

Introduction

In the mid 1970s, the Guatemalan sugar industry consisted of roughly a dozen small sugar mills that sold most of their product in the protected domestic market. They used second-hand, outmoded machinery to process sugarcane purchased from a multitude of locally-owned plantations located in Guatemala's Pacific coast. On these plantations, the majority of the industry's workforce cut sugarcane under appalling conditions, their wages meager even by local standards.

By the early 2000s, the mills had undergone a remarkable industrial transformation that fostered not only economic benefits, but also significant material improvements for the industry's workers. Mills crafted a new production model. They reorganized their production processes and introduced a range of technological innovations in plantations and processing facilities. They replaced the traditional labor and employment arrangements with new systems that enhanced worker living and working conditions. Mills also developed new business strategies. They diversified their products and focused on the highly competitive export market.

A similar process of industrial transformation, combining economic and social gains, is unfolding among cattle ranchers in north central Nicaragua. Until the late 1980s, ranchers in this impoverished region of the country produced only raw milk for large processors and unpasteurized cheese for local production. They relied upon artisanal production processes and technology. Work, and health and safety standards at these production facilities were dire.

But over the past twenty-five years, many of these ranchers have entirely transformed their production models and business strategies. They formed cooperatives that include significant numbers of small and medium-sized producers. They introduced a number of infrastructure improvements in ranches, and reorganized on-ranch production. They also built cooperatively-owned cheese

processing plants, employing skilled workers and sophisticated imported equipment. Moreover, these cheese processing rancher cooperatives revamped their business strategy. They produce a range of dairy and cheese products for domestic and export sales.

The transformations of Guatemalan sugar mills and Nicaraguan rancher cooperatives are noteworthy for at least three reasons. First, both occurred in unlikely political and economic contexts that, if anything, forestalled a similar development trajectory among comparable firms and industries. In Guatemala, mills in the sugar industry reorganized their production models and business strategies in the midst of a deep economic recession and an ongoing civil war. In contrast, coffee and cotton producers in the country largely floundered during this time. In Nicaragua, the cattle ranchers that organized the cheese processing cooperatives pursued their transformations as the country emerged from the civil war with a ravaged economy. As these cooperatives of cattle ranchers transformed their organizational models, other ranchers and cheese producers in the same region struggled to survive. The main point is that, in both cases, domestic conditions were not particularly conducive to industrial transformation.

Second, in their transformation trajectories, both Guatemalan mills and Nicaraguan rancher cooperatives diverged dramatically from nearby producers participating in the same industries. Though all were beholden to the same international market conditions, their experiences varied markedly. While Guatemalan sugar mills thrived and reorganized their production practices, sugar producers in neighboring countries largely stagnated or collapsed. Similarly, as the rancher cooperatives in Nicaragua adopted a range of organizational innovations, other cheese producers in Nicaragua and in neighboring Central American countries retained their traditional production models and business strategies.

Third, the transformations in the Guatemalan sugar mills and Nicaraguan cheese processing rancher cooperatives produced not only economic, but also social gains.

As a growing literature suggests, such “mutual gains” (Osterman, 2000) and “social upgrading” (Barrientos, Gereffi, & Rossi, 2011) are anything but certain in cases of organizational restructuring. Often, the rewards from industrial transformations are funneled to the top of organizational hierarchies. Yet, in Guatemala’s sugar industry, worker conditions, especially among cane cutters, improved significantly alongside output and export growth. Similarly, in Nicaragua, small cattle ranchers’ incomes rose rapidly, as did the employment opportunities and labor conditions of the cooperative cheese plant workers.

Given these contextual features and the particular characteristics of the new production models and business strategies in the two cases, the question that arises is, how did these two sets of firms in Guatemala and Nicaragua accomplish these remarkable industrial transformations? How did the Guatemalan sugar mills and Nicaraguan rancher cooperatives introduce the widespread organizational changes that both set them apart from comparable industries, and delivered economic and social benefits?

As this dissertation will argue, to account for this transformation we must turn to the role of the particular ideologies of top firm decision-makers in the two industries. Those ideologies drove two distinct teams of top firm decision-makers, the Apostles of Development in Guatemala and the Cooperative Brigadistas in Nicaragua, to create and diffuse new production models and business strategies that transformed their respective firms and industries. They guided these teams as they introduced a range of practices that both enhanced firm performance and delivered social gains.

Industrial transformations with social gains

The industrial transformations of the Guatemalan sugar mills and Nicaraguan cheese processing rancher cooperatives involved radical changes in their production models and business strategies. Swept by “gales of creative destruction,”

to use Schumpeter’s adaptation of Sombart’s idea, firms in both cases substituted new, modern practices for their traditional approaches. The types of practices they changed can be examined along four distinct axes of comparison: production organization, technology, labor and employment practices, and products and markets. Table 1.1 offers a description of each of the axes of comparison.

Table 1.1 Axes of comparison of production models and business strategies

Axis of comparison	Description of practices
Production Organization	The organization of production affects the deployment of workers, internal mobility patterns, production steps and processes, and job classifications (Appelbaum & Batt, 1994; Bailey & Bernhardt, 1997; Osterman, 1994, 2000)
Technology	The technology used in production varies by its origin, degree of sophistication and capital intensity, and extends to firm investments in R&D (Freeman & Hannan, 1984; Piore, 1990).
Labor and employment practices	The practices of labor and employment include staffing policies, compensation schemes, training and skill development programs, wage rules, income and employment security, and collective worker organization (Appelbaum & Batt, 1994; Kochan, Katz, & McKersie, 1986; Osterman, 1994, 2000)
Products and markets	Products refer to a firm’s degree of diversification and value-added output, while markets pertain to the products’ extent of competition (niches) and regulatory requirements or constraints.

An examination of these broader organizational changes, as opposed to simply focusing on total production or exports, enables a finer-grained view of the characteristics and consequences of industrial transformations. This closer inspection is important because, as a well-established institutional literature in industrial relations and high-performance work organizations (HPWOs) suggests, firms can perform the same work by deploying a variety of practices and models (Appelbaum & Batt, 1994; Osterman, 1994, 2000; Piore, 1990).

According to this literature, these different mixes of practices, though delivering similar outputs, often offer varying conditions for firm stakeholders, most notably workers. Only a few elicit “mutual gains,” namely “benefits to both the firm and the

workforce” (Osterman 2000, 179). The most basic distinction drawn is between “low road” and “high road” approaches. As Kochan, Appelbaum, Leana & Gittel (2013) explain in a recent article, “One strategy was to more aggressively seek to compete with low wage competitors by demanding and achieving wage concessions and lower or “two-tier” wages for entry level workers. This became known as the “low road” competitive strategy... The alternative or “high road” strategy was to view labor and human capital as an asset by investing in employee development and training and more fully utilizing the knowledge and skills of the workforce to drive innovation, product and service quality, and productivity...” (4)¹ The high road approach is often associated with HPWOs,² while the low road approach is most readily linked to Porter’s (1980) generic competitive strategy of “cost leadership.”³

The importance of examining not only the economic benefits, but also the social consequences of the organizational restructuring involved in industrial transformations is also underscored by another literature that focuses on Global Value Chains (GVCs). Some of the path breaking work on this subject expands the GVC literature by drawing on the HPWO research in industrial relations. Locke,

¹ Other authors have explored these variations under different guises (e.g. Piore and Sabel’s (1984) mass production versus flexible specialization) and with a larger number of possible mixes (e.g. Appelbaum and Batt’s (1993) American HR model, Sociotechnical systems, Lean production, Flexible specialization and Diversified quality production).

² Much of this HPWO literature assumes that, to obtain the commitment and loyalty required of workers in “high road” strategies, employers must offer improved worker conditions.² Conversely, under “low road” conditions, skilled work and loyalty prove unnecessary, and therefore so do improved conditions. The argument, which builds on the strategy literature assumption of “internal consistency” (Porter 1980), is that the viability of selected technological, production process and business strategy bundles will be enhanced when coupled with complementary labor and employment practices. This assumption is driven home by a number of studies suggesting that internally consistent bundles of high performance/high road practices deliver enhanced firm performance (Ichniowski, Kochan, Levine, Olson, & Strauss, 1996; Ichniowski et al., 1997; MacDuffie, 1995).² But see Osterman (2000). He finds that in his sample of firms, high performance work organizations (HPWOs), involving Self-managed teams, Total Quality Management, Quality Circles and Job Rotation, diffused. Yet, improvements in employee welfare did not proceed alongside this dissemination. He concludes that “these HPWOs do not seem to have lived up to their promise of ‘mutual gains’” (195). He speculates that this might be either due to employees appreciating these HPWO practices to such an extent that they continue to cooperate despite the lack of mutual gains; and/or to the “power imbalances in the workplace” being such that employers can impose the changes.

³ Porter (1980) describes it as involving “vigorous pursuit of cost reductions from experience, tight cost and overhead control, avoidance of marginal customer accounts, and cost minimization in areas like R&D, service, sales force, advertising, and so on...”

Kochan, Romis and Qin (2007), for instance, developed a detailed study of two apparel factories in Mexico. Among other things, they showed that two different approaches to production, namely “lean production” and “scientific management,” offered dramatic differences in both production and, most notably, employee-centered outcomes. In other words, though producing roughly the same product for the same market, the two organizational models diverged in their consequences for workers.

More recently, a research initiative focused on “Capturing the Gains” in GVCs has begun examining the relationship between “economic and social upgrading” (Barrientos, Gereffi, et al., 2011; Barrientos, Mayer, Pickles, & Posthuma, 2011). The research initiative explores the conditions that allow both firms and workers to gain from the process of upgrading. It challenges the literature’s previously held assumption that the benefits of upgrading automatically trickle down to workers.

Capturing the Gains also strives to bring together two bodies of GVC literature. The first is centered on “the dynamics of GPNs and global value chains (GVCs) at the firm and industry level.” The second focuses “on the flexibilization and casualization of work and the challenges of promoting labour standards in the global economy.”⁴ These two literatures “have tended to remain separate, either confined within specific academic disciplines and conceptual frameworks, or proceeding at different levels of analysis” (Barrientos, Mayer, et al., 2011, 300). The proposed agenda examines the interaction between these two parallel strands of GVC literature and offers insights into the processes through which economic upgrading also delivers social upgrading.

⁴ It is important to note this influential strand in the GVC literature. It underscores the social embeddedness of the suppliers of global buyers as it explores the effects of private and public regulation, and social mobilization, on the conditions of work (Anner, 2012; Esbeneshade, 2004; Locke, Amengual, & Mangla, 2009; Locke, 2013; Seidman, 2009). This strand of the GVC literature, however, rarely addresses the interaction between organizational transformation, or upgrading, and social gains. Rather, the emphasis is on the conditions under which regulation and social mobilization ramp up labor standards.

This dissertation follows the HPWO and GVC literatures in adopting a broader understanding of industrial transformations that considers both their economic and social implications. It shows that, contrary to producers in other upgraded industries, the firms in the two studied cases pursued transformations that delivered economic *and* social gains. They introduced changes in practices along the four axes described, generally embarking on a “higher road” approach.

In Guatemala, sugar mills took control of production on plantations, reorganizing the process of production, heavily training workers, and introducing technological changes. These steps dramatically raised land and labor productivity – they grew by an over 55%, and 200% respectively between 1978/79 and 2009/2010 (CENGICANA 2008 and 2011; Oglesby 2000; Personal communications with managers, 2010). In processing facilities, they professionalized and specialized the workforce, and imported sophisticated equipment. These changes allowed them to rapidly expand sugar output – it more than quintupled between 1978/79 and 2008/09 (CENGICANA 2008 and 2011). They also led them to produce a range of sugar qualities (e.g. raw sugar, refined sugar) and related products such as ethanol and electricity. They sell most of their production abroad (70% of output), and have become the fourth largest raw sugar exporter in the world (FAO 2013).

Crucially, and in contrast to many mills in fast-growing sugar industries such as 1990s Brazil’s (Coslovsky & Locke, 2013),⁵ upgraded work and employment practices complemented these innovations in plantations and processing facilities. They trained and professionalized permanent workers, and offered them a number of benefits. Most notably, they revamped labor and employment practices for cane cutters. They offered them longer term written contracts, wages well above the legally set minimum, adequate living facilities, a range of work-related benefits, and an array of programs in nutrition, education, health and recreation.

⁵ Though Locke and Coslovsky (2013) present an argument for the complementary role of public and private regulation in blocking the “low road”, they recognize that “Until recently the Brazilian sugar industry was characterized by environmental degradation and inadequate labor standards” (499).

In Nicaragua, cheese processing rancher cooperatives similarly introduced a new organization of production and technological package in ranches and processing plants. This organizational shift allowed them to pursue new products and markets. Through on-ranch innovations including adequate milking facilities, pasture improvements, genetic interventions, tropical health programs, fencing and smaller corrals, medium- and small-sized cooperative ranchers raised health and safety standards. They also more than doubled raw milk output per cow between the early 1990s and the early 2000s, and dampened the year-round cyclicity of raw milk production. In processing, they built cheese plants with sophisticated imported machinery, laboratories, and skilled, multi-functional technicians and workers. In these plants, they produce a range of cheeses and other dairy products. They sell some domestically, but increasingly export their production to other Central American countries and the high-standard United States (this latter market absorbed about 25% of their exports in 2012) (Author, with data from Centro de Trámites de las Exportaciones (CETREX) 2013).

As in Guatemala, the industrial transformation of Nicaragua's cheese processing rancher cooperatives coupled economic growth with social gains. In a largely rural region marked by high poverty rates and low levels of education, cooperatives have invested heavily in training workers and managers at collection centers and processing plants. They offer their workers long-term written contracts, wages in excess of the legally required minimum, a full menu of benefits above those required by law, variation in daily tasks and even job ladders. Equally important, and in contrast to other cheese processing firms located in the same region of the country, the cooperatives spread the economic gains to all their members, most of them medium- and small-sized ranchers. These ranchers benefit not only from the sales of their processed dairy products, but also from cooperative purchases of their raw milk at higher, more stable prices than other potential buyers.

The proposed ideational explanation for industrial transformation

How did the Guatemalan sugar mills and Nicaraguan cheese processing rancher cooperatives accomplish these remarkable industrial transformations? Two sets of theories are often offered to account for such dramatic organizational changes. The first set focuses on the role of the state. Though they vary widely in their diagnoses and prescriptions, these theories generally explore how the state establishes various preconditions that elicit firm and industry upgrading, and more broadly, economic development (Acemoglu, Johnson, & Robinson, 2005; A. H. Amsden, 2003; R. F. Doner, 2009; Evans, 1995; Hausmann & Rodrik, 2003; Krueger, 1990; Williamson, 2008). The second set of theories of industrial transformation centers on the explanatory role of inter-firm learning and collaboration. This set of theories also encompasses a range of approaches, each highlighting a different type of firm interaction that enables learning and upgrading (Bair, 2005; R. Doner & Schneider, 2000; Gereffi, 1999; Humphrey & Schmitz, 2002; Saxenian, 2004).

Though highly influential and insightful, most of these theories share a common drawback: they adopt too simplified an understanding of firms, particularly of the firms examined as cases of industrial transformation. This understanding deprives those firms of any agency. In the mechanisms favored by the different explanations, they are usually seen as merely responding to different conditions, whether particular state policies or specific firm-firm interactions, in a predetermined, predictable manner. Thus, ironically, the fate of firms is assumed to depend not on their own internal decisions, but on the actions that state bureaucrats or global buyers, to name just two examples, might take.

Recognizing the role of firm agency promises to generally strengthen prevailing theories, and may offer an alternative to account for two particular scenarios. The first, which we call the “divergence scenario,” refers to situations in which the favored explanation produces varying outcomes. In this divergence scenario, the preferred explanation might promote industrial transformations among some firms

or industries, but not among other, comparable ones. Accounting for firm agency, and examining its interaction with prevailing explanations, suggests useful extensions to accounts offered by standard theories.

The second “unlikely scenario” turns our attention to situations in which industrial transformations unfold even in the absence of the established explanations. The two studied cases of this dissertation represent instances of this latter scenario. The Guatemalan sugar mills and Nicaraguan cheese processing cooperatives fundamentally revamped their production models and business strategies in war-torn countries. They accomplished their transformations despite operating under barely functioning states and in contexts of acrimonious cross-firm relations. They undertook these costly and risky processes of industrial transformation while most firms operating in their same industries dug their heels in and retained their traditional approach.

Sometimes, this “unlikely scenario” triggers scholarly searches for evidence supporting one prevalent explanation or another. When successful, these searches conclude that the context was not unlikely after all. Yet, in accounting for the transformations of the Guatemalan sugar mills and Nicaraguan cheese processing cooperatives, I found no evidence to support the prevalent accounts.

Instead, the proposed explanation follows a different logic. It begins with firms, and specifically, with the actions of top firm decision-makers. These are the architects of industrial transformations, the individuals who often create and diffuse transformative new production models and business strategies. The proposed explanation recognizes their agency and the importance of their strategic decisions.

This alternative perspective suggests that the remarkable transformations of the Guatemalan sugar mills and Nicaraguan cheese processing cooperatives resulted from the distinct actions taken by these top firm decision-makers. These decision-makers set about transforming their firms and industries despite their inhospitable

environments. They pushed forward radical innovations while most comparable firms skeptically observed. Their actions affected not only firm production and markets, but also conditions for stakeholders such as workers and small producers.

Yet, who were these top firm decision-makers? And why did they pursue such remarkable transformations? Geertz's (1963) *Peddlers and Princes* offers a window to address these questions. In his book, Geertz examined the explanatory role of "religious beliefs" and "value systems" for the dynamic of economic modernization. He detailed the contrasting ways in which two groups of Indonesian entrepreneurs solved crucial organizational problems in their firms. These entrepreneurs mobilized "existing social and economic resources," turned a force of largely undisciplined workers toward a "coordinated, persistent, productive effort", and systematically administered "both the manufacturing and marketing ends of business." In shaping their path-breaking actions, argued Geertz, the entrepreneurs' distinct religious values and beliefs took center stage. Acting as "ideological carriers," these entrepreneurs directed their actions to the pursuit of their religious ideologies' values.

Geertz's account points to the importance of Weber's concept of "value-rational action" (Kalberg 1980, 1155). For Weber, value-rational action is an inherent anthropological trait of humankind that allows individuals to act in a manner consistent with their values and beliefs. It enables "substantive rationality." As Kalberg (1980) explains, in Weber's theory substantive rationality "directly orders actions into patterns" on the basis of "a past, present or potential value postulate." Value postulates, in turn, consist of "entire clusters of values that vary in comprehensiveness, internal consistency, and content." For example, varying religious and political ideologies encompass different value postulates and standards. Insofar as "the content of the substantive rationality's values" guides

“action into specific channels,” this “radical perspectivism” entails broad variation in patterns of value-rational social action (Kalberg, 1980).⁶

In accounting for the industrial transformations of Guatemalan sugar mills and Nicaraguan cheese processing cooperatives, this dissertation follows Weber and Geertz. It proposes that the value postulates of distinct ideologies motivated the transformative value-rational actions of two teams of top firm decision-makers. In Guatemala, a team of managers spearheaded the transformation of the sugar mills. In their transformative mission, they were driven by Vatican II Catholic social doctrine, a religious ideology which they all shared. Acting as the proverbial “Apostles of Development” of Catholic Encyclicals, this managerial team crafted and diffused the new production model and business strategy in accordance with their ideological principles.

In Nicaragua’s north central region, I found a similar phenomenon. Led by teams of foreign aid consultants inspired by their ideological commitment to Sandinismo, a political ideology, a number of rancher associations adopted an entirely new cooperative cheese processing production model and business strategy. The foreign aid consultants, whom I call the “Cooperative Brigadistas,” constructed these often risky and costly new models and strategies. They accomplished this through grassroots transformative mentoring campaigns reminiscent of the Literacy Brigadistas of the Sandinista regime.

In both cases of transformation, the principles of these two ideologies, Vatican II Catholic social doctrine and Sandinismo, motivated the actions of the Apostles and Brigadistas. Vatican II Catholic social doctrine encouraged the Apostles to pursue such general principles as the common good, respect for human dignity, and the

⁶ As Kalberg (1980) explains, the “radical perspectivism” embodied in Weber’s concept of substantive rationality implies that there is no “absolute array of ‘rational’ values.” Rather, “a rationalization process depends on an individual’s implied or stated, unconscious or conscious, preference for certain ultimate values and the systematization of his or her action to conform to these values. These values acquire “rationality” merely from their status as consistent value postulates...” (1155-1156)

brotherhood of mankind. Similarly, Sandinismo spurred followers to create a revolutionary society, promote popular democracy and foster independent economic development. Though they operated under the “uncertainty scenario,” bereft of common drivers of industrial transformation, these two teams drew inspiration from their ideologies to foster wide-ranging organizational changes.

However, though forcefully springing ideological carriers into action, these two ideologies failed to provide a blueprint to guide their efforts. Neither specified the concrete actions that ideological carriers should pursue. Nor did they determine the realms of social life to be transformed. In other words, both lacked the actionable content that is assumed to be self-evident in Weberian accounts. Instead, they offered only relatively broad principles, or value postulates, that allowed significant leeway for value-rational action.

Not surprisingly given these broad principles, the two ideologies have been associated with a number of different patterns of action. Vatican II Catholic social doctrine is linked not only to the industrial transformation of the Guatemalan sugar mills but also, and more commonly, to numerous grassroots and even revolutionary in 1960s and 1970s Latin America. Analogously, in addition to providing the impetus for the transformation of the Nicaraguan cheese processing plants, Sandinismo shaped the strongly statist approach of the Sandinista regime of the 1980s.

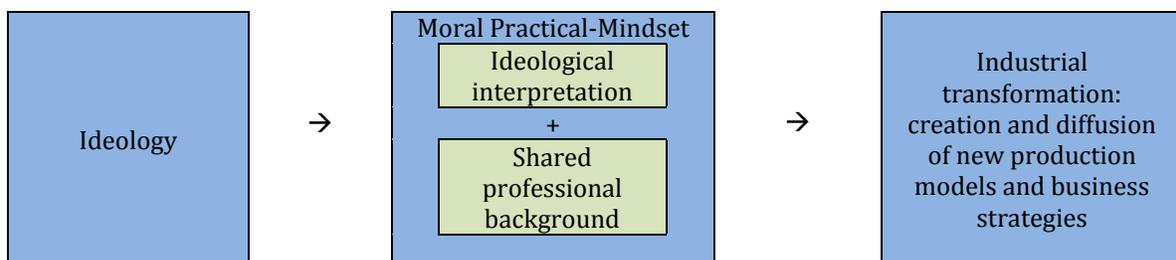
Given their general principles and the varied patterns of action associated with them, an explanation linking ideologies to industrial transformation must specify how these ideologies translate into the concrete transformative actions of top firm decision-makers. In this vein, the proposed argument, further developed in Chapter Two, suggests that the manner in which these top firm decision-makers enacted the principles of their ideologies to foster industrial transformation was mediated by what I call their “moral-practical mindsets” (see Figure 1.1). Moral-practical

mindsets integrate particular interpretations of the motivating ideology with the shared professional background of the ideological carriers.

Within the overarching umbrella of an ideology's value postulate, different ideological interpretations offer varied, even conflicting understandings of its content. They provide ideological carriers with causal maps and taxonomies to make sense of their environment. As a result, they may motivate seemingly inconsistent behaviors. Ideological interpretations prioritize specific moral and political imperatives and aspirations within the body of an ideology, and downplay others. They highlight the partial contradictions that often plague ideologies, and motivate ideological carriers to pursue the prioritized moral precepts.

The shared professional backgrounds of the ideological carriers, in turn, focus their value-rational actions on particular spheres of life. Distinct ideological interpretations may frame ideological carriers' patterns of value-rational action by providing causal maps and taxonomies. But their shared professional backgrounds steer their actions toward particular realms of activity such as religion, politics or, in the case of industrial transformations, business. In addition, professional backgrounds supply tools, practices, skills and knowledge. Ideological carriers rely upon them to creatively implement solutions in response to their ideological interpretations' imperatives, aspirations and causal maps. In the case of industrial transformations, the practices of the new transformative production models and business strategies represent these solutions.

Figure 1.1 The causal argument



In the studied cases, Vatican II Catholic social doctrine and Sandinismo drove and generally guided the industrial transformations of the Apostles and Brigadistas. But these top firm decision-makers' moral-practical mindsets played a crucial intervening role (see Figure 12). As Chapter Three describes, in Guatemala the Apostles of Development shared a strongly hierarchical interpretation of Vatican II Catholic social doctrine, "Elite Solidarism." This interpretation appealed to the privileged members of society, calling upon them to unilaterally pursue social transformations conducive to the common good. In addition, all the Apostles of Development obtained mechanical and agronomist engineering degrees. Their professional background focused their attention on agro-business endeavors and provided a necessary body of knowledge and set of skills. The merger of their Elite Solidarism interpretation and engineering background created a moral-practical mindset among the Apostles of Development that I call the technocratic approach to Elite Solidarism.

Similarly, as Chapter Four details, in north central Nicaragua the Cooperative Brigadistas adopted a distinct interpretation of Sandinismo, "Cooperative Developmentalism." This interpretation most generally supported the creation of a revolutionary society founded on a mixed economy with widespread cooperative participation and a thriving and increasingly industrialized rural economy. In addition, the Brigadistas shared a background in consulting. Like the Apostles' engineering background, the Brigadistas' consulting background turned their attention to the problems of business and supplied a body of knowledge and tools to address them. I call the Brigadistas' moral-practical mindset, combining their distinct ideological interpretation and professional background, the best practice approach to Cooperative Developmentalism.

Figure 1.2 The causal chains in the studied cases



In both cases, the moral-practical mindsets decisively intervened in the process of translation from ideology to the transformative action. In Guatemala, the Apostles of Development pursued the transformation of the sugar mills in a strongly hierarchical manner. They unilaterally introduced and then actively diffused organizational innovations that furthered their relatively narrow understanding of the common good. In a strongly conservative industry, they significantly improved the material conditions of most workers while simultaneously centralizing control of production in management. Despite the inhospitable conditions of war and economic recession that prevailed in Guatemala at the time, they trained workers extensively and provided them with new tools and equipment. They also implemented a Taylorist system of production on plantations, and diversified their product range. Refusing to succumb to the world sugar industry's deteriorating conditions, the Apostles aggressively targeted new export markets. In addition, they overcame the entrenched antagonistic relations of the industry by promoting the diffusion of their practices to other mills with missionary zeal. Their patterns of action and the characteristics of the industrial transformation they engendered denote the driving force of Vatican II Catholic social doctrine, and the intervening role of the technocratic approach to Elite Solidarism.

In a comparable fashion, in Nicaragua Sandinismo inspired the transformative efforts of the Cooperative Brigadistas. The best practice approach to Cooperative Developmentalism conditioned their patterns of action and the outcome of their

undertakings. Working closely with small- and medium-sized ranchers, the Brigadistas fostered joint work and the creation of cooperatives in a region known for its individualistic tradition. They introduced vast raw milk collection networks, building roads and cooling stations. Defying their impoverished environment, they erected cheese processing plants, importing sophisticated processing equipment and training workers extensively. The new plants allowed these isolated small- and medium-sized ranchers to produce cheeses for domestic and export sale. The Brigadistas concluded their campaigns of industrial transformation by promoting diffusion of their new model and strategy among other ranchers organized in associations. Mirroring the experience in Guatemala, their actions and the industrial transformation they brought about evince the explanatory role of Sandinismo and the intervening best practice approach to Cooperative Developmentalism moral-practical mindset.

A note on methods and design

I designed this project to generate and evaluate a new explanation for agro-industrial transformations. The objective was to address the central drawback of the prevalent theories and construct an alternative, complementary account. I began by studying the transformation of Guatemala's sugar mills, treating them as a hypothesis-generating deviant, or outlier, case. The case illustrated the "unlikely scenario": the transformation unfolded in an inhospitable context in which most comparable industries (i.e. "shadow" cases) in Guatemala and the region failed to transform their organizational models (see Table 1.2). Comparisons with these shadow cases address alternative country- and industry-specific explanations, ranging from state policy to changing market conditions, for industrial transformation. As a complement to these theories, the study generated an explanation focused on ideology, and shed light on the causal chain linking ideology to the organizational changes of industrial transformations.

Table 1.2 Shadow cases for the Guatemalan sugar mill case

Within country comparisons	Within industry comparisons
Coffee and cotton agro-industries in Guatemala	Sugar agro-industries in El Salvador, Nicaragua, Dominican Republic, Barbados

I then replicated this ideational explanation and its associated causal chain through a second case study in the Nicaraguan cheese industry. I focused on the remarkable organizational changes of the cheese processing rancher cooperatives. Like the Guatemalan sugar mills, the Nicaraguan cheese processing cooperatives represented outliers and illustrated the unlikely scenario. And as in Guatemala, I drew comparisons with other producers to address alternative explanations (see Table 1.3). Through this second case, I corroborated and refined the ideational account for industrial transformation.

Table 1.3 Shadow cases for the Nicaraguan cheese processing cooperative case

Within country comparisons	Within industry comparisons
Salvadorian and artisanal cheese processors in Nicaragua	Cheese agro-industries in El Salvador, Honduras

To collect the evidence that informs Chapters Three and Four, I relied primarily upon the insights afforded by process tracing. As George and Bennett (2005) explain, process tracing is “the only observational means of moving beyond covariation alone as a source of causal influence.” It is ideally suited for “how” questions, focusing on sequential processes within a particular historical case. It unwraps and divides into smaller steps the cause-effect sequence connecting independent and dependent variables. This allows the researcher to look for evidence at each step (Mahoney, 2010; Van Evra, 1997).

Through process tracing, I addressed the question of how the Guatemalan sugar mills and Nicaraguan cheese processing cooperatives accomplished their industrial

transformations. Fieldwork involved over 100 in-depth interviews.⁷ It also entailed intensive archival research in government, university and industry offices, field visits to production sites and content analysis of industry-related material.⁸ While I initially focused on evaluating the prevalent explanations for industrial transformation, as the role of ideology became clear, I shifted the emphasis to the mechanism through which this variable explained the transformation. Using the abundant material collected, I developed narratives of the experiences of key studied firms and the lives of their top firm decision-makers. Relying upon these narratives, I traced the pathways through which the Apostles of Development and Cooperative Brigadistas, guided by the principles of Vatican II Catholic social doctrine and Sandinismo, respectively, devised and diffused the transformative models and strategies in Nicaragua and Guatemala. The narratives revealed the crucial intervening role of moral-practical mindsets in shaping their actions.

Within case comparisons complemented process tracing by highlighting the consequences of the actions of the Apostles and Brigadistas. In the early stages of the studied agro-industrial transformations, comparisons with the rest of the agro-industries' firms in Guatemala and Nicaragua highlighted the remarkable organizational changes at the Apostles' and Brigadistas' original firms. The differences between their firms and the rest evinced the consequences of their actions. In later stages of the process of change, comparisons corroborated the diffusion of the new production models and business strategies across the two industries.

Plan of the dissertation

The development of the argument of this dissertation begins with a discussion of its main theoretical contributions in Chapter Two. This chapter opens by describing in further detail the main theories of industrial transformation and their central

⁷ See Appendices 1 and 2 for the types of interviewees, and a sample of the questionnaires.

⁸ See Appendix 3 for a list of visited offices and production sites.

drawbacks, focusing on their simplified understanding of firms. Then, it presents the proposed explanation for industrial transformation. The explanation focuses on the explanatory role of ideology and the intervening role of moral-practical mindsets in driving firm changes. The chapter then moves to a discussion of how ideology explains industrial transformations. It specifies how they foster the creation (i.e. neomorphism) and diffusion (i.e. isomorphism) of transformative new models and strategies.

Chapter Three illustrates the proposed theory through the case of the Guatemalan sugar mills and the Apostles of Development. After contrasting the new models and strategies of these mills with their competing pre-transformation approach, the chapter traces the transformative mission of the Apostles. It reviews the main principles of Vatican II Catholic social doctrine and describes the Apostles' technocratic approach to Elite Solidarism. This moral-practical mindset combines their Elite Solidarism interpretation with their engineering professional background. The chapter then turns to a description of the industrial transformation. It depicts the processes of neomorphism and isomorphism in the case. In chronicling these processes and describing the innovations, the chapter highlights the crucial explanatory role of the Apostles' ideology and moral-practical mindset.

Chapter Four turns to the case of the Nicaraguan cheese processing rancher cooperatives and the Cooperative Brigadistas. Like Chapter Three, it begins with an overview of the cooperatives' new production model and business strategy, contrasting it with the approach of competing dairy firms prevalent in north central Nicaragua. Then it discusses the Cooperative Brigadistas' campaign to transform the cheese industry. It describes the main principles of Sandinismo and the Cooperative Brigadistas' best practice approach to Cooperative Developmentalism. This moral-practical mindset combines the Cooperative Developmentalism interpretation of Sandinismo with the Brigadistas' consulting background. The chapter then turns to the industrial transformations. It recounts the processes of neomorphism and

isomorphism in cooperative processing plants. In this explanation, it pays particular attention to the role of the Brigadistas' ideology and moral-practical mindset.

The Conclusion reviews the contributions of this dissertation toward ongoing debates on industrial transformation. It restates the prevalent theories, their drawbacks and the proposed explanation. Then, it explores possible points of interaction and complementarity between established theories and the ideational approach. Though the proposed account is induced from two sets of firms operating in the "unlikely scenario," this discussion probes its possible implications for the "divergence scenario" to explore those interactions.