were actively recruited to join chapters, and OCIA would establish a chapter

⁹ Nonetheless, they did see the need for *some* structure: "While it is possible for short-lived groups to operate without defined levels of authority, all organizations that intend on being around for a while must set down their delineation of authority" (Cain 1984:4).

only if a minimum number of farmers would certify. While the chapters completed all of the paperwork and conducted inspections, decisions about standards were made by the international body. One of the founders describes his justification for a federated structure:

. . . one of the things I noticed was that everyone was developing their own standards and my idea was to have a standard that was universal across the country . . . My idea was to take the chapters and form an international body where all of the chapters belonged and everyone worked on the same standards. We met in Albany [New York] and there was quite a number of different groups represented there. [all OCIA groups—it was very loose at that time]. We agreed to work on one set of standards and we left that meeting with an international body to take care of standards. (Interview, June 16, 2005)

This approach was not amenable to the participants in the OCIA pilot program in Vermont. The director of the program at that time noted,

OCIA was in VT for only year or two. I mean mostly people were very suspicious, it began to seem like something that wasn't what was advertised as and the growers weren't having the control that they were promised. They didn't want to pay the cost of affiliating with this national thing, they didn't have an interest in national markets, so they decided to turn it into, I think at that point it was turned into the name, Vermont Organic Farmers which is what it still is. (Interview, June 28, 2006)

Similar disillusionment occurred at a much later date in Montana. Before 1999, Montana growers were certified largely by OCIA. In an effort to gain local control, a group of farmers sought to develop a state certification program. The legislature gave seed money for an investigation of the certification process. They polled all organic growers in the state, and more than 60 percent of the growers wanted a state-run certification program. The program was put in place in 2001.

In the case of state SBCOs, all authority to make decisions resided with the department and the various individuals responsible for administering the program (generally the state department of agriculture). Nonetheless, state SBCOs generally

had an advisory board constituted of department employees, organic producers, consumers, and cooperative extension employees. These boards assisted the director of the program in formulating and carrying out the state organic program.

Nonetheless, there were clear delineations of authority, and that authority resided with individuals by virtue of their incumbency in office (Weber 1978; Rothschild and Whitt 1986).

Dimension 3. Social control/social relations

Generally speaking, collectivist organizations tend to shun the use of centralized authority or standardized rules to achieve social control. Rather, they rely on personalistic and moralistic appeals to achieve social control (Rothschild and Whitt 1986). Inherent in the functional purpose of SBCOs is to monitor and verify the degree of compliance by organizations that subscribe to their standards. Consequently, SBCOs rely on some supervision, standardized rules, and procedures to legitimately claim to achieve their purposes. Nonetheless, the degree to which social control in certification occurred via social relations (personalistic/moralistic) versus impersonal and impartial third-party verification varied by SBCO form. For instance, certification of farms by early local nonprofit SBCOs occurred through what one informant called “the buddy system.” This referred to the practice of organic growers certifying one another—no truly impartial third party was doing the monitoring. He stated that most early certification was done “largely by the buddy system. And it remained by the buddy system until I was hired [1987]. Not that there was anything wrong with it. I mean, seriously the buddy system was an economic way of market enforcement that required accountability and responsibility on a very personal basis. You had your peers, competitors and neighbors checking you out” (Interview, June 20, 2006). When asked whether it was successful and whether farmers lived up to the standards, he said,

“It depends on who you ask and if you are asking me, the situation was adequate up until a certain point” (Interview, June 20, 2006).

By virtue of being an internationally federated organization with multiple chapters in multiple locales, OCIA naturally relied on more centralized authority and standardized rules to achieve social control. However, while OCIA centralized much of the decision-making regarding the creation and modification of standards, it was fairly decentralized in other ways. Consequently, there were wide disparities in the running of many of the chapters (Guthman 2004). One of the founders of OCIA recounted the state of affairs in the organization’s early days:

. . . I got interested in the third-party thing by being questioned in the marketplace and knowing that we had to have standards. In the early days, there wasn’t anything organized, and so we organized our own standard based on European standards, IFOAM standards, basically. And . . . I would do a lot of my own inspections. (Interview, June 16, 2005)

An informant who worked for OCIA suggested that because certification decisions were made locally, the door was opened for opportunism and fraudulent practices in OCIA chapters:

. . . decisions about things like the standards were set up to be more national, to be done for the whole system. But the certification decisions were made locally. I don’t have any first-hand information about this, but I have certainly heard enough stories about the cronies club in the local areas tolerating some shady things. (Interview, June 28, 2006)

Documentation of OCIA’s activities in California revealed similar issues. In the 1990s in California, OCIA for a time had growers directly paying the inspectors of their farms. Additional internal controversies involving allegations of improper certification practices led to the disbarment of the California chapter. Furthermore, OCIA was implicated in a 1995 suit that named OCIA and QAI (a private certifier) as having

certified fungicide-treated bananas (Guthman 2004). OCIA, like local nonprofits, were engaging in “buddy system”-like tactics but became mired in controversy.

Social relations in OCIA were ostensibly characterized much more by impersonality and instrumentality and a disinterest in community building than were social relations among local nonprofit certifiers’ growers. One of the founders of OCIA noted that OCIA farmers were “an independent lot,” and a past president, commenting on the willingness of OCIA members to lobby for legislation, noted that “Most of them [the farmers] said, ‘I just want to farm my fields’” (Interview, July 23, 2004).

Social control, particularly in the context of certification, differed significantly for state SBCOs relative to local nonprofit SBCOs and OCIA. By virtue of being run by the state, state SBCOs brought added credibility and objectivity to verification and certification processes through impersonal, impartial, and standardized third-party verification. For example, the Texas program redressed “some of the more difficult issues that have been plaguing the organic industry for years ” by ensuring objective third-party certification through hiring independent inspectors, implementing a pesticide residue testing program, clarifying farm questionnaires, and bolstering its materials list (Friedman and Fishman 1989:135).

Dimension 4. Incentive structure

Instead of relying on remunerative incentives, collectivist organizations depend on a sense of shared purpose and relational ties to generate commitment to the organization (Etzioni 1961; Zald and Ash 1966; Kanter 1968; Rothschild and Whitt 1986). Local nonprofit SBCOs relied heavily on work that was accomplished through underpaid and, more often, volunteer labor. One of the first paid employees for a local nonprofit SBCO recalled a conversation with one of the founders of the SBCO:

I had the good fortune of speaking with ___ before he passed on. And ___ was many things, but he was a person who was definitely a partisan for a decentralized farmer-based system. To his dying day, true to his word, I mean he had nothing against me personally, but he thought I was an absolute parasite for taking a salary based on taxing farmers. You know, “death to the bureaucrats who prey on the lives of the peasants.” And that perspective persisted. You know what, [this organization], through its volunteer structure, and through its dedication, survived. (Interview, June 20, 2006)

He further commented on the work of one of the early presidents of the SBCO:

Still, ___ maintained the organization. He did the minimum that was needed to keep it afloat. Many people said he did more than the minimum needed. Without compensation, he put in a tremendous amount of time and kept it alive . . . with [this organization] it was a labor of love. (Interview, June 20, 2006)

Like its local nonprofit counterparts, OCIA was initially established using a set of volunteers to accomplish the work of certifying all farms. At the local level, OCIA would appoint an unpaid chapter president who was responsible for completing all of the paperwork for each farmer in the chapter. A past director of OCIA reported that the system did not work because “those were volunteer positions and you can’t get people to continually volunteer and it always ends up with one person doing all the work. People have to want to do that and understand that they have to contribute and that it’s work” (Interview, July 23, 2004). The use of volunteers in OCIA was a concern from the beginning, according to one of the founders:

. . . being a membership organization, one of the drawbacks was that everyone wanted to belong to the organization and get their work done for near nothing. But we didn’t have the funding to pay all the people that were doing the work to get the applications ready and doing the actually reviewing and end up giving the certification. So everything was volunteer and the people that were good at it soon got burned out and they weren’t being rewarded. The organization with that system was not working very well in my opinion and soon, me and several other guys decided to start a new group that was a fee for service. If someone wanted to be certified, you were a client rather than a member. We went down that road. OCIA disappeared in Ontario for some of the reasons that I mentioned. There was nothing wrong with their standards or

their actual certification. It's just the organization just couldn't survive under that model of volunteer help. (Interview, June 16, 2005)

These quotes suggest that from the very beginning, OCIA was unable to function using a volunteer system to accomplish its goals because such a structure was not conducive to the members it was meant to serve. As noted, one of the founders of OCIA broke away and started a group that relied on a bureaucratic structure that treated those seeking certification as "clients" rather than "members."

State SBCOs obviously did not draw on normative and solidarity incentives to ensure that employees performed their expected activities and tasks. While employees of state SBCOs were often sympathetic to the ideals espoused by many of those in the local nonprofit SBCOs, their organization did not have to rely on their employees' commitment to the ideal to ensure continued functioning of the organization. Receiving a salary also had the effect of increasing continuity in personnel as they were adequately compensated for their work.

Dimension 5. Specialization

Many local nonprofit SBCOs engaged in a variety of tasks beyond the core function of certification such as public relations (direct personal contact, booths at fairs, slide shows, developing educational packages for distributors and retailers, etc.), information sharing through monthly newsletters, conferences/workshops, marketing efforts, and political lobbying. In the absence of substantial support from university extension services and other traditional sources of agricultural information and assistance (Lipson 1997), these organizations used their ideological source of solidarity to be both repositories and disseminators of expertise of organic production practices.

The degree to which OCIA engaged in ancillary functions such as educational outreach, information sharing, and political lobbying was eclipsed by growers' sole

interest in certification. One of the founders of OCIA disappointedly recounts, “The OCIA concept was, Organic Crop Improvement Association. [The purpose] was to certify crops and improve crops. This concept was lost at day one. People came to the organization to become certified, not to improve crops. It was really driven by economics” (Interview, June 16, 2005). As such, OCIA was essentially an organization whose core specialization was certification. Based on interviews conducted, OCIA did not engage in any additional services, advocacy, or community-awareness efforts.

Consistent with the aims of state SBCOs to eliminate conflicts of interest (growers certifying growers), the state was only in the business of certification. Among local nonprofit SBCOs, technical assistance to farmers often went hand-in-hand with certification. By contrast, state SBCOs were valued in the industry for their potential to be more objective, credible, and less prone to personal distortions.

Table 1.2 summarizes the three forms of SBCOs, arraying them on a continuum from more collectivist in nature to more bureaucratic. Local nonprofit SBCOs are more collectivist in nature, OCIA chapters tend to fall in the middle, and state-run SBCOs are more bureaucratic. Having inductively developed this typology of SBCOs in the U.S. organic food industry from interviews and other sources of qualitative data, I now shift attention to questions of conditions that supported the presence of the various forms of SBCOs.

As mentioned in the introduction, given that increasing attention is being paid to the role of audiences (i.e., critics, industry analysts, certification/accreditation bodies, etc.) in facilitating the emergence of particular organizational forms and markets, it is important to understand the origins of these audiences. Theory regarding the founding of organizations (Stinchcombe 1965) and the insights gained from the case study suggest that particular antecedent and facilitative conditions will tend to

foster distinct forms of SBCOs. This quantitative analysis is an effort to validate those claims derived from the inductive case study of SBCOs.

TABLE 1.2: DIMENSIONS OF STANDARDS-BASED CERTIFICATION ORGANIZATIONAL FORMS

	<i>More Collectivist</i>	<i>More Bureaucratic</i>	
	←	→	
	Local SBCO	O CIA	State SBCO
Dimensions			
Source of Solidarity	Primarily Ideological	Primarily Economic	N/A
Authority Structure	Decentralized authority; democratic decision making on standards	Centralized authority; decision making regarding standards done at headquarters	All decisions regarding standards made by legislature and state departments of agriculture; often employed an advisory board
Social Control/Relations	Growers certify growers	Growers certify growers	Objective and reliable third party certification
Incentive Structure	Reliance on shared purpose and volunteer labor to accomplish organizational tasks and goals	Little shared purpose; consequently, the use of volunteer labor was not sustainable	Remunerative incentives
Specialization and Organizational Focus	Performed many tasks and functions beyond its stated purpose of certification	Primary focus on certification	Only performed certification functions to maintain objectivity and credibility

Given the ideological nature of local nonprofit SBCOs, I expect that states that are more amenable to collectivist-democratic ideals and to anti-mass consumer and anti-capitalist ideas will be more likely to experience the founding of a local nonprofit SBCO. I would also predict that states with established organic food industry infrastructure would also be more likely to experience local nonprofit SBCO founding.

Based on the findings from the qualitative component of this research, it is reasonable to expect that OCIA chapters are more likely to be founded in states with larger agribusiness interests. Finally, given state SBCOs' bureaucratic nature and their reliance on the state for financial and institutional support, it stands to reason that greater legal and regulatory infrastructure would be a precursor to their creation. Hence, I expect that states that pass more comprehensive state organic policies and regulation will be more likely to establish a state SBCO.

DATA AND METHODS

Because I focus on the differential conditions that facilitate the emergence of distinct SBCO forms across states and over time, the state-year is the natural unit of analysis. The window of observation is from 1970 to 2000. 1970 serves as the baseline year because it was in that year that Rodale initiated preparations for the first certification program. The window ends in 2000, the year that the USDA released the final regulations that preempted all previous state organic food laws and rules.

Dependent variable. SBCO founding is the dependent variable. I parsed founding into three distinct categories: the founding of a local nonprofit SBCO, the founding of the first OCIA chapter in a state, and the founding of a state SBCO. These data for the dependent variable come from multiple sources. For a yearly compilation of all SBCOs in existence in the United States, I drew from the *National Organic Directory* (*NOD*; 1983–1984, 1986–2001), published by the Community Alliance with Family Farmers. I also consulted three additional directories¹⁰ to capture all certification organizations that existed prior to their listing in the *NOD*. If directories did not list a founding date for the certification organization, calls were made to the organization to obtain it. If the organization had been dissolved, I contacted affiliated farmers or

¹⁰ One published by the Organic Farming Research Foundation, another by the Agricultural Marketing Service of the USDA, and a third by ATTRA (Appropriate Technology Transfer for Rural Areas).

organizations to obtain both a founding date and a dissolution date for the particular organization.

Independent variables. The first set of independent variables in the model that are expected to predict the presence of a local nonprofit SBCO include the percentage of liberal voters in a state (*Liberal voters*) and the number of organic food wholesalers in a state (*Wholesalers*).

I use the percentage of liberal voters in a state (*Liberal voters*) because states that had a solid left-leaning political base would be more likely to embrace the ideological underpinnings of local nonprofit SBCOs. The measure comes from Wright, Erikson, and McIver (1985) and is a time-invariant measure culled from 76,000 respondents to 48 *CBS News–New York Times* general population and voter polls at the state level from 1974 to 1982. The measure is the percentage of people polled in a state that described their political views or themselves as “liberal” when it comes to political matters.

The wholesaler variable is drawn from the *NOD* and from *Food Co-ops: An Alternative to Shopping in Supermarkets* (Ronco 1975), both of which list wholesalers that sell natural and organically grown or produced food. The *NOD* provides the most comprehensive listing of all wholesalers carrying organically produced food from 1983 to 1984 and 1986 to 2000. *Foods Co-ops* was published in 1975. Although the food co-op movement also included the related natural food movement, the food co-op movement had a symbiotic connection to the development of organic food because the purveyors and customers of natural food stores shared the same anti-system ideological underpinning of pioneering organic farmers. To develop a longitudinal variable from these two sources that would cover the length of the observation period, I first established that the two sources were similar. I compared the 1983 wholesaler data from the *NOD* with the 1974 *Food Co-ops* data. I found a .86 correlation between

the two data sources. I then interpolated the *NOD* data and compared the interpolated 1974 *NOD* data with the 1974 *Food Co-ops* data and found a .75 correlation. Based on these correlations, I combined the *Food Co-ops* and the *NOD* data and linearly interpolated and extrapolated to generate values for the missing years of data.

To assess whether OCIA arises in states with greater agribusiness interests, I include a proxy measure for the presence of large farms in a state (*Land/farms*). To calculate *Land/farms*, I divided the total amount of farmland in a given state by the number of farms, thus providing a measure of the average size of farm in a given state.

Finally, the independent variable expected to influence the presence of state SBCOs is a measure of the number of total provisions codified in law or administrative rules for each state-year (*Total state provisions*). This provides an assessment of the comprehensiveness of legal structure in a state. For this measure, I gathered data on all organic food laws and administrative rules from the first law passage in 1973 through the end of the observation period. To tabulate the total number of provisions present in state law or state administrative rules between 1973 and 2000, I first consulted Westlaw. While Westlaw maintains a fairly comprehensive historical record of all U.S. statutes, administrative laws, and amendments, I found it necessary to conduct archival research to find legislation predating Westlaw's database. After obtaining the first appearance of organic food legislation or administrative rules in each state, I then coded each state-year according to the number of provisions that each law contained. For each mention of a new provision, the state-year received a one for that provision; otherwise, it received a zero. I summed across all provisions for a total number of provisions in a given state for a given year and then worked forward coding changes in the law reflected in amendments.

Control Variables. A number of agriculturally related measures that may influence SBCO founding dynamics are included as controls. First, I control for the total number

of farms in a state. Because this variable was skewed, I took the natural log and call this variable *Number of farms*. Second, I control for the change in amount of farmland in a state (*Change in acres*). I also control for the change in the number of farms in a state (*Change in # of farms*). Finally, I control for the percentage of gross state product that is generated through agriculture (*Farm revenue/GSP*). Because these data were not available for the first seven years of the observation period, I used the STATA *ipolate* and *epolate* commands. I also control for significant changes in the legal environment of the certification organizations. I do this by creating a variable called *Novel provisions*. This variable is a cumulative measure of the number of novel provisions across U.S. states. By novel, I mean a provision that has never been codified in law. At the national level, I also control for the total number of SBCOs in the United States (*Cum # SBCOs*). Finally, I control for the presence of other forms of SBCOs in a state. Unless otherwise noted, all variables were constructed from historical agricultural data from the National Agricultural Statistics Service of the USDA.

Modeling SBCO Foundings

I use random effects logistic regression models to assess the effects of independent variables on the probability of the founding of a particular form of SBCO, clustering on state to reduce the bias associated with pooled, cross-sectional panel data. I do not use fixed effects models because they are unable to estimate effects for panel data that include cases for which there is no variation in the dependent variable over time. The majority of states do not experience the founding of any one kind of these certification organizations. Consequently, much of the sample is lost using fixed effects models. Nonetheless, several robustness checks were performed, including logistic and complementary log-log models that clustered observations by state and

calculated robust standard errors to control for heteroscedasticity (White 1982). These models produced results similar to those reported here.

RESULTS

Tables 1.3, 1.4, and 1.5 report the summary statistics and correlations of the variables. Table 1.6 presents the results obtained from the SBCO analysis. Models 1 and 2 report the results of the analysis of OCIA founding; models 3 and 4 report those of state SBCO founding; models 5 and 6 report those of local nonprofit SBCO founding. Overall, national variables such as the cumulative number of SBCOs and the number of novel legal provisions have a legitimating effect, encouraging the founding of all forms of SBCOs.

Regarding the founding of OCIA chapters, states with greater numbers of farms and greater numbers of wholesalers predict the founding of OCIA chapters. Consistent with expectations, states dominated by larger farms (*Land/farms*) are more likely to experience OCIA-chapter founding.

Models 3 and 4 report the results from the analysis of State SBCO founding. In these models, both local SBCO and OCIA chapter variables are negatively related to the founding of a state SBCO (and marginally significant in the case of local SBCO). With the exception of a few states (i.e., Washington and New Hampshire, whose local nonprofit SBCOs successfully petitioned the state to take responsibility for running certification programs), local nonprofits and OCIA chapters generally sought to retain their ability to certify organic producers without competition from the state. Many state programs, as expected, arose from decisions by state legislators and bureaucrats to pass laws that enabled the creation of a state certification program as demonstrated by the positive and significant predictor variable of *Total state provisions*. These types of state programs often arose in states with little organic infrastructure. For example, a state program was established in Nevada in 1998 even though only one major

wholesaler of organic food existed in the state at that time. This is somewhat borne out in the analysis, as the variable *Wholesalers* is a negative predictor of state programs, albeit not statistically significant.

Finally, the founding of the local nonprofit form is, as expected, significantly and positively predicted by the variables *Wholesaler* and *Liberal voters*. It is also important to note that whereas the variable *Land/farms* is a positive and significant predictor of OCIA-chapter founding, it is negative and significant for the founding of local nonprofit SBCOs. This demonstrates that OCIA chapters were established largely in agribusiness-oriented states and local nonprofit SBCOs were not, providing initial indications that through OCIA, larger, less ideologically committed farmers entered into the organic market.¹¹

Notably, the presence of an OCIA chapter in a state inhibits the founding of local nonprofit SBCOs, as does the presence of state SBCOs (dropped from models 5 and 6 due to perfect negative predictions of local nonprofit SBCOs). In other words, once state SBCOs are established in states, no local nonprofit SBCOs are founded in those states, and once OCIA chapters are formed in states, it is unlikely that a local nonprofit SBCO will be founded in those same states.

¹¹ Further analyses that predict the size of producer and commitment to organic ideals are needed to substantiate this claim.

TABLE 1.3: CORRELATION MATRIX FOR OCIA FORM-FOUNDING ANALYSES

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. OCIA founding												
2. Number of farms	.07											
3. Change in acres	-.01	-.20										
4. Change in # farms	-.01	-.20	.51									
5. Farm revenue/GSP	.00	.02	-.01	.01								
6. Novel provisions	.07	-.02	.04	.06	-.01							
7. Cum. # SBCOs	.08	-.17	.10	.23	-.03	.09						
8. State SBCO	.00	-.04	.04	.15	-.01	-.05	.46					
9. Local SBCO	.06	-.07	.11	.10	-.01	.11	.24	-.12				
10. Wholesalers	.11	.16	-.04	.12	-.01	.01	.00	.01	.29			
11. Liberal voters	.00	-.42	.13	.07	-.08	-.01	-.01	-.04	.29	.24		
12. Land/farms	.01	-.35	-.03	.09	.02	.00	-.08	-.07	-.24	-.08	.13	
13. Total state provisions	.00	.03	.01	.20	-.01	-.03	.49	.78	.00	.13	-.04	-.07

TABLE 1.4: CORRELATION MATRIX FOR STATE SBCO FORM-FOUNDING ANALYSES

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. State SBCO founding												
2. Number of farms	-.04											
3. Change in acres	.02	-.14										
4. Change in # farms	.01	-.22	.33									
5. Farm revenue/GSP	.00	.02	.00	.01								
6. Novel provisions	.09	-.01	.04	.04	-.01							
7. Cum. # SBCOs	.11	-.03	.05	.21	-.02	.06						
8. OCIA	.02	.22	-.01	.04	.01	.02	.50					
9. Local SBCO	-.02	-.03	.10	.15	-.02	.05	.35	.07				
10. Wholesalers	-.02	.15	-.08	.11	-.01	.00	.11	.10	.27			
11. Liberal voters	.00	-.35	.09	.10	-.08	-.01	.00	-.04	.32	.24		
12. Land/farms	.02	-.39	-.08	.10	.03	.00	-.05	-.01	-.29	-.08	.08	
13. Total state provisions	.12	.08	-.05	.13	.00	.04	.40	.27	.27	.51	.08	-.02

TABLE 1.5: CORRELATION MATRIX FOR LOCAL SBCO FORM-FOUNDING ANALYSES

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Local SBCO founding											
2. Number of farms	.00										
3. Change in acres	.02	-.10									
4. Change in # farms	.02	-.20	.39								
5. Farm revenue/GSP	-.01	.02	.00	.02							
6. Novel provisions	.10	-.01	.04	.06	-.01						
7. Cum. # SBCOs	.01	-.05	.03	.21	.00	.09					
8. OCIA	-.05	.13	-.02	.02	.02	.09	.53				
9. Wholesalers	.15	.17	-.02	.08	-.02	-.03	.01	.10			
10. Liberal voters	.07	-.37	.06	.01	-.09	-.03	-.12	-.06	.20		
11. Land/farms	-.08	-.49	-.05	.15	.02	.01	.10	.05	-.09	.22	
12. Total state provisions	-.05	.09	.03	.21	.00	-.06	.53	.13	.13	-.09	.06

TABLE 1.6: LOGISTIC REGRESSION MODELS OF SBCO FORM FOUNDING

<i>Variable</i>	OCIA form		State form		Local nonprofit form	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Number of farms	.661** (.249)	1.159** (.398)	-.202 (.366)	-.083 (.259)	.074 (.162)	.189 (.215)
Change in acres*100	.024 (.105)	.077 (.117)	.075 (.222)	.185 (.210)	.029 (.012)	.033 (.143)
Change in # of farms*100	-.010 (.011)	-.015 (.011)	-.017 (.036)	-.035 (.026)	.002 (.012)	.007 (.017)
Farm revenue/GSP	.167 (.646)	.238 (.696)	-.821 (7.085)	-.177 (8.944)	-.082 (.766)	.224 (1.259)
Novel provisions	.079+ (.041)	.079+ (.042)	.190** (.062)	.147* (.060)	.116** (.040)	.126** (.041)
Cum. # SBCOs	.044** (.015)	.065** (.017)	.131* (.064)	.106* (.042)	.011 (.025)	.049** (.015)
State SBCO	-.646 (.870)	.623 (1.075)				
Local SBCO	.519 (.494)	.357 (.601)	-1.465+ (.869)	-1.356 (.855)		
OCIA SBCO			-.787 (.845)	-1.003 (.872)	-1.898 (1.174)	-2.411* (1.130)
Wholesalers		.062* (.028)		-.282 (.204)		.123* (.054)
Liberal voters		.051 (.083)		.078 (.081)		.201* (.079)
Land/farms		.691* (.283)		-.130 (.337)		-1.249** (.481)

Standard errors in parentheses; + significant at 10%; * significant at 5%; ** significant at 1%

TABLE 1.6 (Continued)

<i>Variable</i>	OCIA form		State form		Local nonprofit form	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Total state provisions		-.085+ (.048)		.180** (.053)		-.117 (.076)
Constant	-12.516** (2.861)	-19.925** (5.454)	-8.388* (3.496)	-9.752* (3.940)	-4.722* (2.034)	-10.119** (3.466)
Observations	1184	1184	1336	1336	952	952
Log likelihood	-105.300	-97.686	-56.059	-49.892	-116.424	-97.554

DISCUSSION AND CONCLUSION

In this paper, I have documented the emergence and expansion of standards-based certification organizations (SBCOs) in the organic food industry. There are clear temporal and geographic patterns of SBCO founding, and I have linked SBCO organizational form founding to distinctive facilitating state-level conditions. The initial development of the organic food industry occurred in states such as California, Maine, and Oregon that had strong, left-leaning political bases and populations of farmers and consumers that promoted an anti-mass consumer, organic ideology that facilitated the creation of an infrastructure of organic food wholesalers. In turn, these states experienced the creation of local nonprofit certification organizations. As the organic market grew, other states, dominated by large farms and agribusiness interests, experienced the founding of another SBCO form—OCIA. Growers in these states were less driven by ideology than those in states from which the original organic grassroots movement emerged. Instead, they saw the organic food industry as an economic opportunity. The founding of OCIA chapters in several key agricultural states facilitated the entry of much larger farmers into the organic industry. Increased legislative activity in the late 1980s and early 1990s generated the impetus and legal machinery necessary for state departments of agriculture to establish state-run SBCOs, constituting a third, unique SBCO form.

By highlighting how distinct SBCO forms took root in different states characterized by distinct facilitative conditions, I have sought to expand understanding of how conditions in different locales led to the instantiation of a set of industry principles and practices in distinctive organizational forms that fostered the emergence and growth of an industry. I have argued that the theorization and development of a set of standards and certification procedures by early organic pioneers served as a "fence"—enacting a solid boundary around organic agriculture by which consumers

could differentiate organically grown products from conventionally grown food. Yet the codification of standards and the routinization of certification procedures facilitated the diffusion of organic to different locales, becoming instantiated in new governance organizations which subsequently served as “gates” by which outsiders to the organic movement entered into the organic marketplace, fostering endogenous change in the shape and trajectory of the industry.

An important limitation of this study should be noted. It is difficult to extricate ideological explanations of organizational outcomes from material explanations because ideology fundamentally shapes organizational behavior as it does human agency (Simons and Ingram 1997) and influences organizational goals, strategies, structures, and processes (Scott Morton and Podolny 2002; Haveman and Khaire 2004). As such, it is hard to determine if particular SBCO forms were founded in states for ideological reasons, for the particular material benefits they provided to their clients, or both. It is possible that one form of certification organization may have appealed to some groups of producers more than to others. For example, OCIA-certified producers had access to international markets that producers certified by local nonprofit SBCOs did not. However, access to distant, national, and international markets has ideological ramifications as initial organic principles valued locally grown and locally consumed—a tension that is currently generating a substantial amount of controversy and press (Brady 2006; Economist 2006). Nonetheless, extricating material and ideological motivations would greatly enhance theoretical understanding of these processes.

Future research should pay greater attention to the role of geography in facilitating the emergence and transposition of unique sets of actors, institutions, logics, and governance structures. Extant conceptions of institutional change in organization theory are dominated by temporal explanations. For example, changes in

governance structures in industries are considered over time, but rarely across polities or locales (e.g., Campbell et al. 1991; Scott et al. 2000). Similarly, shifts in institutional logics have been conceptualized as uncontested, higher order organizing principles that operate historically (quantified as period effects) that homogenously influence organizations within a given field (e.g., Thornton 2002). Greater appreciation for the fragmented nature of organizational fields and institutional environments is needed (Meyer, Scott, and Strang 1987; Powell 1991; Schneiberg and Soule 2005). Biggart and Beamish point out that “conventions of coordination are historically developed and local, and explain why the same industry is organized differently in different places. Differences are the result of actors’ pragmatic attempts to coordinate with others over time; multiple means of coordination are possible” (2003:457). These conventions often become localized institutions that can inform higher order institutional processes. For example, state legislators relied heavily on the standards and certification procedures when passing state law. In turn, federal lawmakers and bureaucrats drew heavily upon the legal-structural elements that had been created and subsequently refined by state-level actors and legislatures. Hence, being attentive to the various localized conventions and institutions that embody multiple interests and logics can inform understanding of broader, field-level institutional change.

Another fruitful avenue to extend this research is to more fully explore the antecedents and consequences of outsider incursions into markets for what Rothschild and Whitt (1986) refer to as “oppositional goods and services.” These oppositional goods and services come into existence as a result of institutional entrepreneurs that “see some important social need that is unfilled by conventional businesses or public agencies” (p. 116). These types of markets are important from a public policy perspective because they are often the source of substantial economic and social

change that can fundamentally redefine preexisting norms, practices, and institutions. For example, organic pioneers sought to “establish a completely new system of food production and distribution” (Belasco 1989:69). While not entirely achieving their objectives, the pioneering work of organic activists has significantly altered agricultural practice and consumer behavior, making organic agriculture the fastest growing niche in U.S. and global agricultural markets. Other examples of oppositional goods and services include renewable-energy technologies, microcredit, fair-trade products, and green building—all of which seek to alter dominant institutions and extant production and distribution practices in their respective fields. Tensions arise in these types of markets because while advocates find justification for their markets’ existence through their opposition to mainstream institutions and organizations, they must nonetheless seek support, endorsement, and legitimacy from some of those same institutions. Further study of how these tensions are managed is critical to more fully understand under what conditions broader markets for oppositional goods and services are successful, frustrated, co-opted, or transformed.

REFERENCES

- Ahmadjian, Christina L. and Patricia Robinson. 2001. "Safety in Numbers: Downsizing and the Deinstitutionalization of Permanent Employment in Japan." *Administrative Science Quarterly* 46(4):622–654.
- Ahrne, Goran, Nils Brunsson, and Christina Garsten. 2000. "Standardizing Through Organization." In *A world of standards*, edited by N. Brunsson and B. Jacobsson. Oxford: Oxford University Press.
- Aldrich, Howard E. and C. Marlene Fiol. 1994. "Fools Rush in? The Institutional Context of Industry Creation." *Academy of Management Review* 19(4):645–670.
- Allen, Floyd. 1971. "Looking for the Organic America, Part II: The Program to Certify Organic Farmers." *Organic Gardening and Farming* 18(9):80–83.
- Belasco, Warren J. 1989. *Appetite for Change*. New York: Pantheon.
- Biggart, Nicole W. and Thomas D. Beamish. 2003. "The Economic Sociology of Conventions: Habit, Custom, Practice, and Routine in Market Order." *Annual Review of Sociology* 29(1):443–464.
- Bowker, Geoffrey C. and Susan L. Star. 1999. "Sorting Things Out: Classification and its Consequences." Cambridge, MA: MIT Press.
- Brady, Diane. 2006. "The Organic Myth." *Business Week* October 16, pp. 50–56.
- Cain, Clifford. 1984. "Background and Update on State Bylaw Proposed Changes." *California Certified Organic Farmers Statewide Newsletter* 1(1):3–4.
- Campbell, John L. 2005. "Where Do We Stand? Common Mechanisms in Organizations and Social Movements." Pp. 41–68 in *Social Movements and Organization Theory*, edited by G.F. Davis, D. McAdam, W.R. Scott, and M.N. Zald. Cambridge: New York: Cambridge University Press.
- Campbell, John L., J. Rogers Hollingsworth, and Leon N. Lindberg. 1991. "Governance of the American Economy." New York: Cambridge University Press.
- Carson, Rachel. 1962. *Silent Spring*. Boston: Houghton Mifflin.
- Casile, Maureen and Alison Davis-Blake. 2002. "When Accreditation Standards Change: Factors Affecting Differential Responsiveness of Public and Private Organizations." *Academy of Management Journal* 45(1):180–195.
- CCOF. 1974. *CCOF Newsletter* 1(1).

- Czarniawska-Joerges, Barbara and Guje Sevon. 1996. *Translating Organizational Change*. Berlin ; New York: Walter de Gruyter.
- Davis, Gerald F. and Christopher Marquis. 2005. "Prospects for Organization Theory in the Early Twenty-First Century: Institutional Fields and Mechanisms." *Organization Science* 16(4):332–343.
- DiMaggio, Paul J. and Walter W. Powell. 1983. "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields." *American Sociological Review* 48(2):147–160.
- Economist. 2006. "Food Politics: Voting with Your Trolley." *The Economist*, December 9, pp. 81–83.
- Etzioni, Amitai. 1961. *A Comparative Analysis of Complex Organizations; on Power, Involvement, and their Correlates*. New York: Free Press of Glencoe.
- Fligstein, Neil. 2001. *The Architecture of Markets: An Economic Sociology of Twenty-First Century Capitalist Societies*. Princeton: Princeton University Press.
- Foote, James and Jerome Goldstein. 1973. "OGF Certification Program." *Organic Gardening and Farming* 20(4):89–92.
- Friedman, D. and Stuart Fishman. 1989. "Organic Certification Matures in 1988: Texas and Washington Offer Certification Programs." Pp. 134–138 in *1989 Organic Wholesalers Directory and Yearbook: Organic Food and Farm Supplies*, edited by D. B. Friedman. Davis, CA: California Action Network.
- Fujimoto, I. 1976. "Preface." Pp. v–vii in *Farming: Sources for a Social and Ecologically Accountable Agriculture*, edited by H. W. Esbenshade. Davis, CA: Citizen Action Press.
- Greenwood, Royston and Roy Suddaby. 2006. "Institutional Entrepreneurship in Mature Fields: The Big Five Accounting Firms." *Academy of Management Journal* 49(1):27–48.
- Guthman, Julie. 2004. *Agrarian Dreams: The Paradox of Organic Farming in California*. Berkeley: University of California Press.
- Hannan, Michael T. and John H. Freeman. 1989. *Organizational Ecology*. Cambridge: Harvard University Press.
- Haveman, Heather A. and Mukti V. Khaire. 2004. "Survival Beyond Succession? The Contingent Impact of Founder Succession on Organizational Failure." *Journal of Business Venturing* 19(3):437–463.

Hillyard, Roger. 1974. "The Role of the Organic Distributor." *The California Certified Organic Farmer Newspaper* 1(1):14.

Hsu, Greta. 2006. "Evaluative Schemas and the Attention of Critics in the US Film Industry." *Industrial & Corporate Change* 15(3):467–496.

Hsu, Greta and Michael T. Hannan. 2005. "Identities, Genres, and Organizational Forms." *Organization Science* 16(5):474–490.

Interview, Conducted May 22, 2003.

Interview, Conducted May 28, 2003.

Interview, Conducted June 10, 2003.

Interview, Conducted July 23, 2004.

Interview, Conducted June 16, 2005.

Interview, Conducted June 20, 2006.

Interview, Conducted June 28, 2006.

Kanter, Rosabeth Moss. 1968. "Commitment and Social Organization: A Study of Commitment Mechanisms in Utopian Communities." *American Sociological Review* 33(4):499–517.

Lipson, Mark. 1997. "Searching for the 'O-Word': Analyzing the USDA Current Research Information System for Pertinence to Organic Food." Santa Cruz, CA: Organic Farming Research Foundation.

Litwak, Eugene and Lydia F. Hylton. 1962. "Interorganizational Analysis: A Hypothesis on Co-Ordinating Agencies." *Administrative Science Quarterly* 6(4):395–420.

Lounsbury, Michael, Marc J. Ventresca, and Paul M. Hirsch. 2003. "Social Movements, Field Frames and Industry Emergence: A Cultural-Political Perspective on U.S. Recycling." *Socio-Economic Review* 1:71–104.

Meyer, John, W. Richard Scott, and David Strang. 1987. "Centralization, Fragmentation, and School District Complexity." *Administrative Science Quarterly* 32(2):186.

Peters, Suzanne. 1979. "The Land in Trust: A Social History of the Organic Farming Movement." PhD Diss., McGill University.

Pólos, László, Michael T. Hannan, and Glenn R. Carroll. 2002. "Foundations of a Theory of Social Forms." *Industrial & Corporate Change* 11(1):85–115.

Powell, Walter W. 1991. "Expanding the Scope of Institutional Analysis." Pp. 183–203 in *The New Institutionalism in Organizational Analysis*, edited by W.W. Powell, and P. DiMaggio. Chicago: University of Chicago Press.

Rao, Hayagreeva, Philippe Monin, and Rodolphe Durand. 2005. "Border Crossing: Bricolage and the Erosion of Categorical Boundaries in French Gastronomy." *American Sociological Review* 70(6):968–991.

———. 2003. "Institutional Change in Toque Ville: Nouvelle Cuisine as an Identity Movement in French Gastronomy." *American Journal of Sociology* 108(4):795–843.

Rao, Hayagreeva., Calvin Morrill, and Mayer N. Zald. 2000. "Power Plays: Social Movements, Collective Action and New Organizational Forms." *Research in Organizational Behavior*, 22:239–282.

Rodale, J. I. 1942. "Introduction to Organic Farming." *Organic Farming and Gardening* 1(1):3–5.

———. 1948. *The Organic Front*. Emmaus, PA: Rodale Press.

Rodale, Robert. 1972. "Don't Let Them Take Away the Word Organic." *Organic Gardening and Farming* 19(3):40–44.

———. 1971. "Join the Fight Against Organic Phonies." *Organic Gardening and Farming* 18(6):73–74.

Ronco, William. 1975. *Food Co-Ops*. Boston, MA: Beacon Press.

Rothschild, Joyce and J. Allen Whitt. 1986. *The Cooperative Workplace: Potentials and Dilemmas of Organizational Democracy and Participation*. Cambridge, Cambridgeshire; New York: Cambridge University Press.

Ruef, Martin and W. Richard Scott. 1998. "A Multidimensional Model of Organizational Legitimacy: Hospital Survival in Changing Institutional Environments." *Administrative Science Quarterly* 43(4):877.

Schneiberg, Marc and Sarah A. Soule. 2005. "Institutionalization as a Contested, Multi-Level Process: Politics, Social Movements and Rate Regulation in American Fire Insurance." Pp. 122–160 in *Social Movements and Organizations*, edited by G. F. Davis, D. McAdam, W. R. Scott, and M. N. Zald. Cambridge: Cambridge University Press.

- Scott, W. Richard. 2001. *Institutions and Organizations*. Thousand Oaks, CA: Sage Publications.
- Scott, W. Richard, Martin Ruef, Peter J. Mendel, and Carol A. Caronna. 2000. *Institutional Change and Healthcare Organizations: From Professional Dominance to Managed Care*. Chicago: University of Chicago Press.
- Scott Morton, Fiona M. and Joel M. Podolny. 2002. "Love or Money? The Effects of Owner Motivation in the California Wine Industry." *The Journal of Industrial Economics* 50(4):431–456.
- Simons, Tal and Paul Ingram. 2004. "An Ecology of Ideology: Theory and Evidence from Four Populations." *Industrial & Corporate Change* 13(1):33–60.
- . 1997. "Organization and Ideology: Kibbutzim and Hired Labor, 1951–1965." *Administrative Science Quarterly* 42(4):784–813.
- Sine, Wesley D., Heather A. Haveman, and Pamela S. Tolbert. 2005. "Risky Business? Entrepreneurship in the New Independent-Power Sector." *Administrative Science Quarterly* 50(2): 200–232.
- Singh, Jitendra V., Robert J. House, and David J. Tucker. 1986. "Organizational Change and Organizational Mortality." *Administrative Science Quarterly* 31(4):587–611.
- Stern, Robert N. 1981. "Competitive Influences on the Interorganizational Regulation of College Athletics." *Administrative Science Quarterly* 26(1):15.
- Stinchcombe, Arthur L. 1965. "Social Structure and Organizations." Pp. 142–193 in *Handbook of Organizations*, edited by J.G. March. Chicago: Rand McNally.
- Strang, David and John W. Meyer. 1993. "Institutional Conditions for Diffusion." *Theory and Society* 22(4):487–511.
- Thornton, Patricia H. 2002. "The Rise of the Corporation in a Craft Industry: Conflict and Conformity in Institutional Logics." *Academy of Management Journal* 45(1):81–101.
- Thornton, Patricia H. and William Ocasio. 1999. "Institutional Logics and the Historical Contingency of Power in Organizations: Executive Succession in the Higher Education Publishing Industry, 1958–1990." 105(3):801.
- Wade, James B., Porac, Joseph F., Pollock, Timothy G., and Scott D. Graffin. 2006. "The Burden of Celebrity: The Impact of CEO Certification Contests on CEO Pay and Performance." *Academy of Management Journal* 49(4):643–660.

Washington, Marvin. 2004. "Field Approaches to Institutional Change: The Evolution of the National Collegiate Athletic Association 1906–1995." *Organization Studies* (01708406) 25(3):393–414.

Weber, Max. 1978. *Economy and Society: An Outline of Interpretive Sociology*. Berkeley: University of California Press.

White, Halbert. 1982. "Maximum Likelihood Estimation of Misspecified Models." *Econometrica* 50(1):1–26.

Wright, Gerald C., Robert S. Erikson, and John P. McIver. 1985. "Measuring State Partnership and Ideology with Survey Data." *Journal of Politics* 47(2):469.

Zajac, Edward J. and Matthew S. Kraatz. 1993. "A Diametric Forces Model of Strategic Change: Assessing the Antecedents and Consequences of Restructuring in the Higher Education Industry." *Strategic Management Journal* 14(4):83–102.

Zald, Mayer N. and Roberta Ash. 1966. "Social Movement Organizations: Growth, Decay and Change." *Social Forces* 44(3):327–341.

Zelizer, Viviana A. 1978. "Human Values and the Market: The Case of Life Insurance and Death in 19th-Century America." *The American Journal of Sociology* 84(3):591–610.

Zuckerman, Ezra W. 1999. "The Categorical Imperative: Securities Analysts and the Illegitimacy Discount." *American Journal of Sociology* 104(5):1398–1438.

PAPER 2:
MECHANISMS GENERATING VARIATION:
REGULATORY CHANGE IN THE ORGANIC FOOD INDUSTRY

INTRODUCTION

As a market or community of organizations grows and consumer demand increases for particular products or services, the state often takes an increasingly active role in monitoring organizations' activities, endorsing and rewarding community members, and shaping the rules and standards for legitimate activities and outputs (Baum and Oliver 1992). The law, through instrumental as well as normative and cultural-cognitive means, has significant outcomes for organizational forms (Hannan and Freeman 1989; Fligstein 1990; Ranger-Moore, Banaszak-Holl, and Hannan 1991; Halliday, Powell, and Granfors 1993; Dobbin and Dowd 1997; Schneiberg 2002; Ingram and Rao 2004), the distribution of property rights (Campbell and Lindberg 1990), the adoption and curtailing of practices within firms (Edelman 1990, 1992; Mezias 1990; Sutton, Dobbin, Meyer, and Scott 1994; Edelman, Uggen, and Erlanger 1999; Kelly 2003), organizational performance (Carroll, Goodstein, and Gyenes 1988; Ingram and Simons 2000), and the creation and subsequent expansion of new markets (Dobbin 1994; Carruthers, Babb, and Halliday 2001; Fligstein 2001; Fligstein and Stone Sweet 2002).

Despite insights generated through this research, the growing body of literature on law and markets has come under critique for its conceptualization of regulation as a uniform, exogenous environmental element— a “one-dimensional background incentive system reshaping parameters for means-ends rational calculation . . . without having the potential of altering the fundamental nature, goals or meaning of economic activity” (Stryker 2003:13). As this critique indicates, law has been operationalized in most studies as either a dichotomous variable (passed or not passed; e.g., Wade,

Swaminathan, and Saxon 1998) or as “regulatory periods” (e.g., Ranger-Moore et al. 1991; Dobbin and Dowd 1997). Within such blunt-edged conceptualizations, variation that exists in the content and potential efficacy of law is not adequately accounted for. Nor are there clear explanations within these conceptualizations for the sources of regulation and how or why shifts in its content occur over time and across polities.

To advance this literature, Stryker (2003) and Edelman and Stryker (2005) suggest that organizational sociologists move beyond theorizing law as an exogenous element to consider law and economy as “deeply embedded in social action and organization and linked through political and institutional mechanisms” (p. 527). Since relatively little is known about how organizations impact legal structure (much more is known about the inverse), treating law as a dependent variable is a significant move toward this end. However, there are a few studies that have treated law as a dependent variable, but these studies still generally under-specify outcomes by conducting formal modeling that constrains law to either a “1” or a “0”—present or absent (e.g., Zhou 1993; Soule and Zylan 1997). This dichotomous operationalization masks much of the complexity and distinctiveness that accrues within legal code over time and space.¹ Without an understanding of this complexity, institutionalization is often uncritically cast as a 1/0 affair (Strang and Sine 2002; Schneiberg and Clemens 2006:217).

The foregoing study argues that disrupting the trend of analytically homogenizing legislation opens possibilities for understanding variation in the content of what is being diffused (Strang and Soule 1998) and its relationship to intra-industry governance organizations—an approach that “presents a rich set of questions for new institutionalism” (Ingram and Clay 2002:532).

¹ For example, Zhou (1993:545) treats licensing legislation as “institutionally similar” (and thus codes it dichotomously); Ingram and Rao (2004) similarly consider their dependent variable as a discrete event, coding the imposition of greater taxes on chains dichotomously (1/0).

Recent work (Schneiberg and Bartley 2001; Strang and Bradburn 2001; Ingram and Rao 2004; Schneiberg and Soule 2005) has begun to move toward a more nuanced understanding of the origins, antecedents, and factors that account for regulation within a market. These studies advance theories of state-market relations by tracing the influence of particular actors and institutional processes on the enactment of regulation. In addition to identifying antecedents, these studies move beyond the dichotomous modeling of law as present/absent to differentiate between distinct types of regulation.²

I advance this research agenda here by focusing needed attention on how standards-based certification organizations (SBCOs)³—key sources of industrial order in many industries—influence the content and evolution of state regulation. Such an approach is congruent with ongoing conversations in political science regarding the blurring of public and private governance (Streeck and Schmitter 1985; Stoker 1998; Pierre and Peters 2000; Kersbergen and Van Waarden 2004). Although theoretical work has highlighted the key role that associations and standards organizations play in the governance of markets and industries (e.g., Streeck and Schmitter 1985; Brunsson and Jacobsson 2000; Campbell, Hollingsworth, and Lindberg 1991; Scott, Ruef, Mendel, and Caronna 2000), an understanding of the relationship between these types of governance organizations and the state is relatively undeveloped. In this paper, I consider the dynamic nature of law content, hoping to answer questions regarding when and under what conditions private governance organizations influence legal dynamics.

² For instance, Schneiberg and Bartley (2001) used a competing-risks model to determine the antecedents of full rate-control legislation versus weaker, antidiscrimination legislation in the early fire insurance industry. In their study of anti-chain-store laws, Ingram and Rao (2004) modeled both the enactment and the repeal of legislation.

³ By SBCO, I mean an organization whose primary purpose is to create and promote standards, verify the compliance of other organizations to those standards, and formally acknowledge that an organization has met the standards through the conferral of a certification, endorsement, or accreditation.

This question is theoretically significant for several reasons. First, there is limited research on the influence of private governance institutions (Ingram and Clay 2000) such as SBCOs, particularly vis-à-vis the state. Second, with only two notable exceptions, which will be reviewed below (Grattet, Jenness, and Curry 1998; Strang and Bradburn 2001), studies of industry legal structures primarily consider general patterns of diffusion, not the specific content of laws. By accounting for patterns of variation in content, my study provides a more precise, nuanced understanding of the relationship between the state and private governance within an industry context. Third, to this point, the only theoretically significant, longitudinal categorization of the content of law (Grattet et al. 1998) has not been empirically tested, nor has it been applied specifically to a market/industry context. Building on this promising but still emergent body of work, this study takes as a point of departure the notion that accounting for the differential content of laws and the political processes that drive them is crucial to a comprehensive theory of state-market relations.

To develop this theory, I highlight contributions from two different approaches that serve as starting points. One set of these studies emphasizes how organizational actors influence law creation and change, establishing a middle ground between overly structural or overly interest-based explanations of regulation. A second subset of studies focuses direct attention on laws, their specific provisions, and their internal dynamics, addressing current weaknesses in the literature that deemphasizes law as a phenomenon to be explained. Taken together, these studies highlight the importance of considering the role of organizational action and interests in impacting the content and trajectory of law.

THEORY

In counterpoint to conventional accounts of diffusion and institutional change that suggest that the adoption of structure and practices are driven initially by

perceptions of efficiency and then become legitimate and taken for granted (Tolbert and Zucker 1983; Zhou 1993; Grattet et al. 1998), a set of scholars are increasingly integrating political factors into accounts of the creation and spread of legal and regulatory policies and structures (Schneiberg and Bartley 2001; Schneiberg 2002; Ingram and Rao 2004; Edelman and Stryker 2005; Schneiberg and Soule 2005). For example, Schneiberg and Soule (2005) found that the institutionalization of insurance-rate regulation among U.S. states represented a “settlement” resulting from political conflicts over competing models of industrial order. This settlement was a product of social movement mobilization and multilevel institutional processes that resulted in a “multiplex, fractured institutional field” (p. 152). Federated state systems allowed for “diverse but largely uncorrelated and relatively weak pockets of institutionalization . . .” and “the presence of multiple platforms and ports of entry create[ed] possibilities for broadly organized but competing projects, the development of institutional contradiction within or across levels, and the institutionalization of multiple, even contradictory, industrial orders” (p. 156). This research demonstrates that diffusion can be profoundly political and is driven by “the political dynamics of opposition, argumentation, contestation, and compromise” (p. 156). Such political contestation and its influences provide an agency and action-oriented approach to institutionalization in which extant institutional arrangements are viewed as settlements arrived at through “articulation, layering, bricolage, and recombination rather than homogenization or convergence” (p. 157).

Similarly, Ingram and Rao (2004) reveal how competition between rival organizational forms can be manifest in broader regulative structures. Using the anti-chain-store movement and the countermobilization by chain stores of the early twentieth century as a context, they demonstrate how multilevel political and institutional dynamics influenced the passage and repeal of state-level anti-chain-store

legislation. A Supreme Court ruling deeming constitutional an anti-chain-store law in Indiana spurred 27 additional state legislatures to enact legislation that imposed higher taxes on chain stores. Counter-mobilization efforts on the part of chain stores ensued. Chain stores fought tax legislation and sought to improve their public image through a collective association called the National Chain Store Association (NCSA). From their analysis, Ingram and Rao found that the number of independent stores and the degree of independent homogeneity⁴ predicted the passage of anti-chain-store legislation. By contrast, and consistent with the counter-mobilization thesis, the number of chain stores prevented the enactment of such laws. This research underscores the idea that endorsement and support of the state is not a given nor an exogenous outcome of broader social and economic changes as much current research maintains. Rather, it is often the outcome of actions of competing organizations and broader institutional processes within an industry.

Given that laws and rules are central to social order in virtually every facet of social life, a focus on legal structure provides a useful context to understand the mechanisms that generate and challenge order in organizational fields/markets. In a study of the British Columbia Water Act from 1914 to 2002, Jennings, Schulz, Patient, Gravel, and Yuan (2005) found that the evolution of water law was characterized by periods of incremental expansion and increased complexity that were punctuated by legal rule consolidation and rewriting that resulted in functionally differentiated law. Consolidation of BC water law transformed organically evolved, redundant legal structures into modern, structurally unique sets of rules that displaced particularistic rules with fewer, broadly applicable rules meant to cover a broad class of situations. Such dynamics tend to increase “the modularity of the rule system and thereby

⁴ Homogeneity in this setting refers to the degree to which independent stores within a state belonged to the same retail segments (e.g., druggists, shoe stores, grocers). A Herfindahl index was used to construct this variable.

facilitates independent adaptation by its parts” (Jennings et al. 2005:643). While this paper places needed attention on the nature and evolution of the corpus of law, it neglects the role of actors that may have driven and/or been served by these rule changes.

Two other relevant studies focus attention on the content of law. In a study of the content of hate crime laws in the United States, Grattet et al. (1998) identify two mechanisms that contribute to variation in content across state laws: exclusivity and domain expansion. Exclusivity refers to the practice of adopting a law as a symbolic gesture (generally to appease constituencies) and leaving it unrevised even as updated versions appear in other states. To illustrate the mechanism of exclusivity, Grattet et al. point to the fact that most states passed a single hate crime law at only one point in time (only 8 of 33 adopted more than one type of hate crime law, and only 3 of those 8 did so through subsequent amendments). Once this initial law was passed in most states, legislators remained committed to that approach and did not amend it even when more progressive laws were passed in other states. In the absence of updating laws to be consistent with contemporary trends, exclusivity contributed to overall legal heterogeneity.

The second mechanism, domain expansion,⁵ refers to the process by which initial, narrowly written statutes gave way to more expansive ones. According to Grattet et al. (1998), as the existence of a particular category of law becomes institutionalized and thus taken for granted, legislators and their constituencies are more apt to amend/tailor the law. In the context of hate crime law, they find that once the existence of such law was well established, state legislatures were able to more

⁵ Drawing from social problems literature, domain expansion refers to “increases in the ‘substantive territory’ (in terms of both activities and protected statuses) covered by the law and/or institutions positioned to construct and respond to a social problem” (Grattet et al. 1998:291). For example, Best (1990) describes how particular definitions of child abuse gained currency among professionals. “Child abuse” replaced an earlier, narrower concept of “battered child,” and the phrase “child abuse and neglect” was eventually favored over just “child abuse.”

fully elaborate on the basic form that was available for imitation. Elaboration on the basic theme of hate crime legislation led to increased diversity of legal content in the later period of diffusion. While this study develops important mechanisms to account for variation in legal content, it, like the water law study, fails to account for the role of interests in these processes.

By contrast, Strang and Bradburn (2001) attend to both content and interests in a study of the content of state-level health maintenance organization (HMO) legislation. Before the passage of the federal HMO Act, there was high variation in the content of state laws. Following the passage of this federal legislation, this heterogeneity declined rapidly. The federal law and various model laws established by industry associations such as the National Association of Insurance Commissioners and the National Association of HMO Regulators provided state legislators with templates to guide their efforts to fashion and enact legislation in their respective states. Strang and Bradburn deduce that convergence upon a set of core legal provisions occurred due to the availability of these models, which were promoted through strong associational networks. Nonetheless, some elements of the state laws were more susceptible to political action. For example, states with more HMOs were more likely to pass legislation mandating “dual choice,” which provided HMOs with mandated access to employee groups, but were less likely to pass laws that 1) provided plan members a say over HMO governance; and 2) that mandated open enrollment, which opened plans to all people despite their insurance risk. The findings of this study suggest that HMOs were not the drivers of HMO policy, but their reaction to state law demonstrated that HMOs mobilized to amend both state and federal regulatory provisions to their benefit. This study is an important step in linking variation in law content with the configuration of interests present in organizational fields.

Integrating these two sets of studies, important theoretical advances are to be had by pursuing research that examines the role of organizational action in regulatory change and evolution. Based on the findings of these studies, it is plausible that intra-industry governance organizations such as SBCOs may be important in shaping the dynamics of legal regulation of industries. In the following section, I introduce the empirical context for this study, which is then followed by hypotheses, data and methods, results, and conclusions.

EMPIRICAL CONTEXT

In December of 2000, the United States Department of Agriculture (USDA) issued binding rules to govern the organic food industry with the intent to assure consumers that agricultural products labeled as organic meet consistent and uniform standards. These rules were implemented the following spring, and the USDA granted a transitional period that extended to October of 2002. As part of this sweeping federal program, the USDA established the National Organic Program (NOP), whose purpose is to develop and implement national standards to govern the marketing of agricultural products as organically produced. NOP regulations require that agricultural products labeled as organic originate from farms or handling operations certified by a state or private agency that has been accredited by USDA.

However, prior to the federal standards and accreditation system, a patchwork of SBCOs and state organic food laws⁶ served as the primary source of governance and enforcement in the U.S. organic food industry. In 1973, Oregon passed the first state-level regulation, predating the federal legislation by 17 years. Drawing heavily on the principles, practices, and standards developed by organic grower communities and nascent certification programs, the Oregon 1973 regulation included a definition

⁶ For the purposes of this paper, I refer to both statutory law (law enacted by the legislative branch of government) and administrative law (the legally binding body of regulations, rules, and orders of administrative agencies in the government) when I use such terms as “law,” “regulation,” or “statutes.”

of “organic food”⁷ and “organically processed food”; required that organic producers keep records for two years; dictated that anything labeled as organic shall contain no more than 10 percent of the allowable residues of any pesticide or other synthetic or artificial substances; promulgated rudimentary livestock rules and banned the use of antibiotics; required that certifier contact information be on the label of the organic food; mandated the state to investigate reasonable reports of violations of the law; and included a provision that made illegal the labeling of something as organic that was not produced in accordance to the law. Thus, this first organic food law, while only two pages, codified into law key definitions, basic production rules and processes, and punitive measures.

Soon after the Oregon regulation, a number of states passed organic laws—Massachusetts in 1978 and Maine, California, and Connecticut in 1979. The Connecticut and Massachusetts laws were succinct, whereas those of Maine and California were more comprehensive in scope. California’s definition of organic moved beyond that of Oregon’s by including both prohibited and permitted materials for use in the production, harvesting, and processing of organic food products. For example, the law permitted the use of Bordeaux mixes, soluble kelp, lime, sulfur, gypsum, and soap but prohibited the use of petroleum solvents, diesel, and all other petroleum fractions. This list of appropriate and prohibited substances became known as the “materials list.” Following its initial appearance in California law, similar materials lists found their way into much of the subsequent regulation established in other states. In addition, the California law was particularly innovative in linking the term “organic” directly to the state code through labeling. The 1979 legislation required that all products marketed as organic include on their label the following

⁷ “Food which has been grown: without being subjected to pesticides, synthetic fertilizers, or other synthetic chemicals: in soil in which the humus content is increased only by the addition of natural matter: and in soil in which the mineral content is increased only by the application of natural mineral fertilizers of other natural matter” (Oregon 1980).

phrase: “Organically Grown in Accordance with Section 26569.11 of the California Health and Safety Code” (California 1979:3146).

Following the passage of these early laws, a handful of Plains states, including North Dakota, South Dakota and Nebraska, passed organic food laws. These laws were more concise and had little in common with existing laws in California, Oregon, and Maine. Although all of these states defined organic, none required organic labeling to comply with state code. Verification methods were limited to state-conducted inspections in most states. Punitive elements were scant, with the majority of laws only outlining a mislabeling clause.

Pioneering a dramatically different type of law in 1985, Washington passed legislation that mandated the creation of a state-run organic certification program, initiating a move that subsequent states would follow. Texas shortly thereafter also established a state certification program. Although the Washington and Texas laws included many of the provisions common to the California and Maine laws, Texas added a number of novel provisions that gave the State Department of Agriculture clear jurisdiction over the creation and enforcement of organic standards. The department developed a certification program, retained the right to inspect property and records, and had the power to take punitive measures against violators of the law. Such power was manifest in the form of injunctions, revocation of certification status, imposition of fines, and the issuing of stop-sale orders.

Having comprehensive models of state programs to build from, other states began passing organic food laws and establishing state certification organizations. Between 1989 and 1990, 13 states passed legislation, with 8 establishing state-run certification organizations. These laws differed dramatically from those established in the late 1970s and were more consistent with the 1988 Texas law. They all included a definition of “producer,” created a state label (e.g., “Idaho Certified Organic”) and

mandated the respective state departments of agriculture to create a certification program. Other common provisions included mislabeling clauses, fines, inspections by the state, revocation of certification status, and definitions of “processor,” “distributor,” and “certification.”

Nearly all of these laws mandated the establishment of an advisory board. The board generally consisted of department employees, organic producers, consumers, and cooperative extension employees. The board assisted the director in formulating and carrying out the state organic program. In some cases, this board was given power to levy fees to ensure the continued functioning of the certification program.

Prevalent in these laws were provisions requiring producers to register with the state and provisions to assure that all food labeled as organic was in compliance with the state code. Also present was a shift in the constitutive language of the law. The longer, more explicit definitions of organic found in earlier laws were either replaced by the term “certified organic” or supplemented with language indicating the need to certify products. For example, Colorado’s 1989 law defined organic as “agricultural products grown or produced in Colorado without the use of synthetic pesticides, synthetically compounded fertilizers, or synthetic growth hormones and *certified by the department as complying with all standards and regulations established by this article*” (Colorado 1989:1376, emphasis added). Thus, laws that redefined “organic” to mean “certified organic” required all food labeled as organic to be compliant with state code. This development coupled with the authorization to conduct certification equated to a significant increase in state participation in the industry.

States with existing organic food laws also saw the period from 1989 to 1990 as a time to revisit and amend these laws. Texas, Washington, Colorado, New Hampshire, Rhode Island, California, Oregon, Minnesota, Wisconsin, North Dakota, and Maine all amended their laws to update the legal language and increase the

comprehensiveness and efficacy of their laws. For example, in all of these states, idiosyncratic definitions of “organic” were supplemented with definitions that included “certified organic.” In the case of California, which had the most comprehensive organic food law at the time (with the exception of states with state-run certification programs), amendments required certification organizations and producers to register with the state. They also mandated the imposition of fines for those who mislabeled products.

Between 1973 and 2000, 36 states passed organic food laws. These laws exhibited significant variation in their content. Some states passed statutes of just one paragraph, whereas others exceeded 60 pages of text. Figure 2.1 shows the temporal patterning of state-law passage and amendments.

HYPOTHESES

To move beyond dichotomous conceptualizations of regulatory structure that tend to dominate diffusion and institutional literatures (Strang and Soule 1998), I focus on mechanisms that generate variation in legal content. Content variation is an important topic of study because it allows assessment of the degree of convergence/divergence of regulatory structures across polities. Further, it permits more accurate mapping of particular legal content to specific field-level interests (Strang and Bradburn 2001). I focus on two key mechanisms responsible for variation in law content. The first mechanism is regulatory inertia. By regulatory inertia, I refer to regulation that is passed but is then left unrevised even as more efficacious or legitimate versions of similar regulation exist in other states.⁸ Therefore, as laws change over time, those states that do not update their laws contribute to overall legal heterogeneity.

⁸ Regulatory inertia is similar to Grattet et al.’s (1998) concept of exclusivity.

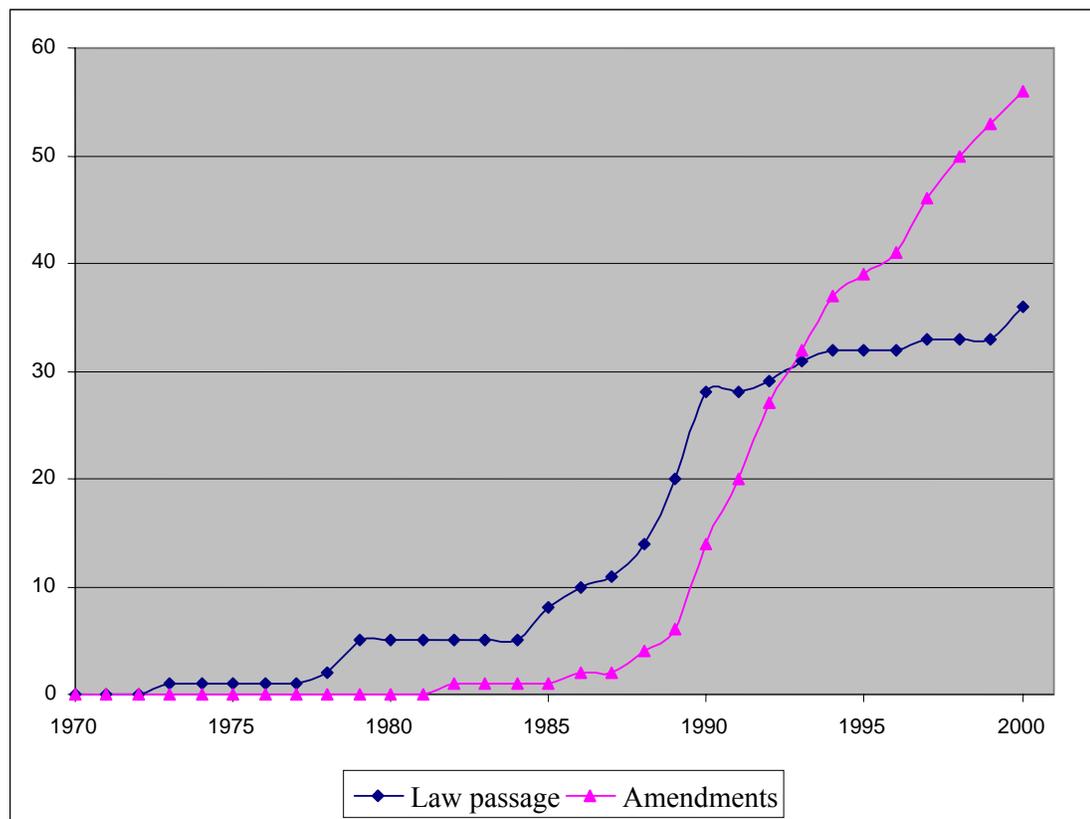


FIGURE 2.1: NUMBER OF ORGANIC FOOD LAWS AND AMENDMENTS PASSED, 1970–2000

A second mechanism that can contribute to legal heterogeneity in a comparative analysis is regulatory elaboration. By regulatory elaboration,⁹ I refer to the refinement or expansion of existing legal structure. Legal elaboration occurs through formal legislative amendment or through bureaucratic rule processes. Legal elaboration is an important element of legal evolution because it represents efforts to clarify extant regulation and/or expand the scope and efficacy of existing rules. Such efforts are generally driven by interested parties with sufficient resources to instigate change, or alternatively, by crises that require the state to revisit previously mandated regulation.

⁹ Regulatory elaboration is similar to Grattet et al.'s (1998) concept of domain expansion.

While both inertia and elaboration mechanisms work against conformity and standardization of regulation across states, past research suggests they do so for contrasting reasons that function as a result of temporal differentiation. In their study of hate crime legislation, Grattet et al. (1998) find that inertia occurred in the early history of hate crime laws because states did not yet have a dominant model to look to when crafting legislation. By contrast, elaboration occurred later because once the general principles of the legislation were in place, legislators were freer to expand the domain of hate crime law to include broader conceptions of what constituted a hate crime and what groups received protected status under the law. Based on their findings, the authors conclude that timing is everything: “the content of a state’s law is contingent upon *when* it enters the ongoing institutionalization process” (Grattet et al. 1998:303). I examine this conclusion and the conceptual/predictive power of regulatory inertia and elaboration in the context of organic food industry law. The first hypothesis I propose is to assess if inertia and elaboration occur in a similar temporal fashion in the U.S. organic food industry as was found in the context of hate crime legislation. Thus,

Hypothesis 1: Regulatory inertia in state organic food laws will occur during the early period of industry law passage. Regulatory elaboration will occur in the later period.

According to Grattet et al. (1998), timing should explain the occurrence of regulatory inertia and elaboration. However, I posit that timing may not be the primary factor in determining differential content of law. As a host of scholars suggest (Schneiberg and Bartley 2001; Strang and Bradburn 2001; Schneiberg 2002; Ingram and Rao 2004; Schneiberg and Soule 2005), organized interests play a central role in

shaping regulatory structures. More specifically, Strang and Bradburn (2001) have shown how interests have impacts on the differential content of the law itself.

As noted in the previous paper, SBCOs were central to the development of the organic food industry because they created and promulgated standards, verified growers' compliance with those standards, and then provided a certification or endorsement to compliant growers. The development of these key conventions decreased the information asymmetries between producer and consumer regarding product quality (Akerlof 1970) and facilitated the rationalization of the nascent market for organic products, moving it from a "movement" to an "industry."

SBCOs generally rely on normative pressure and incentives to get other organizations to adopt and subsequently adhere to their standards (Brunsson and Jacobsson 2000). To preserve their normative power, they tend to avoid efforts by the state to control their affairs. For example, when federal legislation was a possibility in the early 1990s, one local nonprofit SBCO reported being wary of the "possibility of government agencies taking over certification" and adamantly maintained that "any organic legislation should allow for the presence of private certification organizations" (Sills 1989:11). This local SBCO formed a committee to "study the possible appropriate changes in the state law and form a consensus about our role in federal legislation" (Sills 1989:11).

While SBCOs tend to avoid being controlled by the state, SBCOs nonetheless frequently seek to influence and control state policies (Brunsson and Jacobsson 2000; Sassen 1998; Hirst and Thompson 1996) in order to limit intrusive state intervention and to preserve and enhance their own normative power within their respective field of influence. Further, SBCOs, like industry associations and other collective actors, can be influential in the regulatory process because legislatures and state agencies tend to rely on industry groups for expertise, information, and, in the case of agencies, for

personnel to carry out their duties (Breyer 1982; Yeager 1990; Edelman and Stryker 2005). SBCOs in particular can exert substantial influence because of their pre-existing intra-industry governance mechanisms that can easily serve as models for state legislation.

Despite ostensible justification for participation in influencing the construction of regulatory infrastructure, not all SBCOs engage in efforts to shape state-level regulatory structure. Recent calls to explain sources of heterogeneity in organizational fields (Lounsbury and Ventresca 2002; Schneiberg and Clemens 2006) suggest that disaggregating organizational forms into more distinct categories may reveal much regarding their resource mobilization potential, fundamental differences in ideologies, and the scope and/or focus of distinct organizational forms. Understanding these subtle differences can shed light on the degree to which organizational forms can succeed in achieving higher order institutional outcomes.

In the context of the U.S. organic food industry, I argue that certain SBCOs exhibited features and proclivities that allowed them to serve broader purposes beyond core functions associated with certification and made them more likely to be interested in fostering state-level regulatory infrastructure. I maintain that these two factors had implications for the regulatory dynamics of the states in which they were located.

In the previous paper, I arrayed SBCOs along five key dimensions (source of solidarity, authority structure, social control/relations, incentive structures, and specialization) that highlighted salient differences in the degree to which SBCOs could be classified as more collectivist or more bureaucratic in orientation. Local nonprofit SBCOs tended to maintain a shared ideology that served as a primary means of cohesion and commitment manifest in the use of volunteer labor to accomplish organizational goals and day-to-day tasks. This facilitated the ability to engage in collective behavior that would benefit the organic market as a whole. Such ideological

commitment is noted as a key element of solidarity within business groups (Granovetter 2005). Further, local nonprofit SBCOs were more likely to have control over local institutions, to make decisions that would affect the behavior of local organizations, and to redress conflict within the community rather than resort to an extra-local organization to resolve the issue. Furthermore, local nonprofit SBCOs and their members were generally focused on state and local marketing outlets for their products. Finally, these organizations engaged in various activities such as the creation and distribution of monthly newsletters, hosting conferences, and giving on-site workshops that enhanced their ability to mobilize and lobby for organic food laws. Anecdotal evidence suggests that certification organizations, recognizing the need for regulation, initiated most of the early organic food laws (California Action Network 1989). For example, in California, CCOF wrote the 1990 legislation and worked closely with Assemblyman Sam Farr (D-Monterey) to pass it into law (Brammer 1989). In an editorial in the CCOF newsletter, a retailer of organic food reflected upon the political power that CCOF had developed:

I think the work CCOF has done for this legislation produces benefits much more valuable than the legislation itself. CCOF has positioned itself and the California organic trade as a player in Sacramento. It has made political connections and won some respect. It has opened up lines of communication with CDFA and has clearly identified CDHS' lack of desire to serve the organic trade. With more money and support from other sectors in the California organic trade, we will be able to exercise some political muscle in the coming years and make real changes. (Fishman 1989)

Interviews with local nonprofit SBCO members and employees revealed similar efforts by SBCOs to participate in both the writing and passage of state organic food laws. For example, the Maine Organic Farmers and Gardeners Association (MOFGA) actually wrote Maine's first organic labeling law. MOFGA played a central role in writing the subsequent amendments following the initial law passage (Interview, January 17, 2002). Given their mobilization capacity generated through

shared ideology, past organizational experience, and existing infrastructure, and their focus on local markets, I posit:

Hypothesis 2a: States with local nonprofit SBCOs will be more likely to experience regulatory elaboration.

Hypothesis 2b: States with local nonprofit SBCOs will be less likely to experience regulatory inertia.

In contrast to local nonprofit SBCOs' bottom-up approach, chapters of the nationally federated certification organization, OCIA, were founded largely through a top-down process in which OCIA employees actively recruited conventional farmers into organic markets. Unlike their local nonprofit counterparts, OCIA members were interested primarily in certification and the economic gains to be had from growing organic. Consequently, they had less of an ideological component motivating their membership and actions in the marketplace, decreasing their potential mobilization capacity. In addition, OCIA chapters focused on national and international markets (outside the jurisdictional boundaries of state governments), which made them presumably less affected by and less interested in state-level legislation.¹⁰ Consequently, OCIA members left state-level political lobbying to other players in the growing industry. When asked about OCIA's role in lobbying for state legislation, a past director of OCIA said, "OCIA was interested, but they really didn't guide the chapters in that respect. They would tell the chapters that you should do this [lobby for legislation] but they really didn't supply guidance." She indicated that OCIA members

¹⁰ This is similar to Ingram and Rao's (2004) finding that chain stores (national organizations with national interests) sought influence through the Supreme Court, whereas independent stores, with their relatively limited resources and organization, pursued a strategy that targeted public opinion and state legislatures. While OCIA and local nonprofits were not directly in conflict in the same way the independent and national chains were over anti-chain-store legislation, they were similar with regard to their strategies and capabilities.

were largely indifferent to lobbying for state legislation: “. . . Most of them [the farmers] said, ‘I just want to farm my fields’” (Interview, July 23, 2004). An informant from Ohio corroborated this finding, suggesting that while OCIA was not active in lobbying for a state organic food law, the local certification organization, the Ohio Ecological Food and Farm Association (OEFFA), was the driving force behind its passage.

As such, I posit that OCIA’s influence on state-level laws would tend toward inertia—if a law is passed in a state dominated by OCIA, I would expect it to be revisited with less frequency. According to this line of reasoning, I hypothesize:

Hypothesis 3a: States with OCIA chapters will be less likely to experience regulatory elaboration.

Hypothesis 3b: States with OCIA chapters will be more likely to experience regulatory inertia.

DATA AND METHODS

Given that the United States is a fragmented state structure (Meyer and Scott 1983), U.S. states have historically been the sites of substantial legal, political, and economic activity that results in geographically distinct institutions, governance structures, meaning systems, and practices (Markusen 1985, 1987; Saxenian 1994). Because I focus on the relationship between SBCOs and legal structure across states and over time, the state-year is the natural unit of analysis for this study. The window of observation is from 1970 to 2000. 1970 serves as the baseline year because it was in that year that Rodale initiated preparations for the first certification program. The window ends in 2000, the year that the USDA released the final regulations that preempted all previous state organic food laws and rules.

Dependent Variables. Data for the dependent variables in this study are drawn from all state organic food laws and administrative rules from the first law passage in 1973 through the end of the observation period in 2000. I first consulted Westlaw to obtain all legal code in all states related to organic food production between 1973 and 2000. While Westlaw maintains a fairly comprehensive historical record of all states' legal statutes, administrative laws, and amendments, I found it necessary to conduct archival research to access legislation predating Westlaw's database. After obtaining all organic food legislation/administrative law (and subsequent amendments) for each state, I coded each state-year according to the number of provisions that each law contained.¹¹ For each mention of a new provision, the state-year received a one for that provision, otherwise, zero. See Appendix A for a list of all provision categories. This vector of 1 and 0s became the basis for the dependent variable *Legal variation*.

Because a vector of over 100 provisions is unwieldy for analysis, I used the vector to generate a similarity score for each state. To do so, I first established a baseline from which to compare all state-years. This baseline was the first law passed (Oregon 1973). To compute similarity of all other state-years to the Oregon 1973 law, I used the Sorenson-Dice binary-based similarity measure (Dice 1945):

$$\frac{2a}{2a + b + c}$$

¹¹ Issues of intercoder reliability are important to consider when coding messages and textual artifacts (Neuendorf 2002). However, intercoder reliability is markedly more important for latent, rather than manifest, content because with latent content, coders must make subjective judgments and interpretations based on their own mental schema (Potter and Levine-Donnerstein 1999). Legal regulation is manifest content because regulatory language seeks to be as plain as possible by defining key terms, clearly stating the obligations and rights of persons affected, and delineating key elements of compliance. As such, it is substantively much easier to code than latent ideas present in conversations or in newspaper stories. Therefore, I alone coded all data, taking care to capture all provisions in all state regulation. To do this, I began with one state law and coded all regulatory elements. I then coded a second piece of legislation. If the second had new provisions, I created a new category for that provision and went back and checked the first law for the new provision. Once I had reviewed all legislation for all states (and all subsequent amendments), and exhausted the number of possible provisions across state-years, I then re-read all statutes once more to check for any miscoding that may have occurred in earlier statutes read.

where a is the co-occurrence of a provision in both laws; b is the presence of a provision in the Oregon 1973, but not in the other state-year being compared to the baseline; and c is the inverse (presence of a provision in the state-year being compared, but not present in the Oregon 1973 year). The Sorenson-Dice measure is in a class of similarity measures that do not consider negative co-occurrences.¹² As apparent from the measure, Sorenson-Dice weights positive co-occurrences of provisions, which in the case of organic food laws is favorable because it emphasizes the active inclusion in a law.

The raw similarity measure calculated for each state-year thus shows how much a given state in year t deviates from the original vector of provisions in the Oregon 1973 law.¹³ Instead of inferring inertia by simply considering which states passed one law but then never altered that law (Grattet et al. 1998), I develop a more complex measure that takes into account legal content variation among all states on a temporal basis. To construct this measure, I calculated the mean similarity score for all laws by year for each year of the observation window. I then subtracted each state's similarity score in year t from the mean similarity score for all states in year t . A higher value (values ranged from .27 to -.37) for a particular state-year set of provisions means it is less similar to the Oregon 1973 law than the overall mean for that year. Conversely, a lower value means that a particular state-year configuration of provisions is more similar to the Oregon 1973 law than the overall mean for that year. For example, in 2000, Montana had a similarity score of .6; it was the state most similar to Oregon 1973 for that year. However, the overall mean for 2000 was .23. Thus, Montana in 2000 deviated from the yearly mean score in 2000 by .37. In contrast to Montana 2000, the opposite condition exists for Nebraska 1986. Nebraska

¹² In a study of molecular markers, the Sorenson-Dice coefficient was found to be an effective and efficient measure, prompting the authors to suggest its use for practical applications (Duarte, Santos, and Melo 1999).

¹³ Because Oregon 1973 was used as the baseline, I excluded Oregon from the data set.

passed a law in 1986, with the similarity score being .13. As such, Nebraska was quite different from Oregon 1973. In 1986, the mean similarity score for all states was .40, suggesting that the overall mean of all state similarity measures for 1986 was closer to the Oregon 1973 law than was Nebraska's. Consequently, the Nebraska 1986 law deviated from the 1986 mean by .27.

Because I am interested in the degree to which a state is inertial in its state law content for a given year, I take the absolute value of the difference between the mean similarity score for all states at year t and the similarity score for each state at year t . This yields a dependent variable capable of capturing individual state deviation from the yearly mean in either direction (+ or -). Thus, the dependent variable, once the absolute value is taken, ranges from 0 to .37.

To analyze *Legal variation*, I used a linear regression model. Because the data set consists of multiple state observations, observations are not independent, violating a core assumption of ordinary least squares (OLS) regression. As such, these data are prone to serial and cross-sectional autocorrelation and heteroscedasticity. To correct for these problems, I use the xtreg command with the fixed effects option in Stata 9 to model the dependent variable *Legal variation*. Because the dependent variable ranges from 0 to .37 and is truncated, tobit analyses were conducted and resulted in identical results as reported here.

To assess the degree of regulatory elaboration, I operationalized the second dependent variable in this study as the number of amendments passed. Amendments to the law such as renumbering or making cosmetic changes to the entire code are excluded from the analysis. Any states that had not passed an organic food law are also excluded from the analysis. Given the large amount of zeros present in the data, I use a zero-inflated negative binomial model using the zinb estimation procedure in Stata 9. Because there are multiple observations for the same state in the analysis, I

correct for the possible violation of independence among observations by calculating the standard errors of coefficient estimates using a robust clustering technique, clustering on state (White 1982). Both dependent variables are updated annually to account for any change in laws.

Independent Variables. The primary independent variables of interest are the type and presence of SBCOs. For data on certification organizations, I consulted multiple sources. For a yearly compilation of all certification organizations in existence in the United States, I drew from the *National Organic Directory (NOD)*; 1983–1984, 1986–2001), published by the Community Alliance with Family Farmers. I also consulted three additional directories¹⁴ to capture all certification organizations that existed prior to their listing in the *NOD*. If directories did not list a founding date for the certification organization, calls were made to the organization to obtain it. If the organization had been dissolved, I contacted affiliated farmers or organizations to obtain both a founding date and a dissolution date for the particular organization. Based on these data-gathering techniques, I am confident that I captured all certification organizations that had existed during our observation period. To indicate the presence of a local nonprofit SBCO in any given state-year, I simply use a dichotomous variable (1 present, 0 absent).

Control Variables. To rule out alternative explanations for inertia and elaboration, I control for a host of variables that may influence these legal dynamics. First, I control for a number of agricultural-related measures such as the total number of farms in a state (logged) (*Number of farms*), the change in the number of farms (*Change # farms*), and the percentage of state GSP that is generated through agriculture (*Farm revenue/GSP*). I also control for the degree to which a state's agricultural production is concentrated in larger farms (*Farmland/farms*). For this measure, I divide the total

¹⁴ One published by the Organic Farming Research Foundation, another by the Agricultural Marketing Service of the USDA, and the third by ATTRA (Appropriate Technology Transfer for Rural Areas).

amount of agricultural farmland in a state by the total number of farms. These data come from the National Agricultural Statistics Service of the United States Department of Agriculture.

I also control for state SBCOs (*State SBCO*) because they spawned many amendments as they adapted legal and regulatory structure to better suit their needs. I also control for the number of organic wholesalers (*Wholesalers*) given that they had substantial interest in the governance arrangements of the industry and played a key brokerage function between farms and retail outlets in the marketing channels of organic food.¹⁵ Given that the broader public may influence law passage, I include a control for the percentage of liberal voters in a state (*Liberal voters*). This measure comes from Wright, Erikson, and McIver (1985) and is a time-invariant measure culled from 76,000 respondents to *CBS News–New York Times* polls at the state level between 1974 and 1982.

I also control for party strength at the state legislative level. Political scientists have shown that party strength can facilitate or impede the passage of particular kinds of laws (Brown 1995; Peterson 1995). Because the organic food movement was aligned with environmental and counterculture movements in the 1960s and 1970s, I control for the degree to which Democrats control state legislatures (*Percent democrat*). Because the percentage of senate seats occupied by Democrats is highly collinear with the percentage of house seats occupied by Democrats (.88), I include the

¹⁵ These data are from the *NOD* and *Foods Co-ops: An Alternative to Shopping in Supermarkets* (Ronco 1975), both of which list wholesalers that sell natural and organically grown or produced food. The *NOD* provides the most comprehensive listing of all wholesalers carrying organically produced food from 1983 to 1984 and from 1986 to 2000. *Foods Co-ops* was published in 1975. To develop a longitudinal variable from these two sources that would cover the length of our observation period, I first established that the two sources were similar. I compared the 1983 wholesaler data from the *NOD* with the 1974 *Food Co-ops* data. I found a .86 correlation between the two data sources. I then interpolated the *NOD* data and compared the interpolated 1974 *NOD* data with the 1974 *Food Co-ops* data and found a .75 correlation. Based on these correlations, I combined the *Food Co-ops* and the *NOD* data and linearly interpolated and extrapolated to generate values for the missing years of data.

percentage for the Senate. These data were collected from the Statistical Abstract of the United States.

I also include a measure of the cumulative number of laws passed (*# states w/law*) to control for broader institutional processes of mimicry and learning (Haveman 1993; Haunschild and Miner 1997; Strang and Soule 1998). Finally, in the analysis of legal variation, I include the number of amendments passed (*Amendments*). I also control for the proportion of states in each state's agricultural region that have passed an organic food law (*% regional states w/law*). To construct this variable, I rely on the USDA-designated farm regions. All variables in all analyses were lagged one year.

RESULTS

To evaluate hypothesis 1, that regulatory inertia occurs during the early period of industry law and regulatory elaboration occurs in a later period, I draw attention to Figures 2.1 and 2.2, which plot the number of laws and amendments passed over the time period of the study and show box plots of similarity scores for the years 1979 to 2000, respectively. Figure 2.1 reveals, consistent with predictions from institutional theory (if one simply considers a 1/0 adopt/not adopted dichotomy), a global trend of institutionalization within the industry with regard to state law. Looking at the entire United States, law passage followed a typical "s-curve" that characterizes most diffusion patterns. The same table shows the cumulative number of amendments passed over the same time period. As law passage slows down in the early 1990s, amendments, which were well below 10 in the first 20 years of the observation period, increase monotonically over the course of the last 10 years of the observation period. This pattern suggests that regulatory elaboration did indeed occur in the latter period of the study. Once a "basic" law was in place, states tended to amend their respective

laws in the later period of the study, elaborating and expanding institutional structure and control mechanisms.

With regard to regulatory inertia, Table 2.1 lists all states that passed a law without ever amending it. As demonstrated, only one (Massachusetts) of the first five states to pass an organic food law never amended it. In contrast to Grattet et al.’s (1998) prediction that regulatory inertia would occur early on in the period of law passage, 64 percent of exclusive law passage (as they defined it) occurs in the last third of the observation period; 93 percent of exclusive law passage occurs in the last half of the observation period.

TABLE 2.1: STATES PASSING A LAW AND NO SUBSEQUENT AMENDMENTS

State	Year
Massachusetts	1978
Nebraska	1986
South Dakota	1988
Wisconsin	1988
Ohio	1989
Rhode Island	1990
Vermont	1990
Virginia	1990
Indiana	1993
North Carolina	1993
Pennsylvania	1994
Georgia	2000
Michigan	2000
Missouri	2000

Mean=1991; s.d.=6.1 years

Employing the similarity index, Figure 2.2 provides an alternative perspective on inertia. Defining inertia as deviation from the yearly mean of similarity, a different pattern emerges.

Box plots are particularly useful for exploring questions of variation because they provide information about the median, the interquartile range (capturing the

middle 50% of the values), the extreme values within $3/2 \times \text{IQR}$, and outliers that lie 1.5 times beyond the IQR. As apparent in Figure 2.2, the IQR from 1979¹⁶ to 1987 is quite large, suggesting a fair amount of variation within those yearly averages of the similarity score. For instance, in 1979, Massachusetts and Connecticut had scores of .31 and .30, respectively, whereas Maine and California were much more similar to the Oregon 1973 law, with similarity scores of .62 and .56, respectively. The median score sinks dramatically in 1985 with laws in New Hampshire and Washington differing radically from the other existing laws at the time. Between 1987 and 1990, the median score again falls substantially. From 1990 on, the national mean similarity score varies little, with a high in 1992 of .265 to a low of .231 by 2000. While the IQR is getting smaller, the whiskers become elongated over time and outliers appear, suggesting that while the majority of states are converging within the IQR, there are others that are introducing variation in two ways. First, consistent with the mechanism of regulatory inertia, variation enters through the passage of a law that is similar to Oregon 1973 but is never amended (represented by the upper whiskers and outliers in Figure 2.2), despite ongoing change to the national mean similarity measure. Second, heterogeneity may enter through the passage of a law (represented by the lower whiskers and outlier in Figure 2.2) that diverges significantly from OR 1973 and from the yearly mean. It should also be noted that the majority of states that pass amendments fall within the IQR (59% are passed by states that fall within the IQR; 13% are passed by states below the 25th percentile; 29% are passed by states with similarity scores above the 75th percentile).

From these graphical analyses, I conclude that hypothesis 1 is partially supported. Regulatory inertia certainly exists in state-level organic food regulation, but it does not necessarily occur in the early period of the observation window as it did in

¹⁶ There is no box plot shown for 1978 because Massachusetts and Oregon were the only states that had any organic regulation to that point. In 1978, Massachusetts has a similarity score of .18.

the context of hate crime legislation. With regard to regulatory elaboration, there is evidence that individual states are expanding their laws in the later period of law passage, but the states passing amendments generally fall within the yearly IQR, suggesting that regulatory elaboration occurs for states but that regulatory elaboration does not necessarily result in greater legal variation.

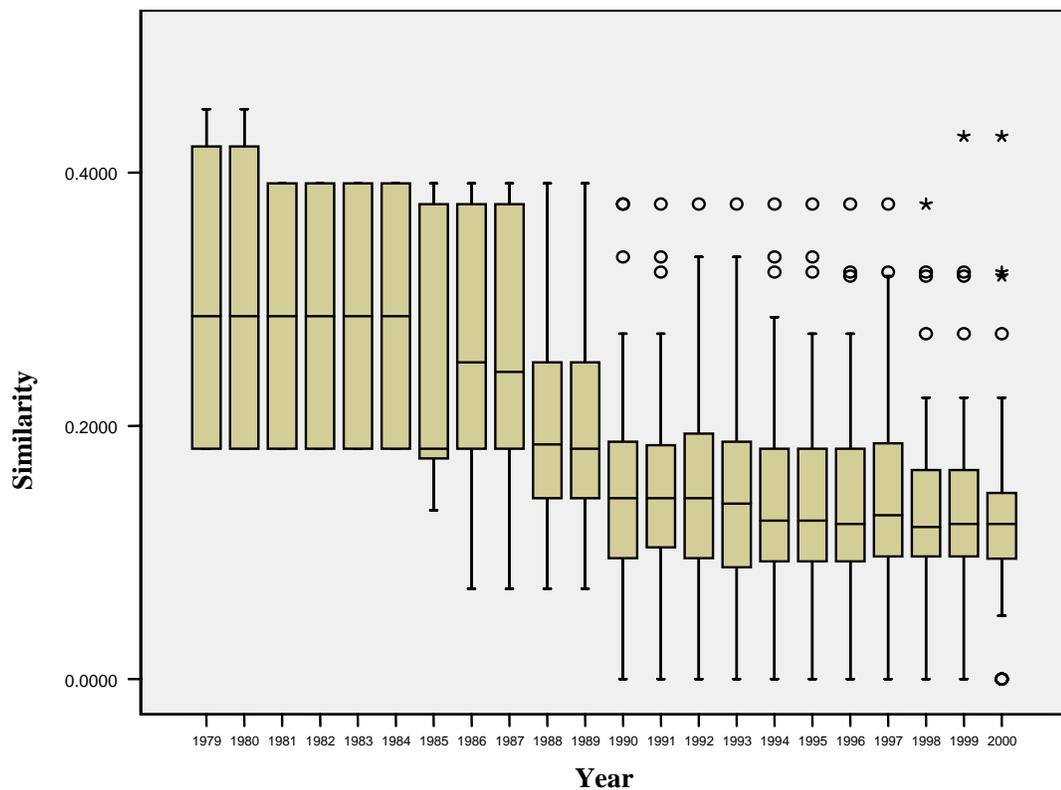


FIGURE 2.2: BOXPLOTS OF SIMILARITY SCORES, BY YEAR

I now turn to the remaining hypotheses that consider the impact of SBCOs on regulatory elaboration and regulatory inertia. Tables 2.2 and 2.3 report the descriptive statistics and correlations between the variables used in the analyses. Table 2.4 presents the results of the legal variation analysis. It should be reiterated here that the dependent variable is the absolute value of the similarity score of each state in year t less the mean similarity score for year t . In other words, a high value is equivalent to

deviation in either direction from the mean for that year. Model 1 contains the control variables. States with state SBCOs are less likely to deviate from yearly national mean similarity scores. This is also true of states with higher percentages of Democrats in the senate and greater numbers of wholesalers. As the number of organic food laws increase, individual states' laws are less likely to diverge from the mean similarity measure, suggesting general convergence. By contrast, states with larger farms (*Farmland/farms*) are more likely to have laws that deviate from the yearly mean. This holds true for states located in farm regions that have higher percentages of states that have passed laws previously.

Model 2 adds the SBCO variables. Consistent with hypothesis 2b, states with local nonprofit SBCOs are less likely to have laws that deviate from the national mean for year t , although this variable is marginally significant. However, hypothesis 3b is strongly supported, with OCIA, the federated SBCO, leading to increased variation from the national mean for year t . These findings support the contention that SBCO infrastructure significantly influences the dynamics of legal variation across time and space.

Table 2.5 presents the results from the analysis total amendments. Model 3 contains the control variables. In this analysis, state SBCOs and states with greater numbers of wholesalers are more likely to pass amendments. It should be noted that these two variables positively predict regulatory elaboration and negatively predict deviations from the national yearly mean of similarity. This suggests that in states where state SBCOs operate and where there are greater numbers of wholesalers, there will be greater regulatory elaboration and greater congruence with these states' laws and the national yearly similarity average. This makes sense given that the state uses its legislative and regulative machinery to operate its state SBCO. Wholesalers, as critical linking pins between SBCOs and consumer markets, encouraged greater

regulation as key brokers who sought to decrease information asymmetries regarding product quality and to decrease coordination costs across state boundaries through streamlining certification and regulation.

Model 4 includes the SBCO variables. Hypotheses 2a and 3a are both supported, with local nonprofit SBCOs being strong predictors of legal amendments and OCIA being a strong negative predictor of legal amendments.

DISCUSSION AND CONCLUSION

The purpose of this paper was to shed light on how legal dynamics within one industry context unfold over time and across polities. While recent work has made significant gains in understanding how and under what conditions political and institutional factors influence the passage (and repeal) of state laws, questions of legal variation and other important legal dynamics such as amendment processes have been largely neglected. Nonetheless, an “appreciation of heterogeneity and the relative *incoherence* of fields is crucial . . . for empirical explorations of institutional change” (Schneiberg and Clemens 2006:210).

TABLE 2.2: DESCRIPTIVE STATISTICS AND CORRELATIONS FOR REGULATORY INERTIA ANALYSIS

Variable	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Similarity	.10	.08													
2. State SBCO	.30	.46	-.23												
3. Percent Democrat	.55	.15	.02	.07											
4. Wholesalers	6.49	17.74	-.12	-.09	-.02										
5. Change # farms	14.22	1454.47	.01	.14	-.03	.07									
6. Farm revenue/GSP	.02	.03	-.08	-.19	-.28	-.07	-.17								
7. Farmland/farms	.66	.84	-.02	.03	-.25	-.07	-.01	.26							
8. Change in acres	-100.00	438.67	.03	.06	.12	-.10	.21	-.02	-.19						
9. Number of farms (ln)	10.01	1.41	-.01	-.03	-.08	.23	.07	.33	-.13	-.04					
10. # states w/law	27.68	8.77	-.09	.27	-.16	.02	.07	-.01	.11	-.02	.10				
11. % regional states w/law	.63	.19	-.11	.28	-.15	.16	.19	.09	.12	-.02	.10	.59			
12. Amendments	.13	.40	-.10	.26	-.02	.10	.11	-.07	.00	-.07	.04	.04	.16		
13. Local nonprofit SBCO	.46	.50	.18	-.40	.10	.24	-.02	-.37	-.45	.06	.03	-.20	-.24	.01	
14. OCIA	.33	.47	.02	-.30	-.22	.04	-.11	.46	.22	-.08	.40	.21	.08	-.12	-.06

TABLE 2.3: DESCRIPTIVE STATISTICS AND CORRELATIONS FOR REGULATORY ELABORATION ANALYSIS

Variable	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Amendments	.74	3.33													
2. State SBCO	.30	.46	.22												
3. Liberal voters	20.45	4.14	.02	-.11											
4. Percent Democrat	.55	.15	.05	.07	.31										
5. Wholesalers	6.90	17.93	.03	-.10	.26	-.02									
6. Change # farms	43.99	1448.54	.07	.13	-.07	-.03	.07								
7. Farm revenue/GSP	.02	.02	-.01	-.19	-.49	-.27	-.08	-.15							
8. Farmland/farms	.64	.80	.07	.05	-.14	-.25	-.07	.00	.27						
9. Change in acres	-98.85	443.35	-.05	.06	.01	.12	-.09	.23	-.01	-.20					
10. Number of farms (ln)	10.03	1.37	.02	-.03	-.30	-.10	.24	.08	.33	-.11	-.03				
11. # states w/law	27.55	9.20	.03	.29	-.23	-.17	.03	.04	.02	.12	-.01	.08			
12. % regional states w/law	.63	.19	.04	.26	-.20	-.16	.17	.19	.11	.13	-.02	.11	.61		
13. Local nonprofit SBCO	.49	.50	-.03	-.46	.39	.10	.23	-.04	-.36	-.45	.06	.04	-.27	-.25	
14. OCIA	.32	.47	-.06	-.28	-.18	-.22	.03	-.16	.51	.25	-.09	.38	.21	.06	-.11

TABLE 2.4: REGULATORY INERTIA ANALYSIS, BY STATE (GENERALIZED LEAST SQUARES FIXED EFFECTS REGRESSION MODELS)

Variable	Model 1	Model 2
State SBCO	-.025** (.008)	-.028** (.008)
Percent Democrat	-.091** (.031)	-.083** (.031)
Wholesalers	-.001** (.000)	-.001** (.000)
Change # farms	.000 (.000)	.000 (.000)
Farm revenue/GSP	.325 (.234)	.371 (.232)
Farmland/farms	.083** (.024)	.077** (.024)
Change in acres	.000 (.000)	.000 (.000)
Number of farms (ln)	.004 (.045)	.021 (.045)
# states w/law	-.002** (.000)	-.002** (.000)
% regional states w/law	.119** (.028)	.123** (.028)
Amendments	-.001 (.005)	.000 (.005)
Local nonprofit SBCO		-.013+ (.007)
OCIA		.020** (.007)
Constant	.038 (.465)	-.130 (.465)
Observations	419	419
Number of states	35	35
R-squared	.17	.19

Standard errors in brackets.

Note: *Liberal voters* variable dropped due to time invariance.

+ significant at 10%; * significant at 5%; ** significant at 1%

TABLE 2.5: REGULATORY ELABORATION ANALYSIS, COUNT OF AMENDMENTS, BY STATE (ZERO-INFLATED NEGATIVE BINOMIAL MODELS)

Variable	Model 3	Model 4
State SBCO	3.190** (.504)	4.576** (.831)
Liberal voters	.027 (.090)	.016 (.077)
Percent Democrat	1.401 (2.138)	1.481 (2.298)
Wholesalers	.025** (.009)	.022* (.009)
Change # farms	.000 (.000)	.000* (.000)
Farm revenue/GSP	18.43 (15.926)	58.883** (15.131)
Farmland/farms	-.119 (.226)	.696* (.286)
Change in acres	-.001** (.000)	-.001** (.000)
Number of farms (ln)	-.081 (.301)	-.037 (.300)
# states w/law	-.099* (.039)	-.026 (.044)
% regional states w/law	2.859 (2.393)	-.112 (1.935)
Local nonprofit SBCO		3.321** (.804)
OCIA		-1.662* (.695)
Constant	-2.246 (3.260)	-5.961+ (3.401)
Log pseudo likelihood	-237.654	-231.565
Wald test X^2	52.43	64.82
Degrees of freedom	11	13

Note: n=411. Robust standard errors in parentheses.

+ significant at 10%; * significant at 5%; ** significant at 1%

Moving beyond dichotomous conceptualizations of industry legal infrastructure by focusing on processes that generate variation in legal content and amendments to preexisting laws, I have sought to provide a broader conceptualization of regulatory evolution, opening theoretical and empirical opportunities to more fully understand institutional change. To do this, I have modified explanations of two key processes that work against homogenization of legal structure—regulatory inertia and regulatory elaboration (Grattet et al. 1998). In the context of the U.S. organic food industry, I found evidence of regulatory elaboration (amendments) occurring in the later period of law passage. However, states passing amendments were generally within the yearly inter-quartile range of the similarity index (see Figure 2.2), suggesting that while an individual state’s domain or jurisdiction over the organic industry expanded at the state level, such expansion did not necessarily translate into greater overall legal variation. In contrast, regulatory inertia contributed significantly to overall legal heterogeneity in the context of organic food law. However, in contrast to the findings of a study of U.S. hate crime legislation (Grattet et al. 1998), I found that regulatory inertia was not confined to the early period of the observation period. Rather, regulatory inertia—as measured as the passage of a single law with no subsequent amendments—occurred primarily in the later period of legal structuration in the organic food industry. I also found that inertia measured as deviation from a yearly similarity score occurred in two ways. First, some states passed laws and never amended them, even as the overall mean similarity index decreased over time (as illustrated in Figure 2.2 by the upper whiskers and outliers of the box plots). Second, other states passed laws that were even less similar than the overall mean similarity index was to the baseline Oregon 1973 law (the lower whiskers and outlier of the box plots shown in Figure 2.2). For example, a number of states, late in the observation period, passed laws that consisted of a single provision (i.e., Maryland, 1990; North

Carolina, 1993; Missouri, 2000). Thus, while regulatory inertia occurred in this context, it did not occur in the early period of the observation window as suggested by Grattet et al., nor was it confined to states that passed a single law and never amended it.

A second and more consequential modification of Grattet et al.'s (1998) study is that while the authors conclude that “the content of a state’s law is contingent upon *when* it enters the ongoing institutionalization process” (p. 303), I have shown that intra-industry governance organizations also significantly influence processes of regulatory inertia and elaboration. This approach, which focuses on the role of interests and preexisting industry-governance infrastructure in generating legal-content variation, has the potential to inform questions of *which* legal principles and configurations of provisions are produced and *which* come to dominate an industry (Edelman and Stryker 2005).

Focusing on local nonprofit SBCOs and the federated SBCO OCIA, I found that the presence of a local nonprofit SBCO in a state predicts significant regulatory elaboration in terms of amendments to existing legal structure, whereas the presence of an OCIA chapter negatively predicts amendments. In terms of regulatory inertia, states dominated by local nonprofit SBCOs are less likely to have idiosyncratic laws when compared to the national mean similarity measure for each year. In contrast, the presence OCIA significantly predicts the presence of idiosyncratic laws. These findings contribute to existing literature in a number of ways.

First, by examining the variation of content of laws, this study moves beyond extant conceptualizations of institutional change that tend to focus on a structurally deterministic, binary conceptualization of institutionalization to place emphasis on heterogeneity—an increasingly important element of institutional analysis, demonstrated by recent studies of institutional change and its effects (Schneiberg and

Bartley 2001; Sine, Haveman, and Tolbert 2005; Schneiberg and Clemens 2006). Focusing on the degree to which a particular state's laws deviate from mean similarity scores across all states provides clues into the impact of institutional processes versus political processes in dictating the content, scope, and efficacy of industry regulation (Edelman and Stryker 2005). Greater precision in measuring this type of heterogeneity in institutional structure, coupled with greater attention to the location and relative power of various stakeholders within a particular organizational field, can provide a solid foundation for moving beyond institutional theory's historical focus on the effects of institutions (Dacin, Goodstein, and Scott 2002) and toward a more robust examination of processes of institutional creation and transformation.

Second, disaggregating organizational forms into more distinct categories allows for a more nuanced understanding of the differential impact of seemingly similar forms on broader field-level institutions and relations. Recent work in social movement theory has transcended the dichotomy of viewing organizational structure as either suppressing mobilization capacity (i.e., Michels 1962; Piven and Cloward 1979; Rothschild and Whitt 1986) or facilitating it (McCarthy and Zald 1977) to examine more carefully how organizational attributes influence the ability to mobilize (see Clemens and Minkoff 2004; Edwards and McCarthy 2004:136–138). For example, Edwards and McCarthy note, “The choice of organizational form can have direct implications for the ability of an ongoing SMO to build the organizational capacity for certain types of collective action, such as grass-roots mobilization and litigation” (2004:137–138). Clemens and Minkoff echo that idea, “Rather than being homogenized as a ‘resource,’ particular organizations sustain distinctive cultures of interaction and shape trajectories of mobilization. The answer to ‘how shall we organize?’ (Clemens 1996) proves to be consequential for the development of actors as activists and the prospects for organized political action” (2004:157). They further

note that “distinctive styles of organizing also make activism attractive to different potential activists” (2004:157), suggesting that organizational form can influence who becomes members of one organization and not another.

While SBCOs are not social movement organizations, local nonprofit SBCOs exhibited tendencies similar to those of SMOs. As such, in this study, I attempted to differentiate the capacity of local nonprofit certification organizations from that of a federated SBCO. While future research must more fully explicate the differential impact of organizational capacity from underlying motivations and scope of focus regarding legislative outcomes, this study nonetheless show clear differences in institutional outcomes for different types of SBCOs. More research that appreciates the role of organizational variety or heterogeneity in generating differential institutional outcomes is needed to validate and corroborate the findings in this study.

APPENDIX A:
CODING SHEET FOR ORGANIC FOOD LAWS AND AMENDMENTS

<u>Provisions</u>
organic is defined
organic is defined as certified organic
certification is defined
Producer is defined
Producer must register with state
Processor must register with state
Handler must register with state
Producer is certified by state
Regulation of materials
<i>Approaches to regulation</i>
certifier has a Materials List for generic materials
certifier emphasizes avoiding prohibited practices/materials, not soil building or other 'positive' goals
<i>Materials for crop production</i>
Raw manure: required interval after use before crop can be harvested
Fungicide-treated seed is prohibited or regulated
Treated seed okay if organic is unavailable
Non-certified annual seedlings prohibited
Use of GEO/GMO materials prohibited
Use of GEO/GMO derivatives prohibited
Biosolids (sewage sludge) prohibited
Irradiation prohibited
Sprouts
Organic crop management
requires recordkeeping
designates the number of years records must be kept
state officials have access to a producer/processor's etc. records, land, warehouses, etc.
Organic plan required
plan submitted annually
on-site inspection at least annually
Crop rotation required for annual plants
time between pesticide and harvest
time between fertilizer and harvest
'Transitional organic' product labeling is permitted
Soil nutrient test is required for certification
Soil residue test is required for certification
the FDA or EPA % of minimum pesticide residues allowable
prohibits the commingling of organic and conventionally grown products
'Parallel production' is allowed, if additional record keeping/organizational requirements are met
Rotating fields in and out of organic production (even with full transition time) is prohibited
When irrigating, operator must practice water conservation
Certification program management
<i>General points</i>

Provisions
affidavits are mentioned as legitimate means of verification
Annual renewal of certification
Annual inspection of operation
state performs unannounced second inspection on all first-time applicants
state performs unannounced inspections on a random set of recertifying operators
state reserves the right to make unannounced inspections at any time
state will investigate reasonable reports of violations
certified operator can appeal decertification decision
<i>Unintentional contamination</i>
Buffer zone requirements (space separation, physical barriers, runoff diversion)
Operator must test irrigation water regularly for contamination by organically prohibited materials
Regular residue tests required for soil
Regular residue tests required for crops
Allowable residue level for residues in produce
Crop with residues over allowed limit can never be labeled 'certified organic', regardless of reason
Consequences of drift of prohibited materials on to certified crops or land, when drift is not due to fault of certified operator
Crop cannot be labeled 'organic', regardless of amount of drift
Affected land is automatically decertified, regardless of the amount of drift
<i>Enforcement procedures</i>
Organic plan emphasized as enforcement tool
Audit trail emphasized as enforcement tool (not just for animals)
Medical records for individual animals (or flocks, for fowl) must be traceable through life cycle
Animals must be individually identified on body by physical marker or tag (except fowl)
Record keeping system must be adequate to ensure products of treated animals are not labeled organic
Animals treated with prohibited materials must be identified on body of animal (with tag, etc.) to ensure no confusion (except fowl)
Organic Processing
Processors must keep records/time
Audit Trail
<i>Product guidelines by labeling category</i>
'Organic' on principal display panel (PDP) requires 95±100% organic ingredients
Requires a different percentage
'Made with organic' (MWO) on PDP requires 50±95% organic ingredients
Requires 70±95% organic ingredients
Products with some organic ingredients, but not enough to make the 'MWO' cutoff, can say 'contains organic [ingredients]' on information panel
Organic ingredients cannot be identified if entire product does not meet criteria for 'organic' label
certification of processing is required for 'organic [product]' and 'MWO [ingredients]' label claims
certification of processing is required even if labeling only identifies organic ingredients on side panel
<i>Product composition</i>
For 'organic' and 'MWO' products:
Non-agricultural ingredients should be minimized
certifier encourages using 100% organic ingredients, or requires preferential use of organic ingredients
Genetically engineered ingredients are prohibited
Irradiated ingredients are prohibited

<u>Provisions</u>
Nutritional quality should be preserved in processing
This is emphasized in processing section, not just in principles of organic production
certifier allows an expanded set of non-agricultural ingredients in 'MWO' products
certifier allows any ingredient to be used in 'COI' products that are certified organically processed
Processors making only 'COI' products are exempted from some non-composition requirements
<i>Facility management</i>
Organic plan is required
'Parallel production' is allowed, if additional record keeping/organizational requirements are met
Procedures to ensure organic integrity
HACCP or similar system involving critical control points
ISO 9000 series certification
Extra withdrawal time required after fumigation with a prohibited material
Regular or required residue testing of products
certifier can test for residues if reason for suspicion
'Ecologically sound' waste management plan
Producer must minimize packaging
<i>Handling regulations (and defined)</i>
Must be licensed with state
retailer not considered a handler
Retailer must keep records =2 if handler, =1 if retailer
year records must be kept by retailers
Requires retailers to maintain audit trail
certifier has detailed description of requirements for non-processor handlers
Handlers dealing in only MWO or COI products are subject to less restrictive standards
Handlers are subject to less restrictive standards or a less thorough certification and inspection process, if organic sales are below a specified level
With each transaction in supply chain, both buyer and seller (if certified) must record transaction, date, and volume exchanged
All processors and handlers must maintain audit trail sufficient to track raw materials from supplier to retail
On-farm processors must meet all processing standards
<i>Organic labeling guidelines</i>
<i>Processed and unprocessed products labeled 'organic'</i>
Label is required to be sold as organic
When two products come from two different cert orgs., must have both names on label
mandates the creation of a state organic label (e.g. Montana Certified Organic)
if the product is labeled as organic, it meets the state code
certifier must pre-approve entire label
Label on retail item must identify certifier of the final handler or distributor of product
certifier contact information is required on retail item
In multi-ingredient products, listing same ingredient from organic and non-organic sources is prohibited
In multi-ingredient products, listing an ingredient as 'organic when available' is prohibited
if less than all of the ingredients are not organic, then not organic
<i>All products labeled 'organic'</i>
"organic when available" label not acceptable
Producers name/address on the label
'Transitional' product labeling

<u>Provisions</u>
Transitional product certifiable
Transitional product can use same logo as certified organic
Label, seal, or statement contains the word `organic'
Labeling through distribution chain:
`Organic' required on invoice
`Organic' required on non-retail container (box, bin, case, pallet)
certifier ID required on invoice
certifier ID required on non-retail container (box, bin, case, pallet)
provides other cert. , in addition to `organic' or `transitional'
Seal is a registered trademark
<i>Statements on packaged multi-ingredient foods</i>
<u>For products labeled `organic' on PDP:</u>
certifier name may appear on PDP
certifier logo may appear on PDP
certifier name may appear on label
certifier logo may appear on label
`Organic' must be smaller than product ID
Individual id. of organic ingredients on info panel
Statement of percent organic ingredients
<i>Organizational structure</i>
Program is self-sufficient in funding
<u>State programs: program has advisory board</u>
the dept of ag. is an organic certifier
dept of ag contracts out cert. to a private entity
dept. of ag sets certification procedures/organic regulations
certifier is licensed, authorized, or approved in some way by state(s) in which it operates
Advisory board is mandated by statute
number of people on board
board producer
board processor
board handler
board environmentalist
board technical
board state ag/extension
Consumer rep
retailer
misc. board
Board has input in standards decisions
Board has final decisions for standards
Board has input in de/certification decisions
Board has final decision for de/certification
designates the composition of that board
creates a fund especially for organic
creates avenue for complaints to be heard
<i>Interactions with other certifiers and national bodies</i>

<u>Provisions</u>
Standards state intent to create reciprocity agreements
STATE POWERS
provision outlining mislabeling as unlawful
Unlawful to certify in violation of statute
Unlawful to produce, handle, or process organic food unless registered with state
Unlawful to make a false statement
Unlawful to forge, falsify, fail to obtain, retain, disclose records
unlawful to advertise label, or represent that fertilizer or pesticide may be used when it is a prohibited substance
Unlawful to commingle
whether or not the law stipulates a fine for any unlawful activity
amount of fine specified
type of fine specified
unintentional fine
the use of an injunction
revoke the certification status of a producer
revoke the certification status of a processor
allows the state to revoke the license of a handler
revoke registration of a cert. organization
issue stop sale order
issue a cease and desist order
bans a certifier to certify his/her own farm
Relation between state and cert. orgs.
certification organizations must register with the state
Conflict of interest provision
certification represents compliance with the law
out of state certification must meet WA standards
Annual fee
specifies qualities of a cert org (expertise, no. of personnel, etc.)
specifies provisions for certification organizations.

REFERENCES

- Akerlof, George A. 1970. "The Market for 'Lemons': Quality Uncertainty and the Market Mechanism." *The Quarterly Journal of Economics* 84(3):488–500.
- Baum, Joel A. C. and Christine Oliver. 1992. "Institutional Embeddedness and the Dynamics of Organizational Populations." *American Sociological Review* 57(4):540–540.
- Best, Joel. 1990. *Threatened Children: Rhetoric and Concern about Child Victims*. Chicago, IL: University of Chicago Press.
- Brammer, Bill. 1989. "CCOF Moves to Center Stage: President's Report." *California Certified Organic Farmers Statewide Newsletter* 6(2):13, 25.
- Breyer, Stephen. 1982. *Regulation and its Reform*. Cambridge, MA: Harvard University Press.
- Brown, Robert. 1995. "Party Cleavages and Welfare Effort in the American States." *American Political Science Review* 89:23–33.
- Brunsson, Nils and Bengt Jacobsson. 2000. "The Contemporary Expansion of Standardization." Pp. 1–20 in *A World of Standards*, edited by N. Brunsson and B. Jacobsson. Oxford: Oxford University Press.
- California. 1979. "Statutes of 1979." Chapter 914.
- California Action Network. 1989. "1989 Organic Wholesalers Directory and Yearbook: Organic Food and Farm Supplies."
- Campbell, John L. and Leon N. Lindberg. 1990. "Property Rights and the Organization of Economic Activity by the State." *American Sociological Review* 55(5):634–634.
- Campbell, John L., J. Rogers Hollingsworth, and Leon N. Lindberg. 1991. *Governance of the American Economy*. New York: Cambridge University Press.
- Carroll, Glenn A., Jerry Goodstein, and Antal Gyenes. 1988. "Organizations and the State: Effects of the Institutional Environment on Agricultural Cooperatives in Hungary." *Administrative Science Quarterly* 33(2):233.

Carruthers, B. G., S. L. Babb, and T. C. Halliday. 2001. "Institutionalizing Markets, Or the Market for Institutions? Central Banks, Bankruptcy Law and the Globalization of Financial Markets." Pp. 94–126 in *The Rise of Neoliberalism and Institutional Analysis*, edited by J. L. Campbell, and O. Pedersen. Princeton: Princeton University Press.

Clemens, E. S., and D. C. Minkoff. 2004. "Beyond the Iron Law: Rethinking the Place of Organizations in Social Movement Research." Pp. 155–170 in *The Blackwell Companion to Social Movements*, edited by D. A. Snow, S. A. Soule, and H. Kriesi. Malden, MA: Blackwell.

Colorado. 1989. "Colorado Revised Statutes." Title 35.

Dacin, M. Tina, Jerry Goodstein, and W. Richard Scott. 2002. "Institutional Theory and Institutional Change: Introduction to the Special Research Forum." *Academy of Management Journal* 45(1):45–56.

Dice, Lee R. 1945. "Measures of the Amount of Ecologic Association between Species." *Ecology* 26(3):297–302.

Dobbin, Frank. 1994. *Forging Industrial Policy: The United States, Britain, and France in the Railway Age*. Cambridge: Cambridge University Press.

Dobbin, Frank and Timothy J. Dowd. 1997. "How Policy Shapes Competition: Early Railroad Foundings in Massachusetts." *Administrative Science Quarterly* 42(3):501–529.

Duarte, Jair M., Joao B. Santos, and Leonardo Melo C. 1999. "Comparison of Similarity Coefficients Based on RAPD Markers in the Common Bean." *Genetics and Molecular Biology* 22(3):427–432.

Edelman, Lauren B. 1990. "Legal Environments and Organizational Governance: The Expansion of due Process in the American Workplace." *American Journal of Sociology* 95(6):1401.

———. 1992. "Legal Ambiguity and Symbolic Structures: Organizational Mediation of Civil Rights Law." *American Journal of Sociology* 97(6):1531–1576.

Edelman, L. B. and R. Stryker. 2005. "A Sociological Approach to Law and the Economy." Pp. 527–551 in *The Handbook of Economic Sociology*, edited by N. J. Smelser, and R. Swedberg. Princeton: Princeton University Press.

Edelman, Lauren B., Christopher Uggen, and Howard S. Erlanger. 1999. "The Endogeneity of Legal Regulation: Grievance Procedures as Rational Myth." *American Journal of Sociology* 105(2):406.

- Edwards, B. and J. D. McCarthy. 2004. "Resources and Social Movement Mobilization." Pp. 116–152 in *The Blackwell Companion to Social Movements*, edited by D. A. Snow, S. A. Soule, and H. Kriesi. Malden, MA: Blackwell.
- Fishman, Stuart. 1989. "Letters to the Editor." *California Certified Organic Farmers Statewide Newsletter* 6(2):26.
- Fligstein, Neil. 2001. *The Architecture of Markets: An Economic Sociology of Twenty-First Century Capitalist Societies*. Princeton: Princeton University Press.
- Fligstein, Neil. 1990. *The Transformation of Corporate Control*. Cambridge, MA: Harvard University Press.
- Fligstein, Neil and Alec Stone Sweet. 2002. "Constructing Politics and Markets: An Institutional Account of European Integration." *American Journal of Sociology* 107(5):1206.
- Granovetter, Mark. 2005. "Business Groups and Social Organization." Pp. 429–450 in *The Handbook of Economic Sociology*, edited by N. J. Smelser, and R. Swedberg. Princeton: Princeton University Press.
- Grattet, Ryken, Valerie Jenness, and Theodore R. Curry. 1998. "The Homogenization and Differentiation of Hate Crime Law in the United States, 1978 to 1995: Innovation and Diffusion in the Criminalization of Bigotry." *American Sociological Review* 63(2):286.
- Halliday, Terence C., Michael J. Powell, and Mark W. Granfors. 1993. "After Minimalism: Transformations of State Bar Associations from Market Dependence to State Reliance, 1918 to 1950." *American Sociological Review* 58(4):515–535.
- Hannan, Michael T. and John H. Freeman. 1989. *Organizational Ecology*. Cambridge: Harvard University Press.
- Haunschild, Pamela R. and Anne S. Miner. 1997. "Modes of Interorganizational Imitation: The Effects of Outcome Salience and Uncertainty." *Administrative Science Quarterly* 42(3):472–500.
- Haveman, Heather A. 1993. "Follow the Leader: Mimetic Isomorphism and Entry into New Markets." *Administrative Science Quarterly* 38(4):593–627.
- Hirst, Paul and Grahame Thompson. 1996. *Globalization in Question*. Cambridge: Polity Press.

- Ingram, Paul and Karen Clay. 2000. "The Choice-within-Constraints New Institutionalism and Implications for Sociology." *Annual Review of Sociology* 26(1):525.
- Ingram, Paul and Hayagreeva Rao. 2004. "Store Wars: The Enactment and Repeal of Anti-Chain-Store Legislation in America." *American Journal of Sociology* 110(2):446–487.
- Ingram, Paul and Tal Simons. 2000. "State Formation, Ideological Competition, and the Ecology of Israeli Workers' Cooperatives." *Administrative Science Quarterly* 45(1):25–53.
- Interview. Conducted January 17, 2002.
- Interview. Conducted July 23, 2004.
- Jennings, P. Devereaux, Martin Schulz, David Patient, Caroline Gravel, and Ke Yuan. 2005. "Weber and Legal Rule Evolution: The Closing of the Iron Cage?" *Organization Studies* 26(4):621–653.
- Kelly, Erin L. 2003. "The Strange History of Employer-Sponsored Child Care: Interested Actors, Uncertainty, and the Transformation of Law in Organizational Fields." *American Journal of Sociology* 109(3):606–649.
- Kersbergen, Kees Van and Frans Van Waarden. 2004. "'Governance' as a Bridge between Disciplines: Cross-Disciplinary Inspiration regarding Shifts in Governance and Problems of Governability, Accountability and Legitimacy." *European Journal of Political Research* 43(2):143–171.
- Lounsbury, M. and M.J. Ventresca. 2002. "Social Structure and Organizations Revisited." Pp. 3–36 in *Research in the Sociology of Organizations*, edited by M. Lounsbury and M. J. Ventresca. Oxford: JAI Press.
- Markusen, Ann. 1985. *Profit Cycles, Oligopoly, and Regional Development*. Cambridge, MA: Massachusetts Institute of Technology Press.
- . 1987. *Regions: The Economics and Politics of Territory*. Totowa, NJ: Rowman and Littlefield.
- McCarthy, John D. and Mayer N. Zald. 1977. "Resource Mobilization and Social Movements: A Partial Theory." *American Journal of Sociology* 82(6):1212–1241.
- Meyer, J. W. and W. R. Scott 1983. "Centralization and the Legitimacy Problems of Local Government." Pp. 199–215 in *Organizational Environments: Ritual and Rationality*, edited by J. W. Meyer and W. R. Scott. Beverly Hills, CA: Sage.

- Mezias, Stephen J. 1990. "An Institutional Model of Organizational Practice: Financial Reporting at the Fortune 200." *Administrative Science Quarterly* 35(3):431–457.
- Michels, Robert. 1962. *Political Parties; a Sociological Study of the Oligarchical Tendencies of Modern Democracy*. New York: Collier Books.
- Neuendorf, Kimberly A. 2002. *The Content Analysis Guidebook*. Thousand Oaks, CA: Sage Publications.
- Oregon. 1980. "Oregon Revised Statutes." Title 616.
- Peterson, Paul E. 1995. *The Price of Federalism*. Washington, DC: Brookings Institution.
- Pierre, Jon, and B. G. Peters. 2000. *Governance, Politics, and the State*. New York: St Martin's Press.
- Piven, Frances Fox and Richard A. Cloward. 1979. *Poor People's Movements: Why They Succeed, How They Fail*. New York: Vintage Books.
- Potter, W. James, and Deborah Levine-Donnerstein. 1999. "Rethinking Validity and Reliability in Content Analysis." *Journal of Applied Communication Research* 27(3):258.
- Ranger-Moore, James, Jane Banaszak-Holl, and Michael T. Hannan. 1991. "Density-Dependent Dynamics in Regulated Industries: Founding Rates of Banks and Life Insurance Companies." *Administrative Science Quarterly* 36(1):36–65.
- Ronco, William. 1975. *Food Co-Ops*. Boston, MA: Beacon Press.
- Rothschild, Joyce and J. Allen Whitt. 1986. *The Cooperative Workplace: Potentials and Dilemmas of Organizational Democracy and Participation*. Cambridge, Cambridgeshire; New York: Cambridge University Press.
- Sassen, Saskia. 1998. *Globalization and its Discontents*. New York: New Press.
- Saxenian, Annalee. 1994. *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*. Cambridge, MA: Harvard University Press.
- Schneiberg, M. 2002. "Organizational Heterogeneity and the Production of New Forms: Politics, Social Movements and Mutual Companies in American Fire Insurance, 1900–1930." Pp. 39–89 in *Research in the Sociology of Organizations*, edited by M. Lounsbury and M. J. Ventresca. New York: JAI Press.

- Schneiberg, Marc and Tim Bartley. 2001. "Regulating American Industries: Markets, Politics, and the Institutional Determinants of Fire Insurance Regulation." 107(1):101.
- Schneiberg, Marc and Elisabeth S. Clemens. 2006. "The Typical Tools for the Job: Research Strategies in Institutional Analysis." *Sociological Theory* 24(3):195–227.
- Schneiberg, M. and S. A. Soule. 2005. "Institutionalization as a Contested, Multi-Level Process: Politics, Social Movements and Rate Regulation in American Fire Insurance." Pp. 122–160 in *Social Movements and Organizations*, edited by G. F. Davis, D. McAdam, W. R. Scott, and M. N. Zald. Cambridge: Cambridge University Press.
- Scott, W. Richard, Martin Ruef, Peter J. Mendel, and Carol A. Caronna. 2000. *Institutional Change and Healthcare Organizations: From Professional Dominance to Managed Care*. Chicago: University of Chicago Press.
- Sills, Ed. 1989. "Long Range Planning Committee Report." *California Certified Organic Farmers Statewide Newsletter* 6 (2):11, 16.
- Sine, Wesley D., Heather A. Haveman, and Pamela S. Tolbert. 2005. "Risky Business? Entrepreneurship in the New Independent-Power Sector." *Administrative Science Quarterly* 50(2):200–232.
- Soule, Sarah A. and Yvonne Zylan. 1997. "Runaway Train? The Diffusion of State-Level Reform in ADC/AFDC Eligibility Requirements, 1950–1967." *American Journal of Sociology* 103 (3):733–762.
- Stoker, Gerry. 1998. "Governance as Theory: Five Propositions." *International Social Science Journal* 50(155):17–28.
- Strang, D. and E. M. Bradburn. 2001. "Theorizing Legitimacy or Legitimizing Theory? Neoliberal Discourse and HMO Policy." Pp. 129–158 in *The Rise of Neoliberalism and Institutional Analysis*, edited by J. L. Campbell, and O. Pedersen. Princeton: Princeton University Press.
- Strang, D., and W. D. Sine. 2002. "Interorganizational Institutions." Pp. 497–519 in *Companion to Organizations*, edited by J. A. C. Baum. Malden, MA: Blackwell.
- Strang, David and Sarah A. Soule. 1998. "Diffusion in Organizations and Social Movements: From Hybrid Corn to Poison Pills." *Annual Review of Sociology* 24(1):265.

Streeck, W. and P. C. Schmitter. 1985. "Community, Market, State and Associations? The Prospective Contribution of Interest Governance to Social Order." Pp. 1–29 in *Private Interest Government: Beyond Market and State*, edited by W. Streeck and P. C. Schmitter. Beverly Hills, CA: Sage.

Stryker, Robin. 2003. "Mind the Gap: Law, Institutional Analysis and Socio-Economics." *Socio-Economic Review* 1:335–367.

Sutton, John R., Frank Dobbin, John W. Meyer, and W. Richard Scott. 1994. "The Legalization of the Workplace." *American Journal of Sociology* 99(4):944–971.

Tolbert, Pamela S. and Lynne G. Zucker. 1983. "Institutional Sources of Change in the Formal Structure of Organizations: The Diffusion of Civil Service Reform, 1880–1935." *Administrative Science Quarterly* 28(1):22.

Wade, James B., Anand Swaminathan, and Michael Scott Saxon. 1998. "Normative and Resource Flow Consequences of Local Regulations in the American Brewing Industry, 1845–1918." *Administrative Science Quarterly* 43(4):905.

White, Halbert. 1982. "Maximum Likelihood Estimation of Misspecified Models." *Econometrica* 50(1):1–26.

Wright, Gerald C., Robert S. Erikson, and John P. McIver. 1985. "Measuring State Partnership and Ideology with Survey Data." *Journal of Politics* 47(2):469.

Yeager, Peter C. 1990. *The Limits of Law: The Public Regulation of Private Pollution*. Cambridge: Cambridge University Press.

Zhou, Xueguang. 1993. "Occupational Power, State Capacities, and the Diffusion of Licensing in the American States: 1890 to 1950." *American Sociological Review* 58(4):536–552.

PAPER 3:
CERTIFYING THE HARVEST:
THE ROLE OF STANDARDS-BASED CERTIFICATION ORGANIZATIONS IN
THE ORGANIC FOOD INDUSTRY

INTRODUCTION

Traditional economic explanations conceptualize the origins of markets as unproblematic and as a given. Arrow (1974), for example, states, “Although we are not usually explicit about it, we really postulate that when a market could be created, it would be” (quoted in Sarasvathy and Dew 2005:533–534). Williamson (1985) similarly reflects an uncritical attitude toward the origins of markets by stating, “In the beginning, there were markets” (p. 87). More recent work in historical economics suggests that “institutions organically emerge in the initial stages of market development as unintended and unforeseeable results from the pursuit of individual interests” (Greif 2005:728). The underlying assumptions of these quotes are that markets emerge through atomized market behavior, that entrepreneurs engage in optimal decision making, and that consumers have well-defined preferences. Economic sociologists, organization theorists, and strategists have challenged these assumptions, emphasizing the collective, political, and often unintended nature of processes associated with new market emergence. A growing number of scholars acknowledge the significant amount of “institutional work” needed to lessen uncertainty and ambiguity to an acceptable level before a market can be established and grow (Zucker 1986; Fligstein 1996; Garud, Jain, and Kumaraswamy 2002; Stinchcombe 2002; Rao 2004).

Recent work in organization theory underscores the importance of institutional entrepreneurs in the creation of new institutions and industries. To date, research in this vein has focused on delineating the processes and strategies by which institutional entrepreneurs are able to embed new “beliefs, norms and values into social structures”

and precipitate institutional change (Rao, Morrill, and Zald 2000:240). Much of this research is grounded in social movement theory (See McAdam, McCarthy, and Zald 1996), focusing on key processes including the identification of political opportunities, appropriate framing and theorization of problems and solutions, and mobilization of key constituencies. Studies of institutional entrepreneurship highlight the skill of institutional entrepreneurs in forging new institutions in the face of existing ones (Fligstein 1997). For example, activities such as “demonstration events” sponsored by supporters of new technologies allow potential consumers to gain firsthand experience with radically new technologies to assess their utility, reliability, and validity.¹

A central, yet understudied means by which institutional entrepreneurs mitigate concerns over legitimacy and uncertainty is through the creation and promulgation of standards (Garud et al. 2002). In the absence of support from key institutional actors (the state and the professions) that are often initially reluctant to endorse new/marginal economic practices and innovations that deviate too far from taken-for-granted ways of consumption and product use (Leblebici, Salancik, Copay, and King 1991), standards-based certification organizations² (referred to hereafter as SBCOs) are often organized by interested actors who create and promulgate standards in an effort to supply market order. Like institutions that “make new labels, and the labels make new kinds of people” (Douglas 1986:108), standards and the organizations that promote them can wield tremendous classificatory power by providing “ontological closure” around a particular product definition (Pinch and Bijker 1987) and by allocating material and social resources to people and organizations based on criteria embodied in standards. Through the use of

¹ Examples include the telephone (Fischer 1992), the bicycle (Smith 1973), and the automobile (Rao 1994; 2004).

² By standards-based certification organizations, I refer to organizations whose primary purpose is to create and/or promote standards, verify the compliance of other organizations with those standards, and formally acknowledge that an organization has met the standards through the conferral of a certification, endorsement, or accreditation.

measurement, recording, and ranking processes, new social entities are brought into existence (Espeland and Stevens 1998).

Given the potential for standards to channel behavior, some scholars suggest they be placed on equal footing with markets and hierarchies because of their ability to facilitate contact, coordination, and anonymous market exchange (Brunsson 2000). Yet, standardization has been largely neglected by the social sciences when compared with other sources of order such as the state, markets and organization (Brunsson and Jacobsson 2000).

In this paper, I respond to this call by examining how SBCOs structure and provide order in nascent market settings. Specifically, I seek to answer the following questions: How do SBCOs provide market order? How do the activities of SBCOs influence market entry and exit rates? While a significant body of literature has accumulated on the role of standards in technology fields,³ we know relatively little about the dynamics of standards in new nontechnological product markets in which the standards themselves are central to the value of the product they are purported to describe and evaluate (Espeland and Stevens 1998:338). In other words, these types of standards serve to differentiate otherwise identical products in a market. While there is no visible difference in the products or services provided, there are clear differences in the processes and inputs used in producing the good. For example, fair-trade coffee looks and tastes no different from conventional coffee. However, there is a price premium for fair-trade coffee because its value is derived from a set of standards that

³ Scholarly work on the role of technology standards has shown that common technological standards facilitate compatibility and interoperability between products or networks of products. These shared standards must emerge before firms can evaluate products and exchange in the marketplace (Garud et al. 2002). Significant work in economics and strategy has demonstrated how the creation of technological standards generates network externalities (Katz and Shapiro 1985; Farrell and Saloner 1986). Technology standards can also lead to path dependence, irreversibility, and lock-in (David 1985; Arthur 1989). “Dominant design” is a closely related concept because it provides firms with the possibility of enjoying monopolistic control of the market (Utterback and Abernathy 1975; Tushman and Anderson 1986). For a recent review of this literature, see Quelin, Abdessemed, and Durand 2001.

requires importers to meet international criteria, pay a minimum price per pound for coffee, and provide credit and technical support to farmers.

The U.S. organic food industry provides an ideal context to explore these research questions because, as is the case in a number of other product markets, the value of the product is derived from processes and inputs of the production rather than solely from the product itself.⁴ In recent years, organic agriculture has grown into a 26-billion-dollar industry, making it the fastest growing sector in both U.S. and global agricultural markets. Although organic production accounts for less than .2 percent of U.S. agricultural output, it has posted a 21 percent yearly growth rate since 1997, and organic cropland has doubled over the same period.

Despite such robust growth and the recent passage of federal regulations governing the industry, organic agriculture was marginalized for much of its history. In the early years, both market mechanisms and extant institutional structures failed to provide organic farmers with the stability and support necessary to grow beyond local and specialized niche markets. Because organic agricultural production uses no chemical fertilizer or pesticides and generally results in smaller yields and higher labor costs than conventional agriculture, organic production was seen by the majority of the American farming establishment and policymakers as unscientific and inefficient—a regression to agriculture of the 1930s. The logic of sustainability and ecology underlying organic food production was inconsistent with prevailing logics in conventional agriculture that centered on technology and efficiency. Being excluded from existing channels of access and having little assistance from agricultural market mechanisms, movement insiders mobilized resources to create and advocate a viable set of standards that differentiated organic production techniques and products from those of mainstream agriculture. Consequently, organic farmers, through the

⁴ Sustainable lumber and paper, green energy, “cruelty free” personal care products, bird-friendly coffee, and other fair-trade commodities all derive their value in this way.

development of standards, certification, and labeling processes, sowed the seeds for a movement/market that has quietly grown up in the shadow of conventional agribusiness and now dominates the sector in terms of growth.

In the following section, I theoretically explore how standards and SBCOs structure markets and firm behavior, motivating my hypotheses concerning the relationship of SBCOs and their activities to market entry and exit. I then provide a brief historical narrative of the U.S. organic food industry, highlighting the important role of SBCOs in its success. Following this narrative, I present the analyses, results, and conclusion.

THEORY AND HYPOTHESES

Institutional entrepreneurs are organized actors that have an interest in particular institutional arrangements and who skillfully leverage resources (cultural, social, and material) to create new institutions or transform existing ones (DiMaggio 1988; Fligstein 1997; Rao et al. 2000; Maguire, Hardy, and Lawrence 2004). Garud et al. (2002) outline key actions taken by institutional entrepreneurs:

Institutional entrepreneurs create a whole new system of meaning that ties the functioning of disparate sets of institutions together . . . They define, legitimize, combat or co-opt rivals to succeed in their institutional projects . . . Assuming the role of champions, they energize efforts toward collective action and devise strategies for establishing stable sequences of interaction with other organizations to create entirely new industries and associated institutions. (pp. 196–197)

Garud and colleagues point out that “the presence or absence of common standards impacts innovation within a technological field” (2002:198), implying that organizations that create and advocate standards in a particular field will likely influence the behavior of other organizations within that field. SBCOs can also accredit those same organizations, providing them with a possible buffer from

environmental selection pressures (Wiley and Zald 1968; Durand and McGuire 2005). A number of studies have considered how standards and/or certification processes influence well-established fields such as health care (Ruef and Scott 1998; Scott, Ruef, Mendel, and Caronna 2000), education (Wiley and Zald 1968; Zajac and Kraatz 1993; Casile and Davis-Blake 2002; Durand and McGuire 2005), nonprofits (Litwack and Hylton 1962; Singh, House, and Tucker 1986), and college sports (Stern 1981). Yet few studies have focused on how SBCOs influence firm entry and exit in nascent markets.

I propose that SBCOs fulfill four roles critical to new market niche creation and growth. First, SBCOs create standards. Although SBCOs create standards for a variety of reasons (Brunsson 2000), I focus in this paper on the intentional use of standards to differentiate one product from another, with the explicit intent to create a market for that product. Second, SBCOs serve as advocates or evangelists (Stinchcombe 2001) of their standards, seeking to gain adherents. Third, once a firm has adopted standards, SBCOs exert normative control over it through verification processes to guarantee that standards are followed. Fourth, SBCOs provide an endorsement or certification to those organizations found in compliance with the standards promulgated.

SBCOs and Standards Creation

Sociologists have long been interested in the concept of market order. Durkheim explored the noncontractual aspects of contracts, and Weber examined the centrality of institutions and reputation in economic transactions. Contemporary sociologists have continued to examine the source and outcomes of market order in a vast array of settings.⁵ For example, scholars approaching industry and technology creation from a cultural/cognitive perspective (e.g., Pinch and Bijker 1987; Garud and

⁵ See Biggart and Beamish 2003 for a thorough review.

Rappa 1994; Porac, Ventresca, and Mishina 2002) begin with the premise that new products and services are not necessarily easily understood or commensurable. As such, “product ontologies” serve as cognitive understandings that concatenate product attributes, usage conditions, and buyer characteristics into a coherent bundle that clearly defines a product or service. This then allows the product or service to be exchanged in market transactions (Porac et al. 2002).

Scholars from the Conventions School (Favereau 2002) provide a related, yet distinct, explanation of the origins of market ordering mechanisms. Sidestepping the market versus hierarchies question, Conventions School scholars focus on how individuals achieve economic coordination “via obedience to rules, norms, and intersubjectively mediated action of various forms” (Biggart and Beamish 2003:456). As such, economic coordination results from the interpretive and pragmatic actions of market actors to collectively determine with others how to handle uncertainty in particular situations. Bundles of conventions then become solutions to thorny market problems and these conventions have the propensity to congeal and become reified—similar to institutions (Biggart and Beamish 2003). Solving these types of coordination problems is antecedent to the emergence and growth of new markets, technological regimes, products, and organizational forms (Leblebici et al. 1991; Garud and Rappa 1994; Garud et al. 2002; Schneiberg 2002).

Formal standards can embody product ontologies and generate conventions that provide the needed structure, coherence, and meaning to products, actors, and actions in new market arenas. By formal, I mean “the development of an abstraction of a large amount of concrete data, arrived at in such a way that further social action is governed by that abstraction, without in general going back to the original data” (Stinchcombe 2001:3). For example, having a blueprint that is approved by a client eliminates the necessity of continually returning to the client for her approval

regarding design preferences at each significant stage in the building process (Stinchcombe 2001). When formalization works well, its purpose is the same as the purpose of the substance on which it is based—a license to practice medicine is typically regarded as an appropriate reflection of a doctor’s knowledge and skill. As such, there is no need on the part of a new patient to “go behind” the abstraction (the doctor’s license to practice medicine) to examine the doctor’s educational and professional background.

Ideally, for an abstraction to be continually effective in governing economic action, it should be accurate (does not misdescribe the situation that is to be governed), economical (captures cleanly and orderly only that which is necessary to be easily understood), sufficient (it contains all aspects of a situation that are necessary for effective governance), and have sufficient scope (the range to which the abstraction system can be applied is wide enough for most situations that have to be acted upon to be included) (Stinchcombe 2001). While these conditions constitute an adequate system of abstraction, the system itself should also be communicable to those organizations or people that perform the relevant activities affiliated with the abstraction. To be communicable, a given abstraction should be able to be transmitted to, understood by, and believed by a receiver of the abstraction. Further, the abstraction, to be efficacious and not break down, must exhibit characteristics of transparency and durability.

SBCOs and the Advocacy of Standards

Standards not only need creators, they also need advocates. Unlike the state, standardizers have no coercive power to induce others to adopt their standards. Indeed, standards can be seen as “pieces of general advice offered to large numbers of potential adopters” (Brunsson and Jacobsson 2000:2). Because standards are usually voluntary, standardizers must expend considerable effort to convince a target audience

of the need and benefits of adopting a particular standard. While an abstraction must be adequate and communicable, it must also be communicated.

The need for advocacy of standards is particularly high in nascent markets/industries that rely on standards for the success of their radical new product. In the beginning of such markets, advocates of the products must make claims about the utility and desirability of the radical new product (Rao 2004); they must evangelize an understanding of what the product is, what it does, and why it is useful. In contrast to the conventional coercive, mimetic, and normative mechanisms that generate sets of similar organizations (DiMaggio and Powell 1983), evangelism is an alternative, yet effective, mechanism that explains how the “conversion” tactics of the evangelistic advocates spread a new form of organization (Stinchcombe 2002).

SBCOs and Processes of Verification

SBCOs not only increase and formalize advocacy efforts but also facilitate the adoption of standards through “enrolling” individuals or organizations. Once organizations enroll and adopt standards, they must often modify their organizational structures and activities, submit to information gathering, and allow on-site access to SBCOs, particularly if they want to receive continued SBCO endorsement. Continued and honest monitoring provides important “signals” (Spence 1973) for both the certifier and the certified. These signals cannot be entirely symbolic because audiences will soon begin to discount the signal if it does not adequately correspond to the underlying quality or characteristic it represents (Zucker 1986). However, if the abstraction remains consistent with the reality it represents, legitimacy accrues for both the abstraction as well as the concept behind it (e.g., “fair trade” becomes more cognitively legitimate with each additional wholesaler submitting to the prescribed standards and monitoring). Therefore, standardizers will be more successful in seeing their standards adopted if they create a formal organization of which other

organizations become members. Through this formal organization, standardizers can require members to adhere to their standards and can verify compliance through monitoring activities. Through these processes, voluntary standards begin to take on a rule-like character, which equates to power:

Rule systems as important social technologies become resources and stakes in social interaction and the strategic structuring of social life. Thus, they cannot be viewed as simply “neutral” or “technical means” of realizing certain purposes . . . [They constitute] a power resource which social agents utilize in their struggles and negotiations over alternative structural forms and development of social systems, serving their interests. (Burns 1986:28–29)

Through this power, SBCOs increase their ability to determine continuing membership, set additional rules, and pool resources for continued dissemination of standards and education of would-be adopters. This increased power can also lead to advantageous positioning to influence broader regulatory structures, create status differentiation among actors, and eclipse competing standards (Ahrne, Brunsson, and Garsten 2000).

If a set of standards takes hold among a group of organizations, they have the propensity to generate commensuration—rendering two things equal (Espeland and Stevens 1998). For example, commensuration is achieved when a processor of tomato sauce can combine for processing organic tomatoes grown by multiple producers in multiple locations with confidence that all are grown according to the same principles and processes. Likewise, customers can be indifferent to the origin of the tomato or the idiosyncratic characteristics of the grower because the standard commensurates or renders one organic tomato equal to another. In the presence of standards and agreement on those standards (and consequently commensuration), the price mechanism can begin to operate, reflecting the quality of the product or service. It should be noted that commensuration can occur in markets in the absence of standards, but standards tend to increase a market’s durability.

As outlined above, SBCOs can play a key role in creating a fertile context for growth in new industries. First, by creating standards, they make claims about the nature and characteristics of a product. This activity is particularly important in markets where it is difficult to visually distinguish similar products from one another. Second, SBCOs act as institutional entrepreneurs by evangelizing standards and infusing them with value. Third, SBCOs exercise normative control over a firm once it adopts the SBCOs standards, and as more organizations adopt the standards, SBCOs gain increasing normative control over the field. Finally, through monitoring efforts, SBCOs maintain their own integrity and verify the claims of those they monitor. This results in increased legitimacy for both the individual firm and the concept that the standards represent. SBCOs serve as direct knowledge-diffusion mechanisms that help to establish the identity, legitimacy, and accountability of the new industry, the quality and value of its products and services, and the integrity and reliability of firms (Baum and Rao 2004).

Although the mere presence of standards in a new industry could feasibly increase entry into a new market, I propose that SBCOs provide mechanisms of stability, control, and monitoring that encourage market entry in a way that standards alone cannot. When those espousing a set of standards create formal organizations, they increase the potency of their standards because they have more organizing instruments at their disposal to promulgate the standards and to influence the behavior of adopters (Arhne et al. 2000). Although it may be that not all players within a field adopt SBCO standards, actions taken by SBCOs generate legitimacy and reliability for a new market. As such, I hypothesize the following:

Hypothesis 1: Greater numbers of SBCOs in a given geographic area will increase rates of market entry.

Endorsement/Certification

An additional function of SBCOs is to provide a certification or endorsement that validates the claims a person or an organization makes. Past research has demonstrated the need for organizations to seek out endorsements from institutional actors (Singh, House, and Tucker 1986; Baum and Oliver 1991; Ruef and Scott 1998). Scott (1987) refers to this type of institutional mechanism as authorization. Authorization is the legitimation of the structural features or elements of an organizational form through legitimation by a superordinate unit. A key feature of this mechanism that distinguishes it from coercion is that the subordinate unit is “not compelled to conform but voluntarily seeks out the attention and approval of the authorizing agent” (Scott 1987:502). The ability to gain such endorsement increases flows of legitimacy, status, and access to resources and market channels. Following this logic, I hypothesize the following:

Hypothesis 2: Having certification from an SBCO will decrease a firm’s likelihood of market exit.

A centerpiece of social exchange theory is that actors’ reputations are constructed based in part on the reputations of their associates (Blau 1964). A significant amount of literature has demonstrated that status tends to flow across relationships (Merton 1973; Burt 1987; Podolny and Stuart 1995; Stuart, Hoang, and Hybels 1999). For example, Stuart et al. (1999) demonstrate that the prominence of a firm’s exchange partners influences the success of that firm. This idea is founded on the premise that resource holders will tend to value more highly the evaluations of a prominent actor because they implicitly assume that prominent actors are more likely

to discern quality under conditions of uncertainty than less prominent ones (see Stuart et al. 1999:319). Given this argument regarding status, I posit the following:

Hypothesis 3: The greater the prominence of a certifier that certifies a firm, the less likely that firm will be to exit the market.

Certification may also provide particular benefits to early entrants in a nascent industry. A wealth of literature has been generated around the concept of first-mover advantages (e.g., Lieberman and Montgomery 1988). Advantages include economic rents, market control, establishing switching costs, and channel control. While first-mover advantages exist, evidence suggests that such advantages are moderated by a firm's resources and capabilities (Szymanski, Troy, and Bharadwaj 1995). Third-party certification can be conceptualized as a key firm resource in new markets where unambiguous measures of quality are rare. Furthermore, there are benefits in terms of establishing credibility within a value chain if a firm's products and services are third-party certified. For example, wholesalers or other buyers in the value chain may require certification as a precondition for purchase. It is reasonable to believe that early entrants that are certified will be more likely to establish and maintain key transaction partners and, by extension, to remain longer in the market than firms that are not. Therefore, I propose the following:

Hypothesis 4: Having certification from a third party will enhance the advantages of early entry and will decrease the likelihood of market exit.

In addition to theorizing a direct effect of third-party certification on the likelihood of exit, I posit that benefits of certification will increase in the face of

increased competition. Population ecology has demonstrated that powerful selection mechanisms begin to operate as competition within an organizational population increases (Hannan and Freeman 1989). Under such a scenario, the ability for organizations to obtain scarce resources (and thus shelter themselves from strong selection forces) will increase their survival chances. Thus, certification can mitigate the effect of increasing competition. Hence,

Hypothesis 5: Third party certification will moderate the effects of increased competition on organizational exit.

CONTEXT

The origin of the U.S. organic food industry has its roots in the early decades of the 20th century. A fringe group of scholars and farmers⁶ who believed that agriculture was better understood and practiced through biological and ecological principles, conducted experiments, compiled knowledge, and disseminated their findings. In the early 1940s, J. I. Rodale, a publisher-turned-organic farmer, purchased a farm in Pennsylvania and began farming according to the methods and practices of these early pioneers of organic agriculture. To complement his efforts on his experimental farm and to demonstrate the utility of organic methods, Rodale launched a magazine in 1942 through which readers shared their organic agriculture experiences (Rodale 1942:14) and subsequently published a number of highly influential books that became key sources of information for pioneering organic farmers. Rodale found little widespread success in the first 20 years of his efforts. However, his vision of a radically different food system gained greater momentum as broader movements

⁶ Among the most prominent pioneers and writings in the organic movement were: F. H. King, *Farmers for Forty Centuries, or Permanent Agriculture in China, Korea, and Japan*, 1911; Rudolph Steiner, *Agriculture: A Course of Eight Lectures*, 1924; Sir Albert Howard, *An Agricultural Testament*, 1940; and Lady Eve Balfour, *The Living Soil*, 1943.

surrounding environmentalism drew the public's attention to the dangers of pesticides and other agricultural chemicals. During the 1960s and 1970s, organic agriculture and its associated practices resonated with an increasing audience of gardeners, farmers, and consumers.

As interest in organic farming grew, maintaining the integrity of the organic concept became paramount for movement farmers and consumers. Recognizing the changes that would accompany increasing consumer demand, Rodale's son wrote in 1971,

For a long time, organic farming was a labor of love. Organic farmers rejoiced in the purity of an untarnished Nature, and farmed without chemicals for the sheer joy of saving the soil. Many of those organic farmers managed to make money too, but they were guided more by principle than by an urge to profit . . . some money-oriented farmers are prepared to accept a loose definition of what organic means. The problem is with marketers, not farmers because they are hungry to get a slice of the pie. (p. 73)

In the face of increasing opportunism, Rodale began to develop a systematic verification system. In 1971, Rodale's magazine, *Organic Gardening and Farming*, initiated a pilot organic certification program in California. The program consisted of obtaining a commitment from each farmer to build or maintain a three percent humus content in the soil within five years. An organic seal was developed to identify the commitment, commodity, and location of the farmer. Soil analyses, residue analyses, and personal inspections were also part of the program (Allen 1971:81). In 1972, the Organic Gardening and Farming (OGF) program included a questionnaire that asked farmers for information regarding the acreage committed to organic production, types of crops to be raised, normal problems facing the farmer (i.e., weeds, insects, fungus disease, and soil fertilizing), and organic methods and materials used. The OGF certification program grew to include regional groups in 20 states before it was terminated in 1973. After the termination of the program, farmers in various states

developed their own certification programs to continue to ensure the integrity of organically grown produce. Beginning with about 50 farmers, the California Certified Organic Farmers (CCOF) became the first organization following the termination of the OGF program to certify growers.

After the creation of CCOF, certification organizations formed from local networks of organic farmers throughout the United States. The early certification organizations appeared in Oregon, Maine, New Hampshire, Vermont, Michigan, and Minnesota. In addition to certification services, nonprofit certification organizations dedicated significant organizational resources to information sharing through monthly newsletters, conferences, and on-site workshops. In the absence of substantial support from university extension services and other traditional sources of agricultural information and assistance, these organizations became repositories of expertise, refining, accumulating, and disseminating knowledge of organic production practices. After a time, other types of certification organizations got involved in the industry. State departments of agriculture and for-profit firms entered the industry to provide third-party certification. While multiple verification processes existed, wholesalers increasingly demanded certified organic products. Phrases such as “we only accept CCOF certified products” or “we sell Oregon Tilth certified products” began to fill wholesaler directories. The growth and expansion of SBCOs had significant implications for producers entering the industry. In the following section, I describe the data and methods employed in my analysis of these implications and then explain my results.

DATA AND METHODS

The bulk of the data for this study comes from the *National Organic Directory* (NOD; 1986–2001), published by the Community Alliance with Family Farmers. This was the industry’s most comprehensive listing of producers, wholesalers, resource

groups, certification organizations, retailers, support businesses, and manufacturers in the United States. Listing in the directory was free for all organizations over the duration of the study period.

I depart from the norm in organizational ecology that considers the beginning of a directory as a signal of the birth of a new organizational population. Directories generally appear fairly early in an industry's development (Carroll and Hannan 2000:168), yet firms in the "industry" are often already functioning with operations well underway before the publication of the first directory. For example, the first certification organization began in 1973, and a handful of farmers had been farming organically since the early 1940s. However, the National Organic Directory did not begin publication until 1986. Therefore, instead of conceptualizing a directory as evidence of the "birth" of an organizational population, one can see a directory as an effort to knit together a national market from otherwise disparate buyers and suppliers: "When one finds a continuous series of directories of a given kind of organization, a publisher believes many others will want to find the firms to sell to or to buy from . . . *the purpose of the directory is to create markets*; otherwise it is of only scientific interest, and will not make any money for the publisher" (Stinchcombe 2002:419, emphasis added).

An email from a key informant at the Community Alliance for Family Farmers (CAFF, the organization that produced the directory) alludes to the idea that the National Organic Directory served to create a broader market for organic products:

It is inspiring to think that this organization, in its various incarnations, really did affect the organic foods industry, starting at a time when there *was* no industry—just isolated growers . . . It's amazing to realize it now, but when CAFF started the *National Organic Directory*, it was almost impossible to find organic produce unless you knew someone who grew it. The whole thing was word of mouth. Gleaners ("food conspiracies") from city co-op living groups would go out into the countryside, from farm to farm, looking for well-grown food. All summer long, dilapidated trucks full of hippies lurched down our

driveway in plumes of dust, hoping to fill up with organic fruit. (Personal correspondence, November 16, 2005)

Consequently, I conceptualize entries and exits into and out of the directory as entries and exits from the marketplace rather than births and deaths of organizations.

Dependent Variables

There are two dependent variables in this paper: *market entry* and *market exit*. In this study, I focus on the population of organic producers. The unit of analysis for the market entry is U.S. state. The unit of analysis for *market exit* is the individual producer. I measure *market entry* as the count of all new farms that are listed in the *NOD* at time t , which is updated annually over the course of the observation period. To measure *market exit*, I constructed annual spells for each farm, beginning with the first time the farm is listed in the directory until the time that it disappears from the directory.

Independent Variables

Standards-Based Certification Organizations. To test the effect of SBCOs on market entry (hypothesis 1), I include a measure of the total number of certification organizations present in each U.S. state for each year of the observation period. To verify information on certification organizations listed in the *NOD*, I also consulted three additional directories,⁷ thereby capturing all certification organizations operating in the United States during the observation period of this study.

Certification. To test hypothesis 2, I include a dummy variable for each year a firm is third-party certified.

SBCO prominence. To test hypothesis 3, regarding the prominence of the third-party certifier, I generate a prominence score for each firm on a yearly basis that

⁷ One published by the Organic Farming Research Foundation, another by the Agricultural Marketing Service of the USDA, and the third by ATTRA (Appropriate Technology Transfer for Rural Areas).

reflects the proportion of all farms certified by the certification organization j that certifies the farm i at time t .

Certification x early entrants. To test hypothesis 4, I interact a dummy variable for all firms founded prior to 1990⁸ with the dummy variable for third-party certification.

Certification x density². To test the moderating effect of third-party certification on competition (hypothesis 5), I include an interaction term with third-party certification interacting with producer density.² Unless otherwise noted, all data for these measures are derived from information found in the *NOD*.

Control Variables

I control for a number of important variables. First, I include a number of industry-related controls: the amount of land in farms, number of farms, change in the number of farms, change in the amount of land in farms, and the average size of farms in a state. These data come from the National Agricultural Statistics Service of the United States Department of Agriculture and are measured at the state level. Second, I control for the number of legal provisions passed in a state related to organic food. These data come from Westlaw and state administrative and regulatory codes. Third, I include a number of demand controls. I attempt to capture demand from buyers by controlling for the number of wholesalers in a state. I also include a measure of broader consumer demand. Because there is no data on the actual consumer demand for organic products during the period of study, I include a proxy for consumer demand. Because members of environmental groups tend to be more concerned about the impact of pesticides and fertilizers on the environment, I posit that Sierra Club members are more likely to be consumers of organic food than the average consumer.

⁸ Following a food scare in 1989 involving a carcinogenic chemical growth regulator on apples, demand outstripped supply, and the organic industry grew beyond local niche markets to a broader national marketplace (Lipson 2001).

Therefore, I include a yearly count of Sierra Club membership by state to capture consumer demand. To account for the possibility of reverse causation (increasing demand for certification leading to the creation of more SBCOs), I also control for demand for certification by including change in prior foundings of farms and change in prior percentage of producers certified. Fourth, I control for supply by including measures of the number of producers and number of producers squared in a state. Including the squared term of this variable is consistent with population ecology conventions to capture competitive effects associated with density (Hannan and Freeman 1989). Finally, I control for firm-level characteristics including whether or not a firm is an early entrant (entered directory before 1990), age in the industry, and the degree to which a firm is vertically integrated. To calculate the degree of vertical integration variable, I summed the number of services that the firm provides as listed in the directory. For example, if a firm is listed as a producer, but also lists under “services” that the firm is a retailer, shipper, and processor, then the firm receives a score of 4. All covariates are lagged one year and updated annually. The unit of analysis in the entry models is U.S. state; in the exit analyses, it is the firm.

ANALYSES

To model market entry, I reverted to the negative binomial model because the data violated a key assumption of the Poisson regression (that the conditional mean of yearly foundings equals its variance). The negative binomial model remedies this problem by adding a parameter to account for the dispersion of the dependent variable. Given that the dependent variable is a measure of state counts over time, the observations are not independent. As such, it violates the assumption of independence among observations. Therefore, I use a negative binomial random effects model to account for the state-specific random effect. Doing so allows for interdependent

observations by modeling unobserved influences shared by all the counts of a state. The form of the model is:

$$\lambda_{ij}(\theta_i) = \exp(x_{ij}\beta)\theta_i$$

where λ_{ij} is the predicted foundings in state i in year j , θ_i is a gamma-distributed random effect for region i , and $x_{ij}\beta$ represents the vector of independent variables and coefficients for state i in year j . I estimate random effects models in Stata 9 using the `xtbreg` command.

To model market exit, I use discrete-time event history methods because the exact timing of market exit is not known and there are many “tied” events in the data. Employing discrete time models can handle these problems without introducing bias into the parameter estimates (Kalbfleisch and Prentice 1980; Yamaguchi 1991). I use a complementary log-log model, which is appropriate for longitudinal binary dependent variables and is able to handle multiple events within the same time period. The model can be expressed as:

$$\log(-\log(1 - P_{it})) = \alpha(t) + \beta' X_{it}$$

where the hazard of exit in each year is equivalent to P_{it} , the conditional probability that exit occurs to firm i in year t , given that it has not already occurred and X is a vector of covariates. I selected the complementary log-log discrete time model over the more common logistic regression model because the complementary log-log is a discrete time analogue model to a continuous time hazard model (Singer and Willett 2003). Although my data on market exit is discrete because of data measurement issues (i.e., annual directory information), it is inherently a continuous process. I use the `xtcloglog` command in Stata 9 to model market exit.

RESULTS

Tables 3.1 and 3.2 report the correlations for the market entry and market exit analyses, respectively. Table 3.3 presents the results from the negative binomial regression of market entry clustered on state. Model 1 is a baseline model with only controls. Model 2 includes the number of SBCOs in a state to test hypothesis 1. The variable is found to be positive and highly significant, suggesting that greater SBCO presence leads to increased entry into the market, supporting hypothesis 1. Controlling for demand for certification (captured by the inclusion of the change in prior foundings and change in prior percent certified), each additional certification organization in a state increases entry rates by 53 percent and is highly significant in predicting market entry. Thus, hypothesis 1 is supported.

Table 3.4 presents the results from the maximum likelihood analysis of market exit. Model 1 presents the baseline model. Model 2 includes the firm-level third-party certification variable. The variable is negative and significant, supporting hypothesis 2. Controlling for important firm-level variables such as early entry, age, and vertical integration, firms that are third-party certified are 57 percent less likely to exit from the market. Model 3 includes the measure of SBCO prominence. It is not significant, but the sign is in the expected direction. Model 4 includes an interaction term for certification and early entrance into the market. The sign is in the expected direction, but just misses the .1 significance level. Model 5 includes the interaction term for certification and producer density squared. This variable is negative and significant (supporting hypothesis 5), suggesting that firm-level certification moderates the curvilinear (competitive) effects of producer density. Model 6 is the full model. Certification shows a clear negative and significant effect in all previous models. The interaction term certification x density squared is also significant in models 5 and 6, suggesting that the finding is robust in the face of multicollinearity.

TABLE 3.1: CORRELATIONS FOR MARKET ENTRY

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Farmland														
2. Number of farms	.63													
3. Change in # farms	.21	.07												
4. Change in farmland	-.13	-.06	.20											
5. Farms/acres	.25	-.24	.04	-.13										
6. Sierra Club	.10	.26	.10	-.05	-.25									
7. Wholesaler density	.07	.15	.08	-.08	-.07	.50								
8. Change in prior foundings	.04	.06	.00	-.04	-.02	.20	.27							
9. Change in prior % certified	-.02	.00	.00	.03	-.03	-.02	-.04	.04						
10. Producer density	.08	.15	.11	-.08	-.04	.43	.93	.14	-.05					
11. Producer density ²	.05	.12	.07	-.07	-.04	.34	.82	.23	-.04	.90				
12. # legal provisions	.23	.22	.24	-.02	.06	.21	.29	.07	-.01	.33	.24			
13. # legal provisions ²	.31	.27	.25	-.02	.09	.22	.24	.03	-.01	.29	.21	.93		
14. % producers certified	.00	.06	.10	-.04	-.09	.20	.09	.01	-.20	.13	.05	.27	.20	
15. Number SBCOs	-.09	.16	.01	.03	-.25	.45	.35	.09	.02	.31	.25	.30	.20	.38

TABLE 3.2: CORRELATIONS FOR MARKET EXIT

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1.Farmland													
2.Change in # farms	.29												
3.Change farmland	-.12	.34											
4.Farms/acres	-.30	-.02	-.06										
5.Sierra Club	.49	.13	-.26	-.31									
6.Producer density	.41	.16	-.26	-.23	.73								
7.Producer density ²	.36	.15	-.22	-.21	.63	.97							
8.% Certified producers	-.01	.07	-.03	-.02	-.07	.05	.03						
9.Wholesaler density	.41	.11	-.26	-.24	.76	.84	.79	-.11					
10.Legal provisions	.50	.28	-.16	-.09	.58	.68	.61	.21	.52				
11.Early entrant	.02	-.07	-.03	.00	.00	-.09	-.09	-.31	.00	-.18			
12.Age in industry	.06	.12	-.03	-.04	.11	.23	.23	.23	.07	.26	.29		
13.Vertical integration	.03	-.02	-.03	.00	.09	.05	.05	-.18	.11	-.01	.17	.02	
14.Certification	.03	.04	-.02	-.08	.05	.07	.07	.30	.00	.12	-.19	.11	-.05

TABLE 3.3: NEGATIVE BINOMIAL REGRESSION MODELS OF MARKET ENTRY, 1986–2000

Variable/ Model #	1	2
Farmland	8.90e-06 (7.13e-06)	1.24e-05* (6.49e-06)
Number of farms	6.76e-07 (4.32e-06)	-5.67e-07 (3.96e-06)
Change in # farms	-1.38e-04*** (5.23e-05)	-9.72e-05** (4.60e-05)
Change in farmland	5.62e-05 (1.65e-04)	2.75e-05 (1.43e-04)
Farms/acres	.175 (.148)	.212 (.133)
Sierra Club	.360*** (.095)	.303*** (.091)
Wholesaler density	-.002 (.006)	-.000 (.004)
Change in prior foundings	.034*** (.006)	.045*** (.006)
Change in prior % certified	1.788*** (.312)	1.757*** (.310)
Producer density	.005 (.007)	.007 (.006)
Producer density ²	3.03e-05 (2.66e-05)	9.55e-06 (2.38e-05)
Number of legal provisions	.061*** (.018)	.052*** (.017)
Number of legal provisions ²	-.002*** (.000)	-.001*** (.000)
% producers 3rd party certified	.381 (.265)	.278 (.258)
Number of SBCOs		.423*** (.083)
Constant	-3.537*** (.875)	-3.408*** (.813)
Wald χ^2	223.63***	283.44***
Degrees of Freedom	14	15

* significant at 10%; ** significant at 5%; *** significant at 1%; n=700; 50 states

TABLE 3.4: MAXIMUM LIKELIHOOD ANALYSIS: ORGANIC FOOD MARKET EXIT, 1986–2000

Variable/ Model #	1	2	3	4	5	6
<i>Control Variables</i>						
Number of farms	3.71e-07 (1.17e-06)	4.03e-07 (1.17e-06)	5.45e-07 (1.19e-06)	3.09e-07 (1.17e-06)	4.09e-07 (1.17e-06)	3.53e-07 (1.19e-06)
Change in # of farms	-1.22e-04*** (3.25e-05)	-1.24e-04*** (3.25e-05)	-1.25e-04*** (3.25e-05)	-1.22e-04*** (3.25e-05)	-1.24e-04*** (3.25e-05)	-1.21e-04*** (3.25e-05)
Change in farmland	2.96e-05 (1.32e-04)	2.86e-05 (1.33e-04)	3.23e-05 (1.33e-04)	3.16e-05 (1.34e-04)	2.83e-05 (1.32e-04)	3.34e-05 (1.33e-04)
Farm/acres	-.041 (.062)	-.050 (.062)	-.040 (.063)	-.048 (.062)	-.046 (.062)	-.039 (.063)
Sierra Club	.089** (.039)	.095** (.039)	.097** (.039)	.096** (.039)	.095** (.039)	.097** (.039)
Producer density	-.014*** (.005)	-.015*** (.005)	-.014*** (.005)	-.014*** (.005)	-.015*** (.005)	-.014*** (.005)
Producer density ²	8.31e-05*** (2.85e-05)	8.94e-05*** (2.86e-05)	8.57e-05*** (2.91e-05)	8.69e-05*** (2.87e-05)	1.11e-04*** (3.04e-05)	1.09e-04*** (3.13e-05)
% certified producers	-.057 (.216)	.091 (.219)	.093 (.219)	.108 (.220)	.034 (.222)	.048 (.223)
Wholesaler density	-.002 (.002)	-.002 (.002)	-.002 (.002)	-.002 (.002)	-.002 (.002)	-.002 (.002)
Legal provisions	-.005 (.005)	-.004 (.005)	-.005 (.005)	-.004 (.005)	-.004 (.005)	-.005 (.005)
Early entrant	-.448*** (.122)	-.514*** (.124)	-.511*** (.124)	-.340* (.178)	-.495*** (.124)	-.261 (.183)
Age in industry (ln)	-.202*** (.056)	-.188*** (.056)	-.187*** (.056)	-.180*** (.056)	-.182*** (.056)	-.172*** (.056)

* significant at 10%; ** significant at 5%; *** significant at 1%; n=2854, 915 firms

TABLE 3.4 (Continued)

Variables/ Model #	1	2	3	4	5	6
<u>Control Variables</u>						
Age in industry (ln)	-.202*** (.056)	-.188*** (.056)	-.187*** (.056)	-.180*** (.056)	-.182*** (.056)	-.172*** (.056)
Vertical integration	-.172*** (.034)	-.170*** (.034)	-.172*** (.034)	-.170*** (.034)	-.171*** (.034)	-.172*** (.034)
<u>Certification Variables</u>						
Certification		-.322*** (.095)	-.272** (.119)	-.258** (.108)	-.215* (.112)	-.091 (.144)
Cert x early entrant				-.299 (.226)		-.389* (.231)
SBCO Prominence			-.347 (.495)			-.143 (.506)
Cert x density ²					-2.61e-05* (1.36e-05)	-2.99e-05** (1.42e-05)
Constant	-.877** (.369)	-.748** (.370)	-.777** (.373)	-.826** (.376)	-.805** (.372)	-.931** (.382)
Wald χ^2	139.38***	149.01***	149.37***	146.93***	151.30***	149.68***
Degrees of Freedom	13	14	15	15	15	17

DISCUSSION AND CONCLUSION

The intent of this paper was to explicate the role of standards-based certification organizations in the structuring of new markets and to quantitatively assess their effects on market entry and exit dynamics. Theoretically, I have argued that SBCOs create standards, advocate for their adoption, and then verify and certify claims made by adopting organizations. The formal market entry analysis supports the claim that in the organic food industry, SBCOs served as both mitigators of uncertainty and sources of legitimacy by actively creating and evangelizing standards at a broader market level and, at the same time, verifying organic claims and providing endorsements to compliant firms. Controlling for alternative explanations, the analysis suggests that for each additional SBCO in a state, entry rates into the organic market increase by 53 percent.

The exit analysis suggests that firm-level certification decreases the likelihood of exit from a market for which a firm has “authorization” to participate in. Such certification can decrease the probability of exit by 57 percent. Further, there is evidence that certification moderates the effects of competition, providing a buffer for organizations against the competitive effects resulting from increasing density within a market. The moderating effect of certification on early entry is not strongly supported.

Based on these results, this study makes multiple contributions. First, it extends research on institutional entrepreneurship by moving beyond process explanations of institutional change to focus on how the actions of SBCOs influence market dynamics of exit and entry. SBCOs and their standards are inherently normative by nature (Scott 1995) and the normative dimensions of institutions are understudied (Casile and Davis-Blake 2002). By focusing on the normative efforts of SBCOs to impose order on a marketplace, this study provides evidence that entry and

exit decisions on the part of firms are subject to broader normative institutional influences.

Another related contribution supports the growing research agenda focused on structural aspects of new industry creation, which has begun to examine how new market niches and industries become taken for granted. By focusing on the role of standardization and certification processes, I advance this agenda and answer calls from institutionalists concerned with the role of standards and norms in fostering entrepreneurial activity (Hwang and Powell 2005) and entrepreneurship scholars that recognize the need for increased attention to the structural and institutional aspects of the environment that are beyond the control of entrepreneurs but that nonetheless shape the existence of entrepreneurial opportunities and the efficacy of entrepreneurial efforts (Eckhardt and Shane 2003).

Finally, by focusing on an industry in which standards “create” the underlying product value, this research expands our conception of the role of standards in market creation and growth beyond the important concepts of network externalities and interoperability that are well established in the technology literature. Many new market niches (particularly those concerned with the environmental and social externalities associated with more “traditional” means of production) depend heavily on the integrity of standards, verification methods, and endorsement processes for value and continued market growth. Thus, it behooves scholars to understand the way in which these nascent markets are employing standardization and certification processes.

This preliminary study signals many opportunities for future research. First, this analysis is limited to organic producers only. Future research on the role of standards in nascent markets would benefit from examining how standardization influences all firms along the value chain. For example, because organic wholesalers

act as the key interface between producers and retail markets, they are in a position of dominance (Hawley 1950). Given their position of both power and uncertainty, wholesalers may have been the greatest advocates for third-party certification. Examining how third-party certification impinges on and changes value-chain dynamics among different organizations would be a promising future direction.

A second avenue for research would be to examine the implications of the organizational vehicle of the standards. For example, Garud et al. (2002) highlight the inherent tensions that arose as Sun Microsystems attempted to both create and enforce Java as a standard. Future work should examine whether more objective nonprofit and government certification organizations face different challenges than for-profit certification organizations. Future work could match particular characteristics of firms with particular types of SBCOs. For example, small farmers often preferred to certify with locally based certification organizations, whereas larger farms and processors tended to seek out for-profit, internationally focused certification organizations. An analysis of these relationships may yield interesting SBCO-specific dynamics as the marketplace for both organic food and certification developed.

Finally, in this study, I have assumed that the effects of the actions taken by SBCOs and their endorsement are constant over time. I have also assumed (aside from the early entry/certification interaction variable) that the relative salience or value of the certification to broader constituencies is constant as well. Future work should determine the degree to which the broader institutional environment endorses or even requires third-party certification as a prerequisite for participation in a particular market. This study provides a solid foundation from which to develop this broader set of theoretical questions. Grappling with these ideas will advance understanding of how standards-based certification organizations influence new market creation in a more nuanced fashion.

REFERENCES

- Ahrne, Goran, Nils Brunsson, and Christina Garsten. 2000. Standardizing through organization. In N. Brunsson and B. Jacobsson (eds.), *A World of Standards*. Oxford: Oxford University Press.
- Allen, Floyd. 1971. Looking for the organic America, part II: The program to certify organic farmers. *Organic Gardening and Farming*, 8(9): 80–83.
- Arrow, Kenneth J. 1974. *The Limits of Organization*. New York: Norton.
- Arthur, Brian W. 1989. Competing technologies, increasing returns, and lock-in by historical events. *Economic Journal*, 99, 116–131.
- Baum, Joel A. C., and Christine Oliver. 1991. Institutional linkages and organizational mortality. *Administrative Science Quarterly*, 36(2), 187–218.
- Baum, Joel A. C., and Hayagreeva Rao. 2004. Evolutionary Dynamics of Organizational Populations and Communities, pp. 212-258 in Marshall Scott Poole and Andrew Van de Ven. *Handbook of Organizational Change and Innovation*, Oxford University Press. 2004.
- Biggart, Nicole W., and Thomas D. Beamish. 2003. The economic sociology of conventions: Habit, custom, practice, and routine in market order. *Annual Review of Sociology* 29:443–64.
- Blau, Peter. 1964. *Exchange and Power in Social Life*. New York: Wiley.
- Brunsson, Nils. 2000. Organizations, markets and standardization. In N. Brunsson and B. Jacobsson (eds.), *A World of Standards*. Oxford: Oxford University Press.
- Brunsson, Nils., and Bengt Jacobsson. 2000. The contemporary expansion of standardization. In N. Brunsson and B. Jacobsson (eds.), *A World of Standards*. Oxford: Oxford University Press.
- Burns, Tom R. 1986. Actors, transactions and social structures. In U. Himmelstrand (ed.), *Sociology: From Crisis to Science?* London: Sage.
- Burt, Ronald S. 1987. Social contagion and innovation: Cohesion versus structural equivalence. *American Journal of Sociology*, 92, 1287–1335.
- Carroll, Glenn R., and Michael T. Hannan. 2000. *The Demography of Corporations and Industries*. Princeton, NJ: Princeton University Press.

- Casile, Maureen., and Alison Davis-Blake. 2002. When accreditation standards change: Factors affecting differential responsiveness of public and private organizations. *Academy of Management Journal*, 45(1), 180–195.
- David, Paul A. 1985. Clio and the economics of QWERTY. *American Economic Review*, 75, 332–337.
- DiMaggio, Paul J. 1988. Interest and agency in institutional theory. In L. G. Zucker (ed.), *Institutional Patterns and Organizations: Culture and Environment*. Cambridge, MA: Ballinger.
- DiMaggio, Paul J., and Walter W. Powell. 1983. The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48 (2), 147–160.
- Douglas, Mary. 1986. *How Institutions Think*. Syracuse, NY: Syracuse University Press.
- Durand, Rodolphe, and Jean McGuire. 2005. Legitimizing agencies facing selection: The case of the AACSB. *Organization Studies*, 26(2), 113–142.
- Eckhardt, Jonathan T., and Scott A. Shane. 2003. Opportunities and entrepreneurship. *Journal of Management*, 29, 333–349.
- Espeland, Wendy N., and Mitchell L. Stevens. 1998. Commensuration as a social process. *Annual Review of Sociology*, 24, 313–343.
- Farrell, Joseph and Garth Saloner. 1986. Installed base and compatibility: Innovation, product preannouncement, and predation. *American Economic Review*, 76, 940–955.
- Favereau, Olivier. 2002. Conventions and regulation. In Boyer, R., and Saillard, Y. (eds), *Regulation Theory: The State of the Art*, Princeton, NJ: Princeton University Press.
- Fischer, Claude S. 1992. *America Calling: A Social History of the Telephone to 1940*. Berkeley, CA: University of California Press.
- Fligstein, Neil. 1996. Markets as politics: A political-cultural approach to market institutions. *American Sociological Review*, 61(4), 656–673.
- Fligstein, N. 1997. Social skill and institutional theory. *American Behavioral Scientist*, 40, 397.

- Garud, Raghu, Sanjay Jain, and Arun Kumaraswamy. 2002. Orchestrating institutional processes for technology sponsorship: The case of Sun Microsystems and Java. *Academy of Management Journal*, 45, 196–214.
- Garud, Raghu, and Michael A. Rappa. 1994. A socio-cognitive model of technology evolution: The case of cochlear implants. *Organization Science*, 5, 344–362.
- Greif, Avner. 2005. Institutions and the path to the modern economy: Lessons from medieval trade. In Menard, C. and Shirley, M. (eds), *Handbook of New Institutional Economics*. Netherlands: Springer.
- Hannan, Michael T., and John Freeman. 1989. *Organizational Ecology*. Cambridge: Harvard University Press.
- Hawley, Amos. 1950. *Human Ecology*. New York: Roland.
- Hwang, Hokyu, and Walter W. Powell. 2005. Institutions and Entrepreneurship. In Acs, Z. (ed), *Handbook of Entrepreneurship Research*. Kluwer Publishers.
- Kalbfleisch, John D., and Ross L. Prentice. 1980. *The Statistical Analysis of Failure Time Data*. New York: Wiley.
- Katz, Michael L., and Carl Shapiro. 1985. Network externalities, competition, and compatibility. *American Economic Review*, 75, 424–440.
- Leblebici, Huseyin, Gerald R. Salancik, Anne Copay, and Tom King. 1991. Institutional change and the transformation of interorganizational fields: An organizational history of the U.S. radio broadcasting industry. *Administrative Science Quarterly*, 36(3), 333–363.
- Lieberman, Marvin B., and David B. Montgomery. 1988. First-mover advantages. *Strategic Management Journal*, 9, 41–58.
- Lipson, Elaine. 2001. *The Organic Foods Sourcebook*. Chicago: Contemporary Books.
- Litwak, Eugene, and Lydia F. Hylton. 1962. Interorganizational analysis: A hypothesis on co-ordinating agencies. *Administrative Science Quarterly*, 6(4), 395–420.
- Maguire, Steve, Cynthia Hardy, and Thomas B. Lawrence. 2004. Institutional entrepreneurship in emerging fields: HIV/AIDS treatment advocacy in Canada. *Academy of Management Journal*, 47(5), 657–679.

McAdam, Doug, John D. McCarthy, and Mayer N. Zald. 1996. Introduction: Opportunities, mobilizing structures, and framing processes—toward a synthetic, comparative perspective on social movements. Pp. 1–20 in *Comparative Perspectives on Social Movements: Political Opportunities, Mobilizing Structures, and Cultural Framings*, edited by McAdam, D., J.D. McCarthy, and M. N. Zald (eds.). Cambridge: Cambridge University Press.

Merton, Robert K. 1973. The Matthew effect in science. In N. Storer (ed.), *The Sociology of Science*. Chicago: Chicago University Press.

Pinch, Trevor J., and Wiebe E. Bijker. 1987. The social construction of facts and artifacts: Or how the sociology of science and the sociology of technology might benefit each other. In W. E. Bijker, Hughes, T. P., and T. J. Pinch. (eds), *The Social Construction of Technological Systems*. Cambridge, MA: MIT Press.

Podolny, Joel M., and Toby E. Stuart. 1995. A role-based ecology of technological change. *American Journal of Sociology*, 100, 1224–1260.

Porac, Joseph F., Marc J. Ventresca, and Yuri Mishina. 2002. Interorganizational cognition and interpretation. In J. A. C. Baum (Ed.), *Companion to Organizations*. Malden, MA: Blackwell.

Quelin, Bertrand V., Tamym Abdessemed, Jean-Philippe Bonardi, and Rodolphe Durand. 2001. Standardisation of network technologies: Market processes or the result of inter-firm co-operation? *Journal of Economic Surveys*, 15(4), 543–569.

Rao, Hayagreeva. (1994). The social construction of reputation: Certification contests, legitimation, and the survival of organizations in the American automobile industry: 1895–1912. *Strategic Management Journal*, 15(8), 29–44.

Rao, Hayagreeva. 2004. “Institutional activism in the early American auto industry.” *Journal of Business Venturing*, 19:359–384.

Rao, Hayagreeva., Calvin Morrill, and Mayer N. Zald. 2000. Power plays: Social movements, collective action and new organizational forms. *Research in Organizational Behavior*, 22: 239–282.

Rodale, J. I. 1942. Introduction to Organic Farming. *Organic Farming and Gardening*, 1(1): 3–5.

Rodale, J. I. 1948. *The Organic Front*. Emmaus, PA: Rodale Press.

Rodale, Robert. 1971. Join the fight against organic phonies. *Organic Gardening and Farming*, 18(6): 73–74.

- Ruef, Martin, and W. Richard Scott. 1998. A multidimensional model of organizational legitimacy: Hospital survival in changing institutional environments. *Administrative Science Quarterly*, 43(4), 877–904.
- Sarasvathy, Saras. and Nicolas Dew. 2005. New market creation through transformation. *Journal of Evolutionary Economics*, 15(5), 533–565.
- Schneiberg, Marc. 2002. Organizational Heterogeneity and the Production of New Forms: Politics, Social Movements and Mutual Companies in American Fire Insurance, 1900–1930. In M. Lounsbury and M. J. Ventresca (eds), *Research in the Sociology of Organizations* (Vol.19, pp. 39–89). Oxford, U.K.: JAI Press.
- Scott, W. Richard. 1987. The adolescence of institutional theory. *Administrative Science Quarterly*, 32(4), 493–511.
- Scott, W. Richard. 1995. *Institutions and Organizations*. Thousand Oaks, CA: Sage Publications.
- Scott, W. Richard, Martin Ruef, Peter J. Mendel, and Carol A. Caronna. 2000. *Institutional Change and Healthcare Organizations: From Professional Dominance to Managed Care*. Chicago: University of Chicago Press.
- Singer, Judith D., and John B. Willett. 2003. *Applied Longitudinal Data Analysis: Modeling Change and Event Occurrence*. Oxford; New York: Oxford University Press.
- Singh, Jitendra V., Robert J. House and David J. Tucker. 1986. Organizational change and organizational mortality. *Administrative Science Quarterly*, 31(4), 171–93.
- Smith, Robert A. 1973. *The Social History of the Bicycle*. New York: American Heritage Press.
- Spence, A. Michael. 1973. Job market signaling. *The Quarterly Journal of Economics*, 87(3), 355–374.
- Stern, Robert N. 1981. Competitive influences on the interorganizational regulation of college athletics. *Administrative Science Quarterly*, 26(1), 15–32.
- Stinchcombe, Arthur L. 2002. New sociological microfoundations for organizational theory: A postscript. In M. Lounsbury and M. J. Ventresca (eds), *Research in the Sociology of Organizations* (Vol.19, pp. 39–89). Oxford, U.K.: JAI Press.
- Stinchcombe, Arthur L. 2001. *When Formality Works: Authority and Abstraction in Law and Organizations*. Chicago: University of Chicago Press.

Strang, David, and Ellen M. Bradburn. 2001. Theorizing legitimacy or legitimating theory? Neoliberal discourse and HMO policy. In J. Campbell and O. K. Pedersen (eds), *The Rise of Neoliberalism and Institutional Analysis*, Princeton: Princeton University Press.

Stuart, Toby E., Ha Hoang, and Ralph C. Hybels. 1999. Interorganizational endorsements and the performance of entrepreneurial ventures. *Administrative Science Quarterly*, 44, 315–349.

Szymanski, David M., Lisa C. Troy, and Sundar G. Bharadwaj. 1995. Order of entry and business performance: An empirical synthesis and reexamination. *Journal of Marketing*, 59(4), 17–33.

Tushman, Michael L., and Philip Anderson. 1986. Technological discontinuities and organizational environments. *Administrative Science Quarterly*, 31, 439–465.

Utterback, James M., and William J. Abernathy. 1975. A dynamic model of process and product innovation. *Omega*, 33, 639–656.

Wiley, Mary G., and Mayer N. Zald. 1968. The growth and transformation of educational accrediting agencies: An exploratory study in social control of institutions. *Sociology of Education*, 41, 36–56.

Williamson, Oliver E. 1985. *The Economic Institutions of Capitalism*. New York: Free Press.

Yamaguchi, Kazuo. 1991. *Event History Analysis*. Newbury Park, Calif.: Sage Publications.

Zajac, Edward J., and Matthew S. Kraatz. 1993. A diametric forces model of strategic change: Assessing the antecedents and consequences of restructuring in the higher education industry. *Strategic Management Journal*, 14(4), 83–102.

Zucker, Lynne G. 1986. Production of trust: Institutional sources of economic structure, 1840–1920. In B. Staw and L.L. Cummings. (eds), *Research in Organizational Behavior*, vol. 8. Greenwich, CT: JAI Press.