



The Dynamics of Standardization: Three Perspectives on Standards in Organization Studies

Organization Studies
33(5-6) 613-632
© The Author(s) 2012
Reprints and permission:
sagepub.co.uk/journalsPermissions.nav
DOI: 10.1177/0170840612450120
www.egosnet.org/os


Nils Brunsson

Uppsala University, Sweden

Andreas Rasche

University of Warwick, United Kingdom

David Seidl

University of Zurich, Switzerland

Abstract

This paper suggests that when the phenomenon of standards and standardization is examined from the perspective of organization studies, three aspects stand out: the standardization of organizations, standardization by organizations and standardization as (a form of) organization. Following a comprehensive overview of existing research in these three areas, we argue that the dynamic aspects of standardization are under-represented in the scholarly discourse. Furthermore, we identify the main types of tension associated with standardization and the dynamics they generate in each of those three areas, and show that, while standards and standardization are typically associated with stability and sameness, they are essentially a dynamic phenomenon. The paper highlights the contributions of this special issue to the topic of standards as a dynamic phenomenon in organization studies and makes suggestions for future research.

Keywords

dynamics of standards, governance, regulation, soft law, standardization, standardizers, standards

Introduction

Standards are ubiquitous in almost all aspects of modern life: they range from standards in information and communication technology that ensure the interoperability of diverse components (David & Greenstein, 1990) to standards for the quality of products or services (Beck & Walgenbach, 2005), and underlie areas ranging from the harmonization of international accounting systems

Corresponding author:

Nils Brunsson, Department of Business Studies, Uppsala University, Box 513, SE-751 20 Uppsala, Sweden
Email: nils.brunsson@fek.uu.se

(Botzem & Quack, 2006) to the governance of the social and environmental performance of firms (Gilbert, Rasche, & Waddock, 2011). Despite the ubiquity, long history and impact of standards on society, related scholarly work in organization studies only started to emerge in the last fifteen years or so (see, e.g., Brunsson & Jacobsson, 2000a; Büthe & Mattli, 2011b; Heras-Saizarbitoria & Boiral, 2012). In view of that, this paper aims to advance the debate on standards and standardization in the context of organization studies.

A brief look at the history of standards will illuminate its relevance to organization studies. Around the turn of the 20th century, a great number of national standardization organizations were founded, including organizations that are nowadays known as the British Standards Institution (BSI) and the American National Standards Institute (ANSI) (Russell, 2005). Their purpose was to create sets of rules for the design of industrial products so that firms could produce goods that were comparable in their key aspects. The standardization of products and services increased considerably in the course of the 20th century and was intensified towards its end in newly deregulated industries such as telecommunications (Langlois, 2002). In the second half of that century, great emphasis was put on international standards. The International Organization for Standardization (ISO), which was founded in 1947, operates a large portfolio of standards and has been particularly successful in standardizing processes of quality management (ISO 9001), environmental systems (ISO 14001), risk management (ISO 31000) and, recently, also social responsibility (ISO 26000). These highly successful initiatives by ISO have had an impact on two key elements of organizations: organizational structures and administrative procedures. Also a number of civil society organizations have more recently appeared as standardization organizations; examples include Fairtrade International (Casula Vifell & Thedvall, 2012), which sets standards for a wide array of products, and the Forest Stewardship Council (Boström, 2006), which sets standards for sustainable forestry all over the world.

The pertinence of standards to many aspects of business and non-business life, as well as the multidisciplinary nature of standardization, makes them an essential and highly interesting object of analysis. Standardization allows scholars to import into organization studies insights from economics (Blind, 2004), sociology (Timmermans & Epstein, 2010), political science (Kerwer, 2005), (information) technology (Jakobs, 2006), history (Russell, 2005) and law (Karmel & Kelly, 2009). For instance, looking at how formalization and quantification – two prominent topics in sociological analysis (Espeland & Stevens, 1998) – are part and parcel of certain adoption processes sheds light on how standards influence organizational practices. The discussion of standards in the disciplines listed above reveals the great variety of relevant empirical phenomena and theoretical frameworks, most of which have not been sufficiently exploited within organization studies. This wide range of perspectives often leads to the impression that the phenomenon of standards is fuzzy and hard to grasp. As a result, the relevance of standardization to organization analysis is often overlooked.

We suggest that, from the perspective of organization studies, three aspects of standards and standardization stand out. First, the standardization *of* organizations relates to how standards are adopted, diffused, implemented, avoided and altered in the course of their implementation. Second, standardization *by* organizations concerns the fact that most standards are the product of formal organizations. Last but not least, standardization can be viewed *as* a form of organization. In the latter context, standards provide organization outside of formal organizations and hence can be perceived as an important governance mechanism underlying many aspects of contemporary society. While research on these three perspectives has shed light on standards and standardization, we argue that it has yet to explore thoroughly the essentially dynamic character of standardization. Standards and standardization are typically associated with stability and sameness; in this paper, however, we suggest that they are essentially dynamic phenomena, whose study with relation to each of the three aspects mentioned above gives rise to important research questions.

This paper proceeds as follows: in the next section we define standardization, distinguish between different types of standards, and discuss their key elements. In the following section we review the literature on standards in organization studies, distinguishing between works on the standardization *of* organizations, standardization *by* organizations and standardization *as* organization. In the third section we argue that, to gain a better understanding of standardization, it is necessary to study the dynamic aspects of the phenomenon. In the process, we highlight a number of significant tensions that are associated with standardization and the dynamics they generate. In the conclusion we reflect on the role of standardization research in organization studies.

Standardizing Standards: The Struggle Around Definition

Defining Standards

The term 'standard' may refer to many different things and each of the several definitions of standards that are available highlights different characteristics. This reflects the fact that standards apply to a wide variety of domains, ranging from paper size to interface technologies in telecommunication networks. Admittedly, the varied use of the term 'standard' may be confusing. In our view it is not useful to subsume all potential senses of that term under a single definition, as each sense corresponds to different aspects of practice and theory. Below we highlight three defining characteristics of standards that are essential from the perspective of organization studies.

First, a standard can be defined as a *specific type of rule* (see, e.g., Blind, 2004, p. 65). Characteristically, ISO defines a standard as:

[a] document, established by consensus, and approved by a recognised body, that provides for common and repeated use, rules, guidelines, or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context. (International Organization for Standardization, 2001, p. 9)

Standards reflect explicitly formulated and explicitly decided rules and thus differ from more implicit social norms. The rule-based character of standards makes them important tools for regulating individual as well as collective behaviour and achieving social order (Kerwer, 2005; Seidl, 2007).

Second, standards are formally *voluntary* for potential adopters in that they are not stipulated by the hierarchical authority of states or other organizations. Standardizers either have no access to or do not want to use any such authority to enforce the adoption of a standard. The decision to comply or not is left to potential adopters. Thus, the regulative capacity of standards does not rest on the authority of a sovereign state but on their perceived legitimacy and relevance or, in some cases, on the pressure exerted by third parties (Bernstein & Cashore, 2007; Bütte & Mattli, 2011b). Although flouting a standard does not carry legal sanctions, some standards are so widespread that non-compliance can carry other sanctions. Apart from standardizers, third parties that have some power over adopters may force the latter to comply with specific standards. For instance, certain powerful corporations will only do business with suppliers that comply with ISO 9001 (Guler, Guillen, & Macpherson, 2002). Moreover, organizations that adopt specific standards may make their contents part of binding rules, making compliance within the organization mandatory. Furthermore, some standards are so widely adopted that not complying with them on a voluntary basis can make it impossible to act as a seller or buyer on relevant markets (e.g. because sending credible market signals requires adoption; King, Lenox, & Terlaak, 2005). Other standards are tied to certification and monitoring mechanisms aimed at preventing the decoupling of commitment and implementation (Terlaak, 2007).

Third, the rules expressed by standards are meant for *common use* (Rasche, 2010b). As emphasized by Brunsson and Jacobsson (2000a, p. 2), ‘standardizers ... provide rules for the many. ... They offer standards – which could be described as pieces of general advice offered to a large number of potential adopters’. Although groups of organizations, such as industry consortia, occasionally set standards exclusively for their own activities, most standards are mainly intended for broader use, outside the standardization organizations. In this sense, standards define normative rules. They prescribe what those who adopt these rules should do and hence enable and restrict behaviour (Ortmann, 2010).

On the basis of these three key characteristics, standards can be defined as follows:

A standard can be defined as a rule for common and voluntary use, decided by one or several people or organizations.

This definition is narrower than a definition that would include everything that is called a standard in practice. It excludes what are sometimes called standards but are developed within an organization for its own use only (Weber, 1964) as well as so-called *de facto* standards (Ortmann, 2010). Nevertheless, our definition encompasses rules for good management, which are often called ‘management recipes’ or ‘fashions’ (Holmblad Brunsson, 2008; Kieser, 1997). Such standards are produced by organizations other than standardization organizations but may compete with the standards of the latter.

Types of Standards

Standards have been categorized on the basis of several distinctions. One distinction has been made between *technical* and *non-technical* standards. Technical standards, also known as ‘compatibility’ or ‘interface’ standards (David & Greenstein, 1990), are defined as ‘codified specifications about components and their relational attributes’ (Garud & Kumaraswamy, 1993, p. 353). Such standards usually aim to ensure compatibility and interoperability among the components of a technological system (Tushman & Rosenkopf, 1992; Weitzel, Beimborn, & König, 2006). The literature on technical standards highlights various mechanisms through which such standards become dominant, such as the existence of switching costs (Greenstein, 1997) and the presence of network externalities (Katz & Shapiro, 1986). The underlying assumption is that the coexistence of multiple technical standards is counterproductive, so eventually a single standard prevails (for a critical discussion see Genschel, 1997). On the whole, technical standards affect technological developments by reducing variety or diversity (e.g. of products) and thus limiting the choices available to consumers (Blind, 2004). By contrast, the literature on non-technical standards highlights the fragmented nature of standard-setting, which results in the coexistence of multiple standards (Reinecke, Manning, & von Hagen, 2012). Non-technical standards are encountered in a variety of different domains, such as quality control (Guler et al., 2002), social and environmental management (Gilbert & Rasche, 2008), financial and non-financial reporting (Etzion & Ferraro, 2010) and securities regulation (Karmel & Kelly, 2009).

Another distinction can be made between *process* and *outcome* standards. Some standards regulate processes within and between organizations (e.g. safety processes) without predetermining any specific outcomes. For example, ISO 9001 does not measure directly the quality of products or services, but specifies management processes that are supposed to ensure superior quality. The requirements of other standards stipulate that adopters have to deliver a specific outcome (Werner & Katz, 1976). These standards require the existence of clearly identifiable and measurable

outcomes (Power, 1997). Developing such standards is sometimes seen as preferable to coping with the increasing complexity and dynamic nature of organizations and their environments, as they give sufficient scope to adopters to decide what measures are necessary for achieving the specified outcomes (Black, Hopper, & Band, 2007; Hess, 2007). Nevertheless, the effects of standardized processes are often uncertain, largely because the mere existence of a standardized process does not inevitably lead to the desired consequences. For that reason, process standards are increasingly linked to outcomes (Banta, 1992), which blurs the distinction between the two types.

The literature also distinguishes between *de jure* and *de facto* standards (Farrell & Saloner, 1988; Funk, 2002). *De jure* standards are the product of a deliberately steered process of decision-making. Committees are often regarded as the organizational entities responsible for deciding on *de jure* standards (e.g. as in the case of ISO standards). While Farrell and Saloner (1988) argue that standardization that is committee-based rather than market-based is more likely to achieve coordination, largely because it avoids incompatibility, other studies have shown that the internal politics of committees, which are often closely linked to vested interests, can undercut the legitimacy of standards and slow down their development (Cargill & Bolin, 2007; Simcoe, 2007). By contrast, the concept of *de facto* standards refers to processes that lead to uniformity, in the sense that all or nearly all potential adopters eventually come to adopt the same solution and turn it into a model (or *de facto* standard) that it is difficult to deviate from. A much-discussed example is the QWERTY layout for typewriters (David, 1985). These processes are fundamentally different from the decision-making processes that produce (*de jure*) standards. While we acknowledge that *de facto* and *de jure* standards both may produce uniformity (Brunsson, 2000), here we focus on the origin of standards as decided rules, rather than various ways of producing uniformity, and therefore exclude *de facto* standards from our theoretical treatment. Admittedly, the distinction between *de facto* and *de jure* standards is not always clear-cut. A standard can become institutionalized and taken for granted to the degree that the initial decision is forgotten, so 'newcomers' perceive the standard rather as a model set by its adopters (a *de facto* standard) than as a decision once made by some standardization organization.

Standards in Organization Studies: Three Perspectives

As mentioned earlier, we discern three ways in which standardization and organizations are related. First, standards affect the structure and operation *of* formal organizations; second, standards are produced *by* formal organizations; third, standardization can be seen *as* a form of organization outside and among formal organizations.

Standardization of Organizations

Scholarly interest in how standards affect organizations rose during the 1980s and 1990s, in tandem with the rising interest in the so-called institutional environments of organizations. In the context of the latter tradition, standards can be seen as rules that are created in the 'environment' of the individual organization that the organization is expected to 'adopt', and so standards can be seen as 'diffusing' among organizations.

A first question is why standards are adopted at all by organizations, given that no legal sanctions are imposed on non-adopters. Institutional theorists have traditionally highlighted the role of coercive, normative and mimetic isomorphic pressures in the adoption and diffusion of standards (DiMaggio & Powell, 1983). Coercive pressures can come from the state (e.g. when EU directives are expected to be translated into more detailed standards by member states), civil society

organizations (e.g. when NGOs put pressure on firms to comply with social and environmental standards), or from other businesses (e.g. through the preferential treatment of standard adopters). Guler et al. (2002), for instance, have found that the presence of foreign multinationals in a country increases the number of ISO 9001 certified firms because multinationals prefer certified suppliers, while Delmas and Montiel (2008) demonstrated that higher levels of civil society activism in a particular country increase the adoption rate of ISO 14001 by chemical firms. The effect of normative pressures on the adoption of standards has been highlighted particularly in the context of professions that share a common knowledge base. In cases where the formal training requirements for a profession are specified by standards, for instance, professionalization can act as a source of normative pressure (see Ping, 2007, for a discussion in the context of accounting). Finally, mimetic pressures can increase the adoption of standards because organizations often model themselves on other organizations. Westphal, Gulati and Shortell (1997), for instance, have shown that, of the companies that adopted TQM, many complied with already institutionalized expectations in order to achieve legitimacy.

Moving beyond institutional theory, some scholars have put forward functionalist arguments to support the idea that standards are adopted for economic reasons or to improve efficiency. Adopters, they suggest, often comply with a standard because it is linked with positive network externalities (e.g. consumer benefits related to a standardized product; Katz & Shapiro, 1986). Network externalities occur whenever the value of a product or service increases with the number of users; for instance, the usefulness of standards for computer operating systems increases with the number of users, because developers are induced to produce a broader range of compatible software. Other scholars have argued that the adoption of standards is positively associated with higher levels of operational performance. For instance, compliance with Social Accountability (SA) 8000, a standard for workplace conditions, has been found to increase worker motivation and decrease staff turnover (Stigzelius & Mark-Herbert, 2009), while the adoption of the quality management standard ISO 9001 has been related to fewer defects and reworks and higher performance levels (Nair & Prajogo, 2009). Both institutional and functionalist explanations for the adoption of standards are integrated in Tolbert and Zucker's (1983) two-stage model, which suggests that early adopters are motivated by gains in efficiency, while late adopters tend to comply with an institutionalized practice in order to appear legitimate. According to this line of argumentation, the adoption of a standard is a function of its degree of institutionalization.

The standardization of organizations has also been discussed in the context of decoupling management decisions to comply with standards from actual organizational practices. Research has shown that decoupling occurs when environmental expectations conflict with internal managerial interests and available resources (Meyer & Rowan, 1977; Oliver, 1991). Decoupling seems particularly likely in cases where firms have a great need for legitimacy but limited internal implementation capacity. Standards in the field of corporate social responsibility (CSR) seem to be a case in point. Jamali (2010), for instance, found that managers consider such standards to offer a high degree of legitimacy to their organizations, but are concerned that their implementation might reduce efficiency. In a comparable study, Christmann and Taylor (2006) show that ISO 14001 is more likely to be symbolically implemented if external pressure from customers is high but monitoring practices are weak. Although research has identified a variety of potential reasons for decoupling (e.g. a standard's clarity; see Walgenbach, 2001), there is only a limited amount of relevant empirical evidence.

Standardization by Organizations

Another reason why standardization is relevant to organization studies is that most standards are produced by formal organizations. We have been using the term ‘standardizer’ (or ‘standardization organization’) to describe those entities that produce, revise and diffuse standards. Scholars have drawn on the vast knowledge on formal organizations in general in order to understand how standardization organizations arise and operate, although there are, of course, certain features that are peculiar to this type of organization (see, e.g., Botzem & Quack, 2006; Sahlin-Andersson, 2000; Simcoe, 2012).

Traditional standardization organizations have been designed as associations whose members represent firms, industry associations, civil society or states (Farrell & Saloner, 1988). The members are mainly adopters but may include other organizations or individuals that have ideological or economic interests in the respective standards or possess special expertise. For instance, ISO standards are developed and revised by technical committees consisting of different expert working groups (Tamm Hallström, 2004). The members typically have equal rights to influence the development of a standard. Decisions are usually made through member voting or similar procedures. Nevertheless, there are also standardizers with a narrow member base (e.g. standard-setting by industry consortia; see Leiponen, 2008) or with no formal member base, as it is often the case with management recipes (Holmblad Brunsson, 2008) and standard-setting in transnational corporate law (Quack, 2007).

Standardization organizations face the challenge of endowing the rules they develop with legitimacy, especially since they do not possess any legal authority. Without legitimacy would-be adopters are unlikely to follow a standard. One way to achieve legitimacy is to try to include different stakeholders and encourage consensus among them while developing a standard (Boström, 2006; Fransen & Kolk, 2007). Of course, consensus is often difficult to achieve because members have different interests or opinions on what the ‘right’ standard should be. To resolve conflicts, standardizers commonly refer to expert knowledge (Jacobsson, 2000; Jakobs, 2002). Experts may come from different domains (e.g. standard users, scientists and consultants) and their insights usually become incorporated in the decontextualized rules that make up the respective standard. Although there is no guarantee that this approach will resolve conflicts, experts are seen as rationalizing agents who lend legitimacy and authority to the content of a standard (Simcoe, 2012).

Nevertheless, involving experts in the development of standards also entails a variety of risks and problems. Occasionally, experts may be included only for symbolic reasons. Also, while they may be formally consulted, their recommendations may have little or no influence on the decision-making process (Feldman & March, 1981). Often, the necessity of legitimizing a standard is perceived as more important than designing the standard in line with expert opinion. The degree of inclusiveness and strategic choice of experts reflects another problem area, especially when the actor category is very broad and offers a wide choice of potential experts. The selection of experts can predetermine standard content, as it influences the provision and framing of information. Boström and Tamm Hallström (2010), for instance, discussed how differences in the material resources of NGOs (e.g. travel budgets) limit their participation in transnational processes of standard development and thus influence the content of the resulting standards. The development of standards is often a political and conflict-laden process in which some experts are not given sufficient voice (Gilbert & Rasche, 2007; Tamm Hallström, 2008, 2010). On the whole, frequent and lasting interactions among a group of experts tend to create trustful relationships and promote common values (Isaak, 2006). However, while social capital enhances coordination within the

process of standard-setting, it can also undermine the role of expert knowledge if standards are shaped on the basis of personal favours and friendships.

Standardization as Organization

On the societal level, standardization can be seen as a way of organizing society. Indeed, standards have become part and parcel of the organization of contemporary society, not least on a global scale. Rules are fundamental instruments of organization that can be applied not only within but also outside and among formal organizations. There were three reasons for the creation of national standards: the observed need for organization not only within but also among firms, the acknowledgement that common rules are powerful instruments of organization, and the realization that some rules are of little political interest and can therefore be delegated from state authorities to the industry (Russell, 2005). With relation to organization studies, this perspective is important because it presents standards as a particular form of organizing, which has been referred to as 'partial organization' (Ahme & Brunsson, 2011). The concept of 'partial organization' refers to the fact that standardization contains one element of formal organizations, i.e. the use of rules – hence the term 'organization' – but lacks other elements, such as the existence of hierarchical authority – hence the term 'partial'. Research has emphasized the nature of standards as partial organization in various ways.

As some scholars have pointed out, standards are an important means of organizing markets. Often states encourage standard-setting in order to reduce information asymmetries between buyers and sellers (Akerlof, 1970). Moreover, standards enable firms to benchmark their products and services and to signal the achievement of certain basic requirements to customers. This can help a firm reduce customer uncertainty and transaction costs, motivate repeated purchase behaviour, and expand its overall market size (Büthe & Mattli, 2011a). The proliferation of product standards in the context of sustainable forestry, floriculture and textile production are cases in point (Gilbert et al., 2011). These standards have created reasonably credible market signals and allowed niche markets to expand. Standards contribute to the organization of markets by promoting compatibility and harmonization among the otherwise incongruous components of a system. In this case, standards align the interests of and enhance communication among a variety of markets actors (e.g. competitors). Studies on telecommunication standards, for instance, have shown that different actors align their positions over time to ensure the interoperability of components and thus create new technological solutions and markets (Genschel, 1997; Leiponen, 2008). In the case of international accounting, standards have been employed as a means of generating some degree of harmonization, an important condition for the functioning of global financial markets (Botzem & Quack, 2006).

Standards are also instrumental in organizing institutional change, as they are a powerful tool for challenging and altering institutionalized behaviour and identities. The standardization that has arisen from social movements is a case in point. For instance, in the global coffee industry many stakeholders strove to stimulate the creation of several standards for the sustainable sourcing of coffee (Kolk, 2005). These standards challenged the existing sourcing practices of multinational corporations (MNCs) by emphasizing the importance of social and environmental criteria. Standards supported the institutionalization of these criteria by defining rules that became commonly accepted and were combined with related monitoring and certification systems. In this sense, standard-setters can be described as 'institutional entrepreneurs' (DiMaggio, 1988). Standards are well suited to supporting institutional change because they facilitate mimetic pressures for isomorphism. The decontextualized nature of the rules that standards represent enables imitation and diffusion; imitators do not need to explore the details of an existing or emerging institutional order, but only to act in accordance with the requirements of a standard. What is important in this context is that

standards often rely on commensuration – that is, on the translation of qualities that are hard to grasp and contextualized into decontextualized codified quantities (Espeland & Stevens, 1998).

Standards are particularly important in the context of international regulation. Because most state legislation remains bound to a national territory, standards are often the only type of rule that can be applied internationally, especially where there are no common cultural elements to serve as a basis of regulating mechanisms (Ahrne & Brunsson, 2006; Djelic & Sahlin-Andersson, 2006). Standards have emerged particularly in those areas where intergovernmental regulation is weak or non-existent but there are significant global governance challenges. Examples include carbon emissions (Kolk, Levy, & Pinkse, 2008), human and labour rights (Clapham, 2006), telecommunication (Leiponen, 2008), corporate governance (Seidl, 2007), non-financial reporting (Etzion & Ferraro, 2010) and marine fishing rights (Gulbrandsen, 2012). Furthermore, the high demand for international standards is a response to the view that divergent national standards are often seen as counterproductive and as an obstacle to global economic integration (e.g. by acting as non-tariff barriers to trade). Standardization accounts to a large extent for the global order that has been achieved in some areas, although the fact that subscribing to standards is voluntary often limits their implementation in some countries or regions.

The Dynamics of Standards: New Research Directions Within the Three Perspectives

While standards and standardization are typically associated with notions of stability, lately researchers have taken a particular interest in the various dynamics involved in the processes of standardization. Applying the three perspectives introduced above, we can distinguish between the dynamics pertaining to the adoption of standards by individual organizations (e.g. Boiral, 2007; Brunsson & Jacobsson, 2000b), the dynamics of the production, revision, promotion and distribution of standards by standardization organizations (e.g. Botzem & Quack, 2006; Egyedi & Blind, 2008; Tamm Hallström, 2004; Tamm Hallström & Boström, 2010), and the dynamics of societal regulation by means of standards (e.g. Quack, 2007; Seidl, 2007).

A key characteristic of standards is that they are neither norms nor tied to hierarchical authority (Brunsson & Jacobsson, 2000a). This peculiarity means that the dynamics of standardization differ from those that relate to other types of rules. This gives rise to intriguing questions, some of which are discussed in this issue. In the following three sections we describe in more detail the particular dynamics associated with each of the three perspectives introduced above. In each section we point out the types of tension that are associated with standardization and the dynamics they generate.

Dynamics Related to the Standardization of Organizations

Standards are by definition ‘rules for the many’. As such, they are necessarily abstract to some degree and general in scope, and cannot cater to the idiosyncrasies of the organizations to which they apply (Thévenot, 2009; Timmermans & Epstein, 2010). The dynamics inherent in the adoption of standards result from the process through which those general rules become applied to specific organizations – or ‘translated’ into localized rules. Because this process may involve overcoming potential discrepancies, which in their turn may produce tension between the general nature of the standard and the specifics of the organization to which it applies, the question that arises is whether a standard should be adapted to the local context or whether the local context should be changed to fit the standard. Such processes are characterized by what has been described as the dynamics of ‘adjustment’ and ‘translation’ (Czarniawska & Sevón, 1996; Zbaracki, 1998). As Brunsson and

Jacobsson point out (2000b: 128), this is a two-way 'translation' process, during which general standards become 'translated' into concrete practices and concrete practices are translated back into the general categories underlying the standard in order to demonstrate to observers such as politicians, customers or auditors that the adopter follows the standard.

A second source of tension is that, while adopting a standard is voluntary, third parties may put pressure on adopters to ensure compliance. This kind of pressure arises particularly when a standard has become so institutionalized that its adoption is taken for granted (Etzion & Ferraro, 2010). Other sources of similar pressure include the need for an organization to coordinate its practices with those of other organizations (Guler et al., 2002), or the perception by an organization's own employees or by external stakeholders that a standard designed by experts must be superior to an organization's own rules (Seidl, 2007). To the extent that organizations are dependent on such third parties, compliance to standards becomes practically necessary. When organizations show reluctance to apply a standard or its application proves complicated for any of the reasons described above, the tension between the theoretically voluntary but practically binding adoption of a standard often produces dynamics of decoupling between talk and action. In such cases, instead of changing its practices, an organization represents them so that they *appear* to be in line with a particular standard. Thus, although the description accords with the standard, those practices are continued as before. In other words, the adopter 'standardizes its practice but does not practice the standard' (Brunsson & Jacobsson, 2000b: 128). The dynamics of this kind of decoupling can take different forms and may have negative effects – for instance, on the morale of the organization's members (MacLean & Behnam, 2010). The form and degree of decoupling may change over time, however, and ultimately even result in the 'recoupling' of the initially decoupled domains (Hallett, 2010; Tilcsik, 2010).

Two papers in this special issue are particularly concerned with the dynamics of the adoption of standards. Both describe the internal dynamics of decoupling between implementation and external presentation, taking the example of the ISO 9000 family of standards, which concern quality management practices. The first one is a paper by Boiral (2012; 'ISO certificates as organizational degrees?'), who examines the dynamics involved in the respective audit and certification process, during which an external auditor assesses and, if satisfied, certifies the implementation of the ISO 9000 rules. Boiral describes the dynamics of this process in terms of different stages in the audit and certification process, which he compares to the process of preparing for and passing university exams, pointing out that the students tend 'to be more interested in acquiring a diploma than in the learning that it represents' (Brotheridge & Lee, 2005, p. 71). He shows that, similarly to exams, the audit and certification process is characterized by rote preparation, procrastination, short-term focus and cheating, while the primary goal is to get the ISO certificate in order to be able to present it to external parties.

The second paper is a study by Sandholtz (2012; 'Standards, directives, and occupational norms') which examines the dynamics of the conflict between an organization's own rules and those specified by ISO 9000. The author describes the adoption of a standard as a dynamic process that involves crossing two boundaries: (1) the boundary between the institutional field and the organization; and (2) the boundary between the organization and the affected technical and functional subunit with its particular norms and subculture. At each crossing, the standard is transformed: first, from a standard into a directive and then into the norms and practices of the work group. Comparing the implementation of ISO 9000 at two different divisions of the same company, Sandholtz shows how in each case the process of 'translation' leads to different outcomes with regard to the degree to which the standard corresponds to actual work practices. As his study reveals, where a standard threatens the occupational norms and practices of those expected to implement them, a malignant form of decoupled compliance can be observed; by contrast, if a

standard fits with the norms and practices of the occupational group that the standard primarily affects, a benign form of decoupling is more likely. Tight coupling, however, is likely to result where standards originate *within* the group and incorporate its norms and practices.

Dynamics Related to Standardization by Organizations

With relation to standardization organizations, there are at least two types of tension that generate particular dynamics related to standardization processes. The first type results from the conflict between the efficiency of the standard-setting process and participation in the process. With the proliferation of competing standardization organizations, besides expertise, participation has become one of the main means of establishing legitimacy in the eyes of potential adopters. However, greater participation often reduces the efficiency of the standard-setting process as it becomes more difficult to reach consensus (Tamm Hallström, 2008). Partly because of the need to strike a balance between efficiency and a high degree of participation, standardization organizations vary in form and change their relationship with other organizations over time (Glimstedt, 2001). In order to produce standards quickly, such organizations would have to limit participation in the process of standard-setting to a few parties or parties with similar interests and ideas – in extreme cases, to a single expert. To increase the likelihood of a standard being accepted, however, there are three main reasons why it is often necessary to have broad participation from many parties that the standard concerns: first, this makes it easier to define the standard's content in a way that is acceptable to all; second, participation often involves commitment to adopt the standard; and third, broad participation strengthens the legitimacy of the standard in the eyes of external parties (Tamm Hallström & Boström, 2010). Over time, however, the relative importance of participation and efficiency might change and this could lead to changes in the composition of the participants (Botzem & Dobusch, 2012; van den Ende, van de Kaa, den Uijl, & de Vries, 2012).

A second, related type of tension springs from the potential conflict between the role of participants as experts and as representatives of interest groups. While the participants in standardization organizations typically present themselves as experts who bring their expertise into the development and revision of standards (Jacobsson, 2000), often they also act as representatives of specific interest groups. As such, they may act very differently from the way they would if they were experts only. The various interests that coexist within standard-setting bodies can lead to fierce battles between the representatives of different groups. The dynamics that arise from such clashes may ultimately produce standards that represent a faulty and fragile compromise between the different interest groups, rather than a solution that represents an expert judgement. Another potential complication is that some participants may fight standards that conflict with their interests by suggesting other standards. In such cases, the opponents of standards become standardizers themselves. A common example is that of organizations that are not willing to comply with standards set by others and thus form meta-organizations (e.g. business associations) together with organizations that have similar interests. These meta-organizations then produce their own standards for their members, in the hope that they will be acceptable both to their members and to others concerned. In contrast to earlier times, when only a few national organizations were responsible for the development of standards, now, because of the relatively low barriers to entering the field (Rasche, 2010a), there is a multitude of private and public-private standardizers, which often compete with each other. The dynamics of this competition occasionally may take the form of open conflict and 'standard wars' (Shapiro & Varian, 1999) or of mutual adjustments that allow for peaceful coexistence (Reinecke et al., 2012).

Three papers in this special issue focus on the dynamics of standard-setting organizations. The first one is a paper by Dokko, Nigam and Rosenkopf (2012; 'Keeping steady as she goes'), which

relates to the dilemma between expertise and interests that we described above. According to the negotiated order perspective developed by Strauss (1978), standardization organizations are conceptualized as arenas for the negotiation of social order. The authors argue that, in contrast to what is commonly assumed, negotiations of social order occur not only in times marked by dramatic changes made to standards, but also in times of relative stability. Moreover, the persistence of standards is itself a social accomplishment based on ongoing negotiations. Such negotiation processes are thus both a source of stability for, as well as of potential changes to, existing standards.

The second paper is a study by van den Ende et al. (2012; 'The paradox of standard flexibility'), which also relates to the tension between interests and expertise. Drawing on three case studies, the authors show that who participates in the process of standard-setting affects the standards that are produced, because participants try to shape standards so that they suit their interests. Thus, changes in the combination of participants (in terms of number and diversity) result in changes in the content of the respective standard. Moreover, the authors demonstrate that this effect, which has been previously documented (e.g. Cargill, 1997; Dokko & Rosenkopf, 2010; Leiponen, 2008), also works in the opposite direction: by making changes to the content of a standard, participants can persuade non-participating stakeholders to join the standardization organization and thus increase the chances that these stakeholders might later adopt the standard themselves. The authors describe this as a coevolutionary dynamic between the content of a standard and the network of participating organizations, and identify the different forces that generate or restrict this dynamic.

The third paper, by Botzem and Dobusch (2012; 'Standardization cycles'), also examines the dynamics of standardization organizations that result from the two types of tension described above. Based on two case studies of standardization organizations, they examine the relation between stakeholder participation in the standard-setting process and the potential effectiveness and efficiency of the resulting standards. Stakeholder participation strengthens the perception of standards as legitimate, conferring what they describe as 'input legitimacy', while effectiveness and efficiency strengthen the perception of the regulatory effects of standards as legitimate, conferring what they describe as 'output legitimacy' (Scharpf, 1999). The authors argue that these two aspects of standard-setting are recursively related: initially standardization organizations aim at securing high levels of participation, which serves as the main means of generating input legitimacy for a standard and thus increases the chances of its becoming adopted. Higher levels of adoption mean that more potential users will base their assessment of the standard on its regulatory effectiveness. Thus, over time, output legitimacy is likely to become more important for adoption than input legitimacy. Another interesting point that Botzem and Dobusch make is that there are shifts between the inclusion and exclusion of participants in the standard-setting process over time. This is because high levels of participation complicate the development of effective standards, so standardization organizations are likely to restrict participation once a sufficient level of output legitimacy has been reached.

Dynamics Related to Standardization as Organization

There are two main types of tension related to standards as a form of organizing modern society. The first type concerns the relation between the voluntariness associated with standards and their regulatory function. As many standardizers realize, the voluntary element in the adoption of standards makes them a relatively weak form of organizing, because it entails the risk of them having little practical effect. To offset this weakness, they are often complemented with other elements of organization, such as monitoring, sanctions, hierarchical authority, membership or constitutions (Ahrne & Brunsson, 2011). Monitoring, for instance, is a common addition to standards set by social movements (Fransen & Kolk, 2007). The development of monitoring

standards for workplace conditions in global supply chains, such as SA 8000 (Gilbert & Rasche, 2007), is a case in point.

Standards are often also supplemented with various forms of sanction. For instance, adopters who fail to comply with a standard's requirements may be removed from the list of compliers or become subject to boycotts (Rasche, 2009). Adopters who do comply, by contrast, may be rewarded with so-called 'positive sanctions', such as receiving certification or being allowed to use product labels (Waddock, 2008). The initiative for monitoring or setting up sanctions does not necessarily come from the standardization organizations themselves. Carrying out certification audits is an established and profitable industry, especially since auditing services are often paired with those of external consultancies (Frankel, Johnson, & Nelson, 2002). While auditors themselves believe that they help clients to achieve standard compliance (Power & Terziovski, 2007), some studies have shown that auditors who certify that a client complies with a standard often lack sufficient knowledge about that client's industry (Boiral & Gendron, 2011).

Another way of adding more organization is to attach standards to large formal organizations in the hope that these will make the content of the standards internally compulsory, or to the state, which adds a hierarchical element to the process of adoption. For example, many environmental organizations try to persuade large transnational companies to make their standards part of their policy, or the state to incorporate them into legislation (Gulbrandsen, 2012). International law firms and legal associations that are involved in transnational standard-setting for corporations and market transactions aim to attach specific standards to the hierarchy of states or to international governmental organizations (Quack, 2007).

The paper by Slager, Gond and Moon (2012; 'Standardization as institutional work') in this issue offers several good examples of the dynamics that arise from this type of tension and of the elements that complement standards in order to reinforce their regulatory impact. Taking an institutional work perspective (Lawrence, Suddaby, & Leca, 2009), they study the dynamics of micro-level activities through which standards acquire their regulatory power. Drawing on a longitudinal study of the development of the FTSE4Good index, a responsible investment standard, they show that, because of their voluntary nature, standards need to be accompanied by different types of institutional work, which varies according to the different stages of the standardization process. They also emphasize that this involves many different types of actor and forms of interaction.

The paper by Haack, Schoeneborn and Wickert (2012; 'Talking the talk, moral entrapment, creeping commitment?') in this issue also explores the dynamics resulting from the tension between the voluntariness of standards and their regulatory impact. Like Slager et al., they too examine how different groups develop and maintain the regulatory power of standards. Their empirical case concerns the so-called Equator Principles, a corporate responsibility standard for international project finance, and focuses on the dynamics of interweaving narratives and counter-narratives associated with the standard. It is only through these complementary discursive-ideational processes, they argue, that the regulatory power of voluntary practices of corporate responsibility is asserted.

In the context of organizing by means of standards, a second type of tension arises from the conflict between the freedom to set standards and their potential regulatory impact. Because standards are voluntary, in principle everybody is free to set new standards. However, the existence of multiple equivalent or very closely related standards often undermines their regulatory effect. This is most obvious in the case of compatibility standards, which aim to improve coordination between different parties. Coordination can only be achieved if the different parties involved follow the same standard; often it does not matter which standard they follow, as long as it is the same standard (Farrell & Saloner, 1988).

One problem with this approach is that if there are competing standards, adopters are likely to select the one that is least demanding or fits best with their existing practices (Sunder, 2002). Thus, some organizations may introduce new standards explicitly in order to evade compliance with existing standards (Richardson, 2011). In response, attempts are made to restrict or coordinate the creation of standards by establishing organizations with that purpose. A prime example is the establishment of international standardization organizations which are supposed to add organization by providing a kind of constitution to the field of standardization. By arguing that standardization should only take place within these organizations and conform to certain procedural rules, they try to control the proliferation of standards. Another example of dealing with the freedom to set standards is to add organization in the form of membership; the formation of industry consortia for standard-setting is a case in point (Leiponen, 2008). Industry consortia are comprised of members of a particular industry that join forces to develop standards for themselves: all members of a consortium are expected to comply with the standards formed by the consortium and not with competing ones. A well-known example is the Society for Worldwide Interbank Financial Telecommunication (SWIFT), which is a consortium of banks, brokers, dealers and investment managers that develops compatibility standards for the facilitation of financial transactions between member organizations. All members of SWIFT apply the same standards, ensuring compatibility between their operations.

The paper by Reinecke et al. (2012; 'The emergence of a standards market') in this special issue describes a further way of dealing with the tension between the multiplicity of standards and their regulatory impact. In their empirical study of corporate responsibility standards in the global coffee industry, Reinecke et al. show that, while the different standardizers wish to regulate the coffee industry, they also want to preserve their organizational autonomy and identity. As a result, they are not prepared to withdraw their own standard or to generate a joint standard. The authors show that this can lead to a form of 'meta-standardization' which coordinates their regulatory efforts to some extent. A meta-standard contains some common elements that all similar standards need to incorporate, such as common vocabulary or shared certification platforms, but allows for differentiation on the level of specialized attributes, such as the emphasis that each standard places on environmental aspects or aspects of social sustainability. Thus, by combining collaboration and competition, meta-standards provide a way of preserving some regulatory power of otherwise competing standards.

Conclusion

Over the last few decades, standardization has grown from a topic that was of interest primarily to engineers into a distinctive area of research across many different academic disciplines, and a central area of research in organization studies. In this paper we have suggested that organization(s) and standardization are related in three distinctive ways: first, organizations are affected by standards, in the sense that every area of their activities is potentially or actually regulated by one or many standards. Thus, any researcher studying organizations will almost inevitably have to take into account the effect of standards as a kind of external 'input' into the organization. Second, most standards are produced by organizations. In the context of organization studies, standards can be viewed as particular types of products or 'output' of such organizations. Third, standards are a form of organizing modern societies. From this perspective, the topics of standardization and organization converge: standardization *is* organization.

Beyond its immediate relevance to organization research, the topic of standardization, due to its cross-disciplinary nature, might also offer organization scholars the opportunity to make contributions to other areas of science. In the past, organization research was characterized by the extensive import of concepts and ideas from other disciplines. By contrast, standardization is one

of the areas where organization research can demonstrate its relevance to other sciences (Ahrne & Brunsson, 2011): for instance, it can offer insights into how standards are developed, whether or in what way such standards are adopted by organizations, or how the organization of society by means of standards compares to other forms of societal organization.

A further aim of this paper was to draw attention to the dynamic aspect of standardization. While standards might aim at the creation of stability and sameness, standardization itself is a highly dynamic phenomenon. Even the stability of standards themselves has to be understood as the result of underlying dynamic processes. We highlighted some of the dynamics that arise in each of the three areas of standardization that we examined, and the important research questions to which they lead. Some of these questions have already been addressed – notably by the papers included in this issue. Beyond these, another topic worth investigating systematically concerns the dynamics that arise from the multiple ways in which the three areas of standardization inter-relate. Some of the papers in this issue have already hinted at how these dynamics interact – Botzem and Dobusch (2012), for example, explore the relation between the dynamics of participation within standardization organizations and those of the regulatory system, while Haack et al. (2012) examine the relations between the dynamics of the standardization regime (i.e. standards as organization) and the internal dynamics of the adoption of standards. We hope that these explorations will inspire researchers to look deeper into these intriguing questions.

Acknowledgements

We wish to thank *Organization Studies* Editor-in-Chief David Courpasson for his support and guidance throughout this project. We are also grateful to the following colleagues who provided helpful comments on the ideas expressed in this paper: Göran Ahrne, Michael Behnam, Marie-Laure Djelic, Alfred Kieser, Kristina Tamm Hallström, Bill McKinley, Günther Ortman, Kerstin Sahlin, Sigrid Quack, Andreas Georg Scherer and Peter Walgenbach. Last but certainly not least, we thank Sophia Tzagaraki, Managing Editor of *Organization Studies*.

References

- Ahrne, G., & Brunsson, N. (2006). Organizing the world. In Djelic, M.-L., & Sahlin-Andersson, K. (Eds.), *Transnational governance: Institutional dynamics of regulation* (pp. 74–94). Cambridge: Cambridge University Press.
- Ahrne, G., & Brunsson, N. (2011). Organization outside organizations: The significance of partial organization. *Organization, 18*, 83–104.
- Akerlof, G. A. (1970). The market for ‘lemons’: Quality uncertainty and the market mechanism. *Quarterly Journal of Economics, 84*, 488–500.
- Banta, D. (1992). Developing outcome standards for quality assurance activities. *International Journal for Quality in Health Care, 4*, 25–32.
- Beck, N., & Walgenbach, P. (2005). Technical efficiency or adaptation to institutionalized expectations? The adoption of ISO 9000 standards in the German mechanical engineering industry. *Organization Studies, 26*, 841–866.
- Bernstein, S., & Cashore, B. (2007). Can non-state global governance be legitimate? An analytical framework. *Regulation & Governance, 1*, 347–371.
- Black, J., Hopper, M., & Band, C. (2007). Making success of principle-based regulation. *Law and Financial Markets Review, 1*, 191–206.
- Blind, K. (2004). *The economics of standards: Theory, evidence, policy*. Cheltenham, UK: Edward Elgar.
- Boiral, O. (2007). Corporate greening through ISO 14001: A rational myth? *Organization Science, 18*, 127–146.
- Boiral, O. (2012). ISO certificates as organizational degrees? Beyond the rational myths of the certification process. *Organization Studies, 33*(5/6), 633–654.

- Boiral, O., & Gendron, Y. (2011). Sustainable development and certification practices: Lessons learned and prospects. *Business Strategy and the Environment*, 20, 331–347.
- Boström, M. (2006). Regulatory credibility and authority through inclusiveness: Standardization organizations in cases of eco-labelling. *Organization*, 13, 345–367.
- Boström, M., & Tamm Hallström, K. (2010). NGO power in global social and environmental standard-setting. *Global Environmental Politics*, 10(4), 36–59.
- Botzem, S., & Dobusch, L. (2012). Standardization cycles: A process perspective on the formation and diffusion of transnational standards. *Organization Studies*, 33(5/6), 737–762.
- Botzem, S., & Quack, S. (2006). Contested rules and shifting boundaries: International standard-setting in accounting. In Djelic, M.-L., & Sahlin-Andersson, K. (Eds.), *Transnational governance: Institutional dynamics of regulation* (pp. 266–286). Cambridge: Cambridge University Press.
- Brotheridge, C. M., & Lee, R. T. (2005). Correlates and consequences of degree purchasing among Canadian university students. *Canadian Journal of Higher Education*, 35, 71–97.
- Brunsson, N. (2000). Standardization and uniformity. In Brunsson, N., & Jacobsson, B. (Eds.), *A world of standards* (pp. 138–150). Oxford/New York: Oxford University Press.
- Brunsson, N., & Jacobsson, B. (2000a). The contemporary expansion of standardization. In Brunsson, N., & Jacobsson, B. (Eds.), *A world of standards* (pp. 1–17). Oxford/New York: Oxford University Press.
- Brunsson, N., & Jacobsson, B. (2000b). Following standards. In Brunsson, N., & Jacobsson, B. (Eds.), *A world of standards* (pp. 125–137). Oxford/New York: Oxford University Press.
- Büthe, T., & Mattli, W. (2011a). International standards and standard-setting bodies. In Coen, D., Grant, W., & Wilson, G. (Eds.), *The Oxford handbook of business and government* (pp. 440–471). Oxford/New York: Oxford University Press.
- Büthe, T., & Mattli, W. (2011b). *The new global rulers: The privatization of regulation in the world economy*. Princeton, NJ: Princeton University Press.
- Cargill, C. F. (1997). *Open systems standardization: A business approach*. Upper Saddle River, NJ: Prentice Hall.
- Cargill, C. F., & Bolin, S. (2007). Standardization: A failing paradigm. In Greenstein, S., & Stango, V. (Eds.), *Standards and public policy* (pp. 296–328). New York: Cambridge University Press.
- Casula Vifell, A., & Thedvall, R. (2012). Organizing for social sustainability: Governance through bureaucratization in meta-organizations. *Sustainability: Science, Practice, & Policy*, 8, 50–58.
- Christmann, P., & Taylor, G. (2006). Firm self-regulation through international certifiable standards: Determinants of symbolic versus substantive implementation. *Journal of International Business Studies*, 37, 863–878.
- Clapham, A. (2006). *Human rights obligations of non-state actors*. Oxford/New York: Oxford University Press.
- Czarniawska, B., & Sevón, G. (Eds.). (1996). *Translating organizational change*. Berlin/New York: de Gruyter.
- David, P. A. (1985). Clio and the economics of QWERTY. *American Economic Review*, 75, 332.
- David, P. A., & Greenstein, S. (1990). The economics of compatibility standards: An introduction to recent research. *Economics of Innovation and New Technology*, 1, 3–41.
- Delmas, M., & Montiel, I. (2008). The diffusion of voluntary international management standards: Responsible care, ISO 9000, and ISO 14001 in the chemical industry. *Policy Studies Journal*, 36, 65–93.
- DiMaggio, P. J. (1988). Interest and agency in institutional theory. In Zucker, L. G. (Ed.), *Institutional patterns and culture* (pp. 3–32). Cambridge, MA: Ballinger.
- DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48, 147–160.
- Djelic, M.-L., & Sahlin-Andersson, K. (2006). Introduction: A world of governance: The rise of transnational regulation. In Djelic, M.-L., & Sahlin-Andersson, K. (Eds.), *Transnational governance: Institutional dynamics of regulation* (pp. 1–28). Cambridge/New York: Cambridge University Press.
- Dokko, G., Nigam, A., & Rosenkopf, L. (2012). Keeping steady as she goes: A negotiated order perspective on technological evolution. *Organization Studies*, 33(5/6), 681–703.

- Dokko, G., & Rosenkopf, L. (2010). Social capital for hire? Mobility of technical professionals and firm influence in wireless standards committees. *Organization Science*, 21, 677–695.
- Egyedi, T. M., & Blind, K. (2008). *The dynamics of standards*. Cheltenham, UK: Edward Elgar.
- Espeland, W. N., & Stevens, M. L. (1998). Commensuration as a social process. *Annual Review of Sociology*, 24, 313–343.
- Etzion, D., & Ferraro, F. (2010). The role of analogy in the institutionalization of sustainability reporting. *Organization Science*, 21, 1092–1107.
- Farrell, J., & Saloner, G. (1988). Coordination through committees and markets. *RAND Journal of Economics*, 19, 235–252.
- Feldman, M. S., & March, J. G. (1981). Information in organizations as signal and symbol. *Administrative Science Quarterly*, 26, 171–186.
- Frankel, R. M., Johnson, M. F., & Nelson, K. K. (2002). The relation between auditors' fees for nonaudit services and earnings management. *Accounting Review*, 77(4), 71–105.
- Fransen, L. W., & Kolk, A. (2007). Global rule-setting for business: A critical analysis of multi-stakeholder standards. *Organization*, 14, 667–684.
- Funk, J., L. (2002). *Global competition between and within standards: The case of mobile phones*. New York: Palgrave.
- Garud, R., & Kumaraswamy, A. (1993). Changing competitive dynamics in network industries: An exploration of Sun Microsystems' open systems strategy. *Strategic Management Journal*, 14, 351–369.
- Genschel, P. (1997). How fragmentation can improve co-ordination: Setting standards in international telecommunications. *Organization Studies*, 18, 603–622.
- Gilbert, D., & Rasche, A. (2008). Opportunities and problems of standardized ethics initiatives: A stakeholder theory perspective. *Journal of Business Ethics*, 82, 755–773.
- Gilbert, D. U., & Rasche, A. (2007). Discourse ethics and social accountability: The ethics of SA 8000. *Business Ethics Quarterly*, 17, 187–216.
- Gilbert, D. U., Rasche, A., & Waddock, S. (2011). Accountability in a global economy: The emergence of international accountability standards. *Business Ethics Quarterly*, 21, 23–44.
- Glimstedt, H. (2001). Competitive dynamics of technological standardization: The case of third generation cellular communications. *Industry and Innovation*, 8, 49–78.
- Greenstein, S. M. (1997). Lock-in and the costs of switching mainframe computer vendors: What do buyers see? *Industrial & Corporate Change*, 6, 247–273.
- Gulbrandsen, L. H. (2012). *Transnational environmental governance: The emergence and effects of the certification of forests and fisheries*. Cheltenham, UK: Edward Elgar.
- Guler, I., Guillen, M. F., & Macpherson, J. M. (2002). Global competition, institutions, and the diffusion of organizational practices: The international spread of ISO 9000 quality certificates. *Administrative Science Quarterly*, 47, 207–232.
- Haack, P., Schoeneborn, D., & Wickert, C. (2012). Talking the talk, moral entrapment, creeping commitment? Exploring narrative dynamics in corporate responsibility standardization. *Organization Studies*, 33(5/6), 815–845.
- Hallett, T. (2010). The myth incarnate: Recoupling processes, turmoil, and inhabited institutions in an urban elementary school. *American Sociological Review*, 75, 52–74.
- Heras-Saizarbitoria, I., & Boiral, O. (2012). ISO 9001 and ISO 14001: Towards a research agenda on management system standards. *International Journal of Management Reviews*, published online: 4 April 2012, doi: 10.1111/j.1468-2370.2012.00334.x.
- Hess, D. (2007). Social reporting and new governance regulation: The prospects of achieving corporate accountability through transparency. *Business Ethics Quarterly*, 17, 453–476.
- Holmblad Brunsson, K. (2008). *The notion of general management*. Copenhagen: Copenhagen Business School Press.
- International Organization for Standardization (2001). *Rules for structure and drafting of international standards*, 4th edition. Geneva: ISO/IEC.

- Isaak, J. (2006). The role of individuals and social capital in POSIX standardization. *International Journal of IT Standards & Standardization Research*, 4, 1–23.
- Jacobsson, B. (2000). Standardization and expert knowledge. In Brunsson, N., & Jacobsson, B. (Eds.), *A world of standards* (pp. 40–49). Oxford/New York: Oxford University Press.
- Jakobs, K. (2002). A proposal for an alternative standards setting process. *IEEE Communications Magazine*, 40(7), 118–123.
- Jakobs, K. (2006). ICT standards research: Quo vadis? *Homo Oeconomicus* 23(1), 79–107.
- Jamali, D. (2010). MNCs and international accountability standards through an institutional lens: Evidence of symbolic conformity or decoupling. *Journal of Business Ethics*, 95, 617–640.
- Karmel, R. S., & Kelly, C. R. (2009). The hardening of soft law in securities regulation. *Brooklyn Journal of International Law*, 34, 883–951.
- Katz, M. L., & Shapiro, C. (1986). Technology adoption in the presence of network externalities. *Journal of Political Economy*, 94, 822–841.
- Kerwer, D. (2005). Rules that many use: Standards and global regulation. *Governance*, 18, 611–632.
- Kieser, A. (1997). Rhetoric and myth in management fashion. *Organization*, 4, 49–74.
- King, A. A., Lenox, M. J., & Terlaak, A. (2005). The strategic use of decentralized institutions: Exploring certification with the ISO 14001 management standard. *Academy of Management Journal*, 48, 1091–1106.
- Kolk, A. (2005). Corporate social responsibility in the coffee sector: The dynamics of MNC responses and code development. *European Management Journal*, 23, 228–236.
- Kolk, A., Levy, D., & Pinkse, J. (2008). Corporate responses in an emerging climate regime: The institutionalization and commensuration of carbon disclosure. *European Accounting Review*, 17, 719–745.
- Langlois, R. N. (2002). Modularity in technology and organization. *Journal of Economic Behavior & Organization*, 49, 19–37.
- Lawrence, T. B., Suddaby, R., & Leca, B. (2009). Introduction: Theorizing and studying institutional work. In Lawrence, T. B., Suddaby, R., & Leca, B. (Eds.), *Institutional work: Actors and agency in institutional studies of organizations* (pp. 1–27). Cambridge/New York: Cambridge University Press.
- Leiponen, A. E. (2008). Competing through cooperation: The organization of standard setting in wireless telecommunications. *Management Science*, 54, 1904–1919.
- MacLean, T. L., & Behnam, M. (2010). The dangers of decoupling: The relationship between compliance programs, legitimacy perceptions, and institutionalized misconduct. *Academy of Management Journal*, 53, 1499–1520.
- Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83, 340–363.
- Nair, A., & Prajogo, D. (2009). Internalisation of ISO 9000 standards: The antecedent role of functionalist and institutionalist drivers and performance implications. *International Journal of Production Research*, 47, 4545–4568.
- Oliver, C. (1991). Strategic responses to institutional processes. *Academy of Management Review*, 16, 145–179.
- Ortmann, G. (2010). On drifting rules and standards. *Scandinavian Journal of Management*, 26, 204–214.
- Ping, Z. (2007). The impact of the public's expectations of auditors on audit quality and auditing standards compliance. *Contemporary Accounting Research*, 24, 631–654.
- Power, D., & Terziovski, M. (2007). Quality audit roles and skills: Perceptions of non-financial auditors and their clients. *Journal of Operations Management*, 25, 126–147.
- Power, M. (1997). *The audit society: Rituals of verification*. Oxford/New York: Oxford University Press.
- Quack, S. (2007). Legal professionals and transnational law-making: A case of distributed agency. *Organization*, 14, 643–666.
- Rasche, A. (2009). 'A necessary supplement': What the United Nations Global Compact is and is not. *Business & Society*, 48, 511–537.
- Rasche, A. (2010a). Collaborative governance 2.0. *Corporate Governance: The International Journal for Business in Society*, 10, 500–511.
- Rasche, A. (2010b). The limits of corporate responsibility standards. *Business Ethics: A European Review*, 19(3), 280–291.

- Reinecke, J., Manning, S., & von Hagen, O. (2012). The emergence of a standards market: Multiplicity of sustainability standards in the global coffee industry *Organization Studies* 33(5/6), 791–814.
- Richardson, A. J. (2011). Regulatory competition in accounting. A history of the Accounting Standards Authority of Canada. *Accounting History Review*, 21, 95–114.
- Russell, A. L. (2005). Standardization in history: A review essay with an eye to the future. In Bolin, S. (Ed.), *The standards edge: Future generations* (pp. 247–260). Ann Arbor, MI: Sheridan Press.
- Sahlin-Andersson, K. (2000). Arenas as standardizers. In Brunsson, N., & Jacobsson, B. (Eds.), *A world of standards* (pp. 101–113). Oxford/New York: Oxford University Press.
- Sandholtz, K. (2012). Standards, directives, and occupational norms: Disentangling the determinants of decoupled versus coupled compliance. *Organization Studies*, 33(5/6), 655–679.
- Scharpf, F. (1999). *Governing in Europe: Effective or democratic?* Oxford/New York: Oxford University Press.
- Seidl, D. (2007). Standard setting and following in corporate governance: An observation-theoretical study of the effectiveness of governance codes. *Organization*, 14, 705–727.
- Shapiro, C., & Varian, H. R. (1999). The art of standards wars. *California Management Review*, 41(2), 8–32.
- Simcoe, T. S. (2007). Delay and de jure standardization: Exploring the slowdown in internet standards development. In Greenstein, S., & Stango, V. (Eds.), *Standards and public policy* (pp. 260–295). New York: Cambridge University Press.
- Simcoe, T. S. (2012). Standard setting committees: Consensus governance for shared technology platforms. *American Economic Review*, 102, 305–336.
- Slager, R., Gond, J.-P., & Moon, J. (2012). Standardization as institutional work: The regulatory power of a responsible investment standard. *Organization Studies*, 33(5/6), 763–790.
- Stigzelius, I., & Mark-Herbert, C. (2009). Tailoring corporate responsibility to suppliers: Managing SA 8000 in Indian garment manufacturing. *Scandinavian Journal of Management*, 25, 46–56.
- Strauss, A. (1978). *Negotiations: Contexts, processes and social order*. San Francisco: Jossey-Bass Publishers.
- Sunder, S. (2002). Regulatory competition among accounting standards within and across international boundaries. *Journal of Accounting & Public Policy*, 21, 219–234.
- Tamm Hallström, K. (2004). *Organizing international standardization: ISO and the IASC in quest of authority*. Cheltenham, UK: Edward Elgar.
- Tamm Hallström, K. (2008). ISO expands its business into social responsibility. In Boström, M., & Garsten, C. (Eds.), *Organizing transnational accountability* (pp. 46–60). Cheltenham, UK: Edward Elgar.
- Tamm Hallström, K. (2010). The use of democratic values in the ISO 26000 process on social responsibility. In Sundström, G., Soneryd, L., & Furusten, S. (Eds.), *Organizing democracy. The construction of agency in practice* (pp. 48–64). Cheltenham, UK: Edward Elgar.
- Tamm Hallström, K., & Boström, M. (2010). *Transnational multi-stakeholder standardization: Organizing fragile non-state authority*. Cheltenham, UK: Edward Elgar.
- Terlaak, A. (2007). Order without law? The role of certified management standards in shaping socially desired firm behaviors. *Academy of Management Review*, 32, 968–985.
- Thévenot, L. (2009). Governing life by standards: A view from engagements. *Social Studies of Science*, 39, 793–813.
- Tilcsik, A. (2010). From ritual to reality: Demography, ideology, and decoupling in a post-communist government agency. *Academy of Management Journal*, 53, 1474–1498.
- Timmermans, S., & Epstein, S. (2010). A world of standards but not a standard world: Toward a sociology of standards and standardization. *Annual Review of Sociology*, 36, 69–89.
- Tolbert, P. S., & Zucker, L. G. (1983). Institutional sources of change in the formal structure of organizations: The diffusion of civil service reform, 1880–1935. *Administrative Science Quarterly*, 28, 22–39.
- Tushman, M. L., & Rosenkopf, L. (1992). Organizational determinants of technological change: Toward a sociology of technological evolution. In Cummings, L. L., & Staw, B. M. (Eds.), *Research in organizational behavior* (pp. 311–347). Greenwich, CT: JAI Press.

- van den Ende, J., van de Kaa, G., den Uijl, S., & de Vries, H. J. (2012). The paradox of standard flexibility: The effects of co-evolution between standard and interorganizational networks. *Organization Studies*, 33(5/6), 705–736.
- Waddock, S. (2008). Building a new institutional infrastructure for corporate responsibility. *Academy of Management Perspectives*, 22(3), 87–108.
- Walgenbach, P. (2001). The production of distrust by means of producing trust. *Organization Studies*, 22, 693–714.
- Weber, M. (1964). *The theory of social and economic organization*. Oxford/New York: Oxford University Press.
- Weitzel, T., Beimborn, D., & König, W. (2006). A unified economic model of standard diffusion: The impact of standardization cost, network effects, and network topology. *MIS Quarterly*, 30, 489–514.
- Werner, R. O., & Katz, B. J. (1976). Regulation of product characteristics. *Journal of Marketing*, 40(3), 95–97.
- Westphal, J. D., Gulati, R., & Shortell, S. M. (1997). Customization or conformity? An institutional and network perspective on the content and consequences of TQM adoption. *Administrative Science Quarterly*, 42, 366–394.
- Zbaracki, M. J. (1998). The rhetoric and reality of total quality management. *Administrative Science Quarterly*, 43, 602–636.

Author biographies

Nils Brunsson holds the Chair in Management at Uppsala University and is associated with the Stockholm Centre for Organizational Research (Score). He has published more than twenty books and numerous articles in the field of organization studies covering topics such as decision-making, administrative reforms, standardization and meta-organizations. Currently he is directing a research programme on the organization of markets.

Andreas Rasche is Associate Professor of Business in Society at Warwick Business School, UK. He holds a PhD from the European Business School, Germany, and a Habilitation from Helmut Schmidt University, Hamburg. His current research focuses on the role of standards and standardization in the context of global governance and the role of corporations as political actors. He regularly contributes to international journals in his field of study.

David Seidl is Full Professor of Organization and Management at the University of Zurich, Switzerland, and Research Associate at the Centre for Business Studies at Cambridge University, United Kingdom. He studied management and sociology in Munich, London, Witten/Herdecke and Cambridge. He holds a doctoral degree in management studies from the University of Cambridge. His current research focuses on the dynamics of standardization, the practices of strategy and organizational consulting, on which he has published widely in leading academic journals.