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Understanding the dynamics of specialization  
and diffusion processes across capitalist  
varieties: A conceptual intervention regarding  
the role of international trade fairs



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## Abstract

Recent work on the varieties of capitalism has demonstrated how capitalist economies develop distinct institutional configurations that produce divergent national development paths. While the approach presents a strong path-dependency argument for the persistence of national varieties, it does not adequately account for the evolution of national systems over time, the role of knowledge exchange and trade in shaping institutional adjustment patterns, and whether such processes may lead to convergence. This paper investigates the mechanisms which facilitate the transfer of technologies, institutional practices and their concomitant knowledge bases between firms and across capitalist systems. In the form of a conceptual intervention, it posits that leading international trade fairs are key sites for knowledge diffusion across capitalist economies as they bring together agents from around the world. Similar to decision-making processes in “organized anarchies”, the participants try to match the “solutions” presented at trade fairs with existing or potential problems in their production contexts, instead of looking for optimal problem solutions. Search patterns are shaped by prior technological choices and established organizational practices. From this, we expect to find evidence of continued specialization processes in support of existing capitalist varieties, rather than only “ubiquitification” processes and convergence.

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# **Understanding the dynamics of specialization and diffusion processes across capitalist varieties: A conceptual intervention regarding the role of international trade fairs**

## **1 Introduction**

Recent work on the “varieties of capitalism” has been influential in demonstrating how capitalist economies develop specific sets of institutional arrangements that lead to distinct national development paths (Soskice 1999; Hall and Soskice 2001). Adopting a “relational view” of the firm, this work explores the actions and interactions of economic agents in different national settings, drawing particular attention to deliberative institutions, which provide the basis for ongoing interaction and exchange (Peck and Theodore 2007).<sup>1</sup> From a micro-level perspective, the varieties-of-capitalism approach generates macro-level explanations regarding the nature and dynamics of capitalist economies. It, thus, differs from other macro-economic approaches that mainly focus on macro-level phenomena while neglecting the importance of human agency. From the varieties-of-capitalism perspective, deliberative institutions are important because they enable, support, or necessitate ongoing communication among agents with different preferences and goals. These institutions are the central building blocks that lead to differences in national interaction patterns.

The varieties-of-capitalism approach makes a strong case for the persistence of distinct capitalist systems. Yet, it fails to adequately explain the evolution of capitalist varieties over time, the role of increased knowledge exchange and trade in encouraging adjustments among different systems, or the extent to which such processes may ultimately lead to the convergence of national political economies (Kitschelt et al. 1999; Gertler 2001). Taking these issues as the starting point of our inquiry, this paper serves as a conceptual intervention in that it aims to clarify the mechanisms underlying the exchange processes between firms from different capitalist varieties. In doing so, it sheds light on how such processes may affect the future development paths of different national political economies.

Focusing on the types of institutions that might enable the transfer of technologies, institutional practices, and their associated knowledge bases, we suggest that leading international trade fairs provide an important framework for such interaction because they bring together agents from all over the world and create temporary spaces of presentation and interaction (Borghini et al. 2006; Maskell et al. 2006; Bathelt and Schuldt 2008).<sup>2</sup> And, since trade fairs are organized according to a specific technological or industry focus, they enable interaction and knowledge exchange between firms from different capitalist varieties. International trade fairs are, thus, a unique environment in which economic actors can acquire an overview of the latest trends and developments in the world market (Rosson and Seringhaus 1995; Sharland and Balogh 1996; Godar and O’Connor 2001; Prüser 2003). They also give firms an opportunity to gain important insights into the practices of firms from different varieties of capitalism.

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<sup>1</sup>/ Hall and Soskice (2001: 11) define deliberative institutions simply as “institutions that encourage the relevant actors to engage in collective discussion and to reach agreements with each other”.

<sup>2</sup>/ Of course, there are more ways in which knowledge can be exchanged at a distance and specific practices transferred between capitalist economies. These include interaction through global value chains or production networks, regular business travel, or transnational business communities (Bathelt and Schuldt 2010). The purpose of this paper is to explore the particular role of trade fairs in a conceptual way, rather than dealing with the entire set of possibilities.

In this way, the activities of firms at international trade fairs correspond to an aspect of economic globalization that has been referred to as *ubiquitification* (Maskell and Malmberg 1999), or the processes by which previously localized capabilities and knowledge resources are transformed into ubiquities that are globally available at the same price. Largely driven by the increasing codification and dissemination of technical knowledge on a global scale, these processes seem to challenge the continuation of distinct capitalist varieties by enabling the convergence of “best practices” in organization and innovation across national systems. Although national regulations might initially remain unchanged, economic agents have the capacity to bend existing rules and exploit them under different circumstances (Thelen 2003). That being said, empirical evidence of clear cases of convergence remains scarce. In fact, continuous specialization still represents the dominant pattern in national economies despite the pressures of globalization (see, for example, Jackson 2003).

This paper does not directly tackle the larger question of institutional transfer between national systems; rather, it focuses attention on the aspect of institutional arrangements that has received the least attention in the varieties of capitalism literature – namely, inter-firm relations. This is done by exploring the ways in which new ideas and technologies are adapted and combined with existing production patterns through trade fair interaction. Nevertheless, because production structures and institutional conditions are linked with one another in a reflexive manner (Lundvall and Maskell 2000; Hall and Soskice 2001), specialization processes in production may very well stimulate corresponding adjustments in the institutional framework. Hall and Thelen (2009) provide several illustrative examples of such “shifts from below” where incrementally changing patterns of economic interaction place new demands on the general institutional framework. In this sense, our conceptual intervention is motivated by two overarching goals: First, we aim to draw a connection between the firm-level perspective and the broader capitalist development, something that has often been called for (e.g. Scott 2004) but remains largely unexplored in the literature. Second, we wish to combine key insights from economic geography and political science in order to advance a trans-disciplinary and multi-scalar approach.

In pursuit of a more dynamic conceptualization of capitalist diversity, some scholars (Deeg and Jackson 2007; Jackson and Deeg 2008) have called for a multi-level approach that integrates the micro-, meso-, and macro-levels of analysis. The conceptual discussion put forward in this paper is structured with this objective in mind. The next section provides an overview of the varieties-of-capitalism school, drawing attention to its main contributions to the field of comparative political economy, as well as some of the still unresolved issues which serve as the basis for the present study. Section 3 then turns to the role of international trade fairs and positions these events as important meso-level structures that help to create a closer linkage between the micro- and macro-levels of analysis. It explores the nature of the search processes that occur during such events and the extent to which they provide a vehicle through which technological and institutional transfers across national systems might take place. Section 4 draws on theories of organizational decision making, and introduces the garbage-can-model of organizational choice. This model is particularly useful in characterizing the search processes of firms at international trade fairs. It also assists in developing an empirically grounded approach to studying the relationship between micro-level processes (inter-firm interaction at trade fairs) and broader macro-level phenomena. Section 5 concludes by discussing the model’s potential implications and how it may contribute to ongoing debates about the dynamic elements of institutional change.

## **2 The varieties-of-capitalism approach and some unresolved questions**

In the context of the broader comparative capitalisms literature (see Jackson and Deeg 2008, 681-684), Hall and Soskice’s (2001) varieties-of-capitalism framework differs from alternative approaches to comparative political economy in that it advances an explicitly “firm-centered” perspective based on a “relational view of the firm”. In this respect, it focuses on the actions and interactions of economic agents in different national

contexts (Hall and Soskice 2001: 6). Whereas the approach corresponds to other institutional approaches in that it identifies institutional similarities and differences between capitalist economies, it places greater emphasis on the role of institutions in structuring economic action and resolving coordination problems in different spheres of economic activity (Soskice 1999). Accordingly, institutions play a key role in enabling ongoing deliberation and knowledge exchange among economic agents.

The coordination of economic activity differs in empirically observable patterns between capitalist systems. As such, the varieties-of-capitalism approach suggests that firms will enjoy a “comparative institutional advantage” by exploiting the “institutional complementarities” of the national system in which they are embedded (Soskice 1999; Hall and Soskice 2001). According to Hall and Soskice’s (2001) formulation, this leads to the development of two ideal-types of economic organization – liberal market economies (LMEs), the classic prototype of which is the United States, and coordinated market economies (CMEs), the most common example of which is Germany. Given that institutions develop in close relation to one another, institutional complementarities are viewed as a critical way of maintaining coherent national structures. This is because the institutional practices that develop in one sphere complement established practices in other spheres, thereby reinforcing the differences between capitalist varieties. Without endorsing any single model of economic organization, the varieties-of-capitalism approach challenges the “one-size-fits-all” neoliberal ideology and develops a useful set of conceptual tools for analyzing the internal dynamics of different national capitalisms.

One important accomplishment of the varieties-of-capitalism school is that it uses a micro-economic perspective to explain macro-economic patterns at the national level. More specifically, it aims to understand macro-economic patterns by analyzing the interaction and practices of economic agents – such as firms, other organizations, and the managers and employees that operate inside them. This paper also draws on a relational perspective (Bathelt and Glückler 2003) and follows a similar line of argument as that advanced by the varieties-of-capitalism school. Institutions are central to our conception because they link individual and collective action with overarching structures – such as those operating at the level of the national state. In this respect, we draw important insights from structuration theory (Giddens 1984).

Another important achievement of the varieties-of-capitalism approach is that it proposes a clear methodological framework for analyzing the characteristics of capitalist economies by elaborating five institutional spheres within which economic action and interaction take place. These are: (i) industrial relations, (ii) vocational training/education, (iii) corporate governance, (iv) inter-firm relations, and (v) internal relations. Although the approach distances itself from the innovation-systems literature (Hall and Soskice 2001: 3f.), it also complements this work in that it suggests an institutional methodology that has, until recently, not been systematically explored in this literature (Lorenz and Lundvall 2006). Briefly stated, the national-innovation-systems approach suggests that feedbacks between national production structures, institutional conditions, and innovation patterns lead to the establishment of particular systems at the level of the national state (Lundvall 1992; Edquist 1997). Specific national patterns of innovation thus develop, as existing specializations pre-structure the types of problems and bottlenecks in production that are recognized as being particularly important (Lundvall and Maskell 2000). This leads to the establishment of specific national industrial systems and an institutional framework that enables particular ways of interacting, both of which shape the future direction of innovation processes. These patterns of interaction depend on a variety of factors, including the division of labor within and between firms, existing technological competencies in the workforce, the generation and reproduction of sophisticated skill levels, as well as other aspects of the capital-labor nexus (Gertler 2004). Due to the interdependence between production, institutional arrangements and knowledge creation, actors in innovation processes tend to find it easier or more advantageous to choose partners from within, rather than outside, their national environment. This is because they share a common framework of understanding, know the specifics of the technologies used, “speak the same language”, and have similar experiences in problem solving. All of this helps to establish social and cognitive affinity and

provides a basis for communication and interaction among agents within a particular national setting. A similar line of argument has been developed in the varieties-of-capitalism literature.

Despite its prominence within the field of comparative political economy, the varieties-of-capitalism approach has stimulated considerable academic debate and criticism. Some of the major strands of criticism are outlined below:

- Some critics have taken issue with the focus on the national state, arguing that adopting a different level of analysis might be useful in revealing important elements of “within-system” diversity (Coates 2005; Crouch 2005; Panitch and Gindin 2005).
- A further point of contention has to do with the problem of dealing with variation among different firms within national models (Allen 2004; Crouch and Farrell 2004; Martin 2005). Empirical work has shown, for example, that economic practices may differ between firms in different as well as the same sectors.
- Other critics suggest that the varieties-of-capitalism framework is inclined towards institutional determinism to the extent that it embraces an overly mechanistic conception of institutional complementarities and downplays underlying power structures, such as social class or gender (Thelen 2003; Crouch and Farrell 2004; Coates 2005; Pontusson 2005; Jackson and Deeg 2006).
- Empirical work using the varieties-of-capitalism approach further suggests that the basic distinction drawn between LMEs and CMEs is overly simplistic (Howell 2003; Streeck 2005) and that successful applications of the framework tend to ignore cases that do not easily fit this typology (Haddow 2008). The political economies of France, Italy, Spain and Greece, for example, critically diverge from either ideal-type, leading to a chorus of calls for the refinement of the initial typology or the construction of alternative models (Whitley 1999; Amable 2003; Boyer 2005; Lorenz and Lundvall 2006; Schmidt 2007).
- For other critics, the five core institutional arenas defined by the varieties-of-capitalism approach are incomplete (Peck and Theodore 2007). Indeed, when one considers issues such as the reproduction of the workforce and skill development, the social security system represents an additional institutional sphere that warrants further conceptual development (Bathelt and Gertler 2005). As Haddow (2008) rightly observes, this particular stream of criticism encourages greater dialogue between the varieties-of-capitalism approach and other literature, such as that on welfare-state regimes (Esping-Andersen 1996).
- Another important stream of criticism suggests that the varieties-of-capitalism framework is too static and grounded in the theory of path dependency. From this perspective, the approach has great difficulty accounting for important dynamic elements of economic change (Crouch and Farrell 2004; Crouch 2005; Hancké and Goyer 2005; Streeck and Thelen 2005; Jackson and Deeg 2006).
- Finally, the varieties-of-capitalism approach has been widely criticized for failing to adequately address the linkages between national states and the many potential forces of convergence and globalization (Crouch and Farrell 2004; Martin 2005; Pontusson 2005; Panitch and Gindin 2005; Peck and Theodore 2007).

Many of the abovementioned criticisms have already led to the development of new avenues of social scientific enquiry. Others are currently being pursued by scholars interested in extending the explanatory boundaries

of the varieties-of-capitalism perspective and making it more resistant to charges of determinism and functionalism (e.g. Hancké and Goyer 2005). This paper focuses only on the two latter critiques. The first involves the static nature of the varieties-of-capitalism model (Crouch and Farrell 2004; Crouch 2005; Hancké and Goyer 2005; Streeck and Thelen 2005; Jackson and Deeg 2006; Deeg and Jackson 2007). Although more recent work has attempted to address this problem by focusing on the incremental yet cumulative ways in which institutional change occurs (Thelen 2003; Hall and Thelen 2009), research on the dynamic elements of capitalist variation is still limited.

The second criticism that we aim to address relates to the ambiguity surrounding the linkages between national states and processes of convergence and globalization (Crouch and Farrell 2004; Martin 2005; Pontusson 2005; Panitch and Gindin 2005; Peck and Theodore 2007). While we agree that the varieties-of-capitalism approach is not necessarily “incompatible with dynamic views of the political economy” (Hall and Thelen 2009: 9), the development of a more dynamic theory of capitalist varieties requires further clarification of the complex interplay between micro-, meso-, and macro-level phenomena (Deeg and Jackson 2007). It is with this task in mind that we raise the following research questions: What are the precise mechanisms by which different capitalist varieties evolve over time? In what ways do processes of knowledge exchange and trade lead to adjustments between different systems? And how might such ongoing interactions across systems affect processes of convergence? As the following section demonstrates, international trade fairs provide an important platform for cross-system interaction between firms. In doing so, they represent important meso-level structures that may enable transfers of institutional practices and their specific knowledge bases between capitalist varieties.

### **3 The role of international trade fairs in the global political economy**

Trade fairs and trade shows are, of course, well-known and have been studied for a long time in different disciplines. This research has, however, focused on a limited range of issues. In historical investigations, for instance, interesting research has been conducted on the rise of trade fairs as important places for cultural exchange in Europe since, at least, medieval times, and on how the power of trade networks, such as the *Medici*, *Fugger* and *Hanse*, were built around such events. Historical work also shows that trade fairs were originally places where traders from other cities and regions were allowed to sell their products to individual local customers at defined points in time (often around Christian holidays), as a consequence of protectionist trade policies. The modern trade fair, as we know it today, was first introduced in 1895 when Leipzig launched its *Mustermesse* – a trade fair where only samples (sample = *Muster*) were discussed with clients while the products were later shipped to their home base (Fischer 1992). Sometimes production did not start until detailed orders were made. This change in the character of trade fairs was induced by the relaxation of trade restrictions and required that new institutions were formed to offer securities regarding financial transactions and contractual guarantees. Not surprisingly, trade fair rules eventually became the basis of European business law. In the political economy literature, trade fairs are usually only referred to in passing. Whereas some studies have mentioned the growth of international trade fairs as one of the many symptoms of economic globalization, or identified the hosting of such events as an important part of a nation’s economic development strategy, this work has generally concentrated more on explaining variation in the practices and processes observed in different countries than on understanding the potential role of trade fairs in the global political economy.

More recently, scholars have begun to conceptualize and systematically analyze trade fairs as important sites through which global knowledge flows are circulated and ideas for innovation explored (Borghini et al. 2006; Maskell et al. 2006). In this now growing body of work, international trade fairs are increasingly recognized as

important temporary platforms for networking, knowledge generation, and dissemination because they enable intense interactions among economic agents despite spatial restrictions.<sup>3</sup>

Ongoing face-to-face meetings with other participants at these fairs provide firms with an opportunity to systematically acquire information and knowledge about competitors, suppliers, and customers, including, for example, their technological and strategic choices (Bathelt and Schuldt 2008). On different occasions, and through different routes, global information about new or emerging trends in an industry, as well as all sorts of news and gossip, flow back and forth between the participants who are temporarily clustered at trade fairs. Agents benefit from these meetings through repeated, intensive, often short face-to-face (F2F) encounters which lead to a specific communication and information ecology referred to as “global buzz” (Maskell et al. 2006). As discussed in more detail elsewhere (Bathelt and Schuldt 2010), global buzz is a complex and multi-dimensional concept that enables unique processes of knowledge generation and dissemination through interactive learning and learning by observation. Its constitutive components include: (i) the dedicated co-presence of global supply and demand, (ii) intensive temporary F2F interaction, (iii) a variety of possibilities for observation, (iv) intersecting interpretative communities, and (v) multiplex meetings and relationships.

These events bring together leading, as well as less well-known, agents from an entire industry or technology field for the primary purpose of exchanging knowledge about the present and future development of their industry, centered around displays of products, prototypes, and innovations. Because trade fairs are organized in terms of a specific technological or industry focus, they cut across capitalist varieties and lead to communication and interaction among agents from different political economic systems. The firms that engage in these communication and exchange processes operate in different institutional contexts, utilizing, at least, partially different technologies, addressing different markets, and/or applying different practices. Trade fairs are, thus, unique settings wherein agents can acquire an overview of the developments and trends in the world market (Rosson and Seringhaus 1995; Sharland and Balogh 1996; Godar and O’Connor 2001; Prüser 2003). Exhibitors and visitors also benefit from possibilities to scrutinize the exhibits of other firms and inspect the visualization of their corporate cultures (Bathelt and Schuldt 2010).

Despite the fairly heterogeneous composition of individuals participating in international trade fairs, recent work suggests that different, partially related communities find each other at these events (Entwistle and Rocamora 2006). Participation at trade fairs helps reduce the complexity and uncertainty associated with fast changing product and technology markets. Within their contact networks, economic agents are linked in different ways that allow them to exchange facts, impressions, gossip, and small talk. This gives them an opportunity to share their experiences with existing products and their interpretations of new developments in understandable ways. Combining different types of business-related and other information also allows firms to check out other agents and establish initial communication that can be continued later on (Borghini et al. 2006; Schuldt and Bathelt 2011). Through regular participation at major international trade fairs, firms are able to find partners to complement their needs, establish initial trust with distant partners, and take the first steps toward the development of durable inter-firm networks in research, production, and/or marketing. In other words, international trade fairs are an important vehicle through which global best-practices are transported across different capitalist systems. It thus seems to follow that such events support processes of technological convergence among capitalist varieties. This can be done in, at least, three different ways:

- by contributing to the process of ubiquitousness with respect to the latest technologies, through intended and unintended knowledge transfers and the signing of sales contracts;

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<sup>3</sup>/. We are focusing here on the leading business-to-business fairs which typically take place every two to three years, where firms from an industry, value chain, or technology field exhibit their latest products, technologies, and innovations.

- by encouraging the diffusion of best-practices as firms from all over the world scrutinize leading-edge companies and their products, and by providing critical information about promising markets and successful business concepts;
- and, finally, by supporting the mediation of institutional differences at different levels, including exchanges between firms from different contexts and the diffusion of ideas about new national regulations and innovation conditions.

Although trade fairs seem to provide a supportive environment for the eventual convergence of technologies, strategic choices and best-practices between different national systems, a deeper investigation into the search processes of firms at these events reveals a more complex picture. Drawing on theories of organizational decision-making, particularly the garbage-can model, the following section tries to develop a closer linkage between the micro-level processes operating at trade fairs (i.e. inter-firm interaction) and broader macro-level questions regarding patterns of national specialization and/or standardization.

#### **4 Trade fairs as organized anarchies and the garbage-can model of organizational choice**

Having emphasized the importance of international trade fairs and demonstrated their potential to accommodate and/or accelerate convergence processes between capitalist varieties, we now take a closer look at the nature of the search and information processes that occur during these events. This step is critical not only in supporting the argument that trade fairs serve as key mechanisms linking inter-firm exchanges to patterns of technological specialization and not just convergence, but also in identifying the conditions under which variation in such patterns occurs. To this end, we draw on the organizational decision-making literature and, in particular, the garbage-can model of organizational choice (Cohen et al. 1972).<sup>4</sup> This model is useful in conceptualizing the search and information processes that take place during international trade fairs as it underscores the importance of discourse and ideas in determining the nature of individual and organizational choice.

The garbage-can model is part of a broader critique of rational-choice models of organizational decision-making. Originally developed by Cohen et al. (1972) to analyze decision-making in universities, this model distinguishes itself from most other organizational choice theories in that it highlights the non-linear and often ambiguous dynamics of decision-making in so-called “organized anarchies” (Cohen et al. 1972). Organized anarchies are defined by three main properties – namely, problematic preferences, unclear technologies or processes, and fluid participation.

- *Problematic preferences.* In the respective organization, there is a lack of consensus on individual and organizational goals. This means that individual decision-makers often disagree about their organization’s objectives and may also rethink their own preferences over time. The organization is, thus, better described as a loose collection of ideas than as a coherent structure, where preferences are discovered through action rather than acts being based on clearly-defined preferences (Cohen et al. 1972). Although trade fairs have been described as the intersection of focused communities, participating agents differ in terms of how they evaluate new trends and what they view as important and

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<sup>4</sup>/. Cohen et al. (1972) refer to choice opportunities as “garbage cans” or “receptacles” into which various types of problems and solutions are dumped by participants as they are created. From this perspective, “[t]he mix of garbage in a single can depends on the mix of cans available, on the labels attached to alternative cans, on what garbage is currently being produced, and on the speed with which garbage is collected and removed from the scene” (Cohen et al. 1972: 2).

why. Part of the contingency of economic action has to do with the fact that agents can make fundamentally different decisions, even under the same circumstances (Bathelt and Glückler 2003).

- *Unclear technologies.* To the extent that individual decision-makers do sometimes agree on their organization's goals, they still face the problem that the technologies or processes needed to achieve these goals are often elusive (Fardal and Sørnes 2008). As such, these organizations tend to operate on the basis of "trial-and-error", learning from past mistakes, and "pragmatic inventions of necessity" (Cohen et al. 1972: 1). Because participants at major international trade fairs usually operate under conditions of technological and market uncertainty, they often proceed experimentally at first, with only partial knowledge of the implications of their actions. "Participants arrive at an interpretation of what they are doing and what they have done while in the process of doing it" (Cohen et al. 1972: 2).
- *Fluid participation* refers to the fact that organizational participants tend to "come and go" in the organization, and will devote varying amounts of time and energy to different issues. The boundaries of such organizations are, therefore, unclear and characterized by considerable instability. The central decision-makers may also change on a regular basis.

In short, the garbage-can model suggests that the ambiguous nature of individual and organizational decision-making stems from the absence of stable and clearly defined goals (i.e. problematic preferences), the indeterminacy of knowledge and the methods needed to realize organizational objectives (i.e. unclear technologies), and the sporadic rather than routine involvement of agents in different decision-making arenas (i.e. fluid participation). In such contexts, decision-making is viewed as a consequence of the interrelations among four largely independent streams of variables – namely, a stream of problems, a stream of solutions, a stream of participants, and a stream of choice opportunities (Cohen et al. 1972). We briefly describe these factors below.

The problems stream refers to the processes by which a particular issue or event – be it social, economic, or political – comes to be recognized as "a problem" by the relevant group of actors. Although objective indicators, such as a revolutionary new process design, may draw attention to an emerging problem, in most cases, problem definition remains open to individual interpretation (Kingdon 1995). As such, decision-making within the problem stream typically requires ongoing deliberation among agents, and problem definition often becomes a deeply political process in which a contest of ideas, values and norms serves to legitimize some issues while marginalizing others.

In terms of the solutions stream, the garbage-can model challenges the conventional wisdom of the problem-solution relationship by viewing individuals not as "problem-solvers" but as "solution-marketers" (Fardal and Sørnes 2008). For our purposes, a "solution" is a firm's new product or process innovation presented at a trade fair. Since the garbage-can model views the "offering" of solutions as a key part of organizational action (Fardal and Sørnes 2008), trade fairs seem to provide a valuable test environment for the analysis of such behavior. Trade fairs are an organizational form characterized by a "collection of choices looking for problems, issues and feelings looking for decision situations in which they might be aired, solutions looking for issues to which they might answer, and decision-makers looking for work" (Cohen et al. 1972: 1).

In the garbage-can model, organizational participation is a largely unstructured and transient activity. Not only do participants "come and go" freely in an organization, they also bring with them varying amounts of interest and energy. Moreover, external factors, such as time, are important in determining the energy available for organizational decision-making. Finally, the stream of choice opportunities refers to those moments or "windows of opportunity" when the various streams come together and decisions are made. This

implies that potential business partners or alliances are established, the viability of new technological innovations evaluated, and time, money, and responsibilities allocated.

Previous empirical work on international trade fairs has identified processes of acquiring information at flagship fairs that can be interpreted as deliberate problem-led searches – that is, situations where firms actively try to find solutions to a specific and previously identified problem (Borghini et al. 2006; Bathelt and Schuldt 2008). More often, however, the search processes of firms follow a less linear pattern, and seem to be directed by a more “tacit” form of knowing. These initial findings call for a more systematic investigation of the nature of the search processes of firms at international trade fairs. The garbage can model of organizational choice is useful not only in capturing the dynamic nature of these processes, but also in developing potential linkages between these processes and patterns of national specialization or standardization.

While it is true that final choices might not be made at the actual trade fair, the individuals that perform the task of scrutinizing other firms’ exhibits are often experienced agents whose impressions strongly influence their firms’ decision-making processes. This is particularly true in industry segments that have a strong technology focus, where agents may select or test solutions more closely after a trade fair to find out which ones are relevant for them. In design segments, in contrast, decisions are sometimes made more quickly during a trade fair (Schuldt and Bathelt 2011). In some cases, a repertoire of potential solutions may be orchestrated from which partners and solutions can be drawn when problems occur later on. In each of these circumstances, the choices made during trade fairs are led by existing production structures and past experiences in innovation and problem solving.

Whereas learning in organized anarchies presents some obvious challenges given the fact that the lessons drawn under such conditions are, themselves, often ambiguous, the garbage-can model suggests that organized anarchies can adapt and learn. Moreover, a certain degree of disorder may actually stimulate learning and innovation processes (March and Olsen 1979). This line of argument complements recent research on international trade fairs, which increasingly views these events as important stimuli for innovation processes (Bathelt and Schuldt 2010).

Over the past several decades, the garbage-can model has undergone numerous revisions and has been applied in a wide range of contexts. This includes work on military operations and organizations (March and Weissinger-Baylon 1986), studies of public policy making and agenda setting in the U.S. federal government (Kingdon 1995), foreign policy making (Newmann 1998), and strategic decision making within the context of information technology systems (Fardal and Sørnes 2008). Despite its demonstrated applicability in a variety of research areas, it has not been used to analyze the search and decision-making processes of firms at international trade fairs.<sup>5</sup> In our view, the model offers valuable insights into the nature of these processes as it is especially well-suited to explaining the diffusion of new ideas or “solutions” through seemingly random or non-linear processes (Cohen et al. 1972).

As indicated above, the search processes most often observed at international trade fairs provide a somewhat mixed picture. They do not easily fit within the rational-choice model of decision-making, in which economic agents make choices based on a complete overview of the market. Rather, in the face of continuously changing markets and technologies on a global scale, there are clear limitations as to what economic actors or firms can predict and control with respect to new developments. Recent work in behavioral economics helps to shed light on this problem. By questioning the view that agents possess complete and rational cognition (Ariely 2008), this work tells us that decisions are frequently made in the context of imperfect or limited in-

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<sup>5</sup>/. In applying the garbage-can model to the context of trade fairs, we treat these events as an organizational form.

formation, and are strongly guided by “local” reference points or “anchors” (Ross and Nisbet 1991; Glaeser 2003; Storper 2009).

The insights from the organizational decision-making literature, and the garbage-can model, in particular, provide a useful conceptual framework for analyzing the complex interactions and exchanges that take place during international trade fairs. While the question of how these processes shape the exchange of ideas and best-practices across capitalist varieties must be addressed in future empirical applications of the framework, we offer a preliminary outlook and some concluding remarks in the following section.

## 5 Conclusions and outlook

How do the search processes of firms in the organized anarchy of the trade fair environment affect exchanges between economic agents from different capitalist varieties? Although we focus specifically on the sphere of inter-firm relations and its connection to innovation, the empirical investigation of such processes will undoubtedly entail broader linkages to the evolution of capitalist varieties in the global political economy. Thus, having both individually described and sketched out the connections between the micro-, meso-, and macro-level factors, the question then becomes: How and in what ways do the search processes of firms during international trade fairs affect the course of economic convergence/divergence among capitalist varieties? More specifically, to what extent do leading international trade fairs facilitate the transfer of specific technological arrangements and practices across economic systems?

As explained in the garbage-can model, decision-making processes are largely defined by the independence of the various streams – i.e. problems, solutions, participants, and choice opportunities. Outcomes, moreover, are often a product of the random “coupling” of these four streams. As firms inspect solutions being displayed at international trade fairs, they may have in mind some existing problems from their daily routines and find a way to match the solutions presented to these problems. As the literatures on organizational decision-making and behavioral economics tell us, these agents may not simply select best-practices or optimal solutions; they are drawn to solutions that make the greatest sense within their own production contexts. The cumulative consequences of such search patterns may lead firms to build upon, rather than alter, existing specializations in products, strategies and designs. As these specializations rely on the capital-labor relations, corporate governance structure, training system and/or industrial relations from which they draw their competitiveness, we expect the search patterns at international trade fairs to strengthen, and not primarily undermine, existing economic and institutional structures.

This paper proposes elements of how to think about these trends and situate them within the context of discussions about the so-called “globalization paradox” (Bathelt and Glückler 2003). This seeming contradiction becomes clearer when one looks more closely at the opposing processes of (i) ubiquitification (Maskell and Malmberg 1999), through which new technologies and knowledge resources are increasingly codified and disseminated to other agents across different economies, and (ii) contextualization (Storper 1997), by which innovations are translated into the agents’ established production environment. Whereas both processes are viewed as key components of economic globalization, they have substantially different consequences for processes of convergence or divergence among capitalist systems.

One of the greatest challenges confronting current understandings of economic learning processes has to do with identifying the mechanisms by which individual learning leads to specific organizational outcomes – whether that involves processes of institutional change or patterns of institutional continuity. Effectively overcoming these obstacles involves, first, an appreciation of the dynamic and multifaceted nature of economic globalization and, second, the development of a more systematic analysis of the range of factors

involved. The conceptual intervention presented here takes a critical step in this direction in that it centers on the micro-foundations of economic action in order to address both meso- and macro-level phenomena.

As part of the globalization process, new knowledge about product technologies, for example, is disseminated among firms when they come together at international trade fairs to discuss the latest innovations in their industry. This is possible because firms can standardize knowledge originally developed in a specific locality and commit this to writing in a way that can readily be transferred to other locations and countries (e.g. Gertler 2001). One result of such dissemination processes is that when new computer controls and management methods for industrial production are developed, they are implemented virtually simultaneously across the world.

The consequences of this ubiquitification process, related to the codification and dissemination of knowledge, do not, however, necessarily lead to a situation in which all regional and national economies apply the same state-of-the-art technologies and practices. This is because economic globalization is also accompanied by processes of knowledge localization and contextualization, through which the competitive capabilities of existing national specializations are strengthened. As agents in a specific production or innovation system come across particular day-to-day problems, their activities at international trade fairs tend to revolve around those solutions which complement and strengthen existing specializations. A producer operating in a context characterized by incremental innovations and ongoing learning processes in production based on long-term employment relationships – as, for instance, in the case of Germany (Katzenstein 1987; Hall and Soskice 2001) – will likely seek out improvements based on these specializations. In contrast, a producer working in a context such as the U.S., which favors other industries in which innovation is driven by re-designing architectures and re-configuring assets, will likely identify new products and parts that would help spur a new round of re-combinations in those industries.

Knowledge contextualization entails the adaptation of new technologies to the particular conditions of production in the home economy (Storper 1997; Bathelt and Glückler 2003). Through this, new structures are combined with old ones, coupled with the specific knowledge of experienced employees. This combination of knowledge leads to relatively predictable changes in the technologies used and encourages the spread of state-of-the-art technologies. Yet it also strongly supports the existing specialization processes of firms, industries, and national states, rather than just stimulating convergence on a global pattern of “best-practice”. By transferring and applying codified knowledge acquired during an international trade fair to the different sites, regions, and national states, this knowledge is, in fact, being contextualized to enable re-connection with the existing knowledge basis. Through contextualization, unspecific resources are being re-configured and re-combined into new locally embedded innovation and learning processes, and new forms of uncodified knowledge not readily available to agents outside this context (e.g. Asheim 1999).

In sum, economic exchange and knowledge circulation during international trade fairs do not necessarily lead to de-territorialization or the abandonment of specific national economic structures. These are undoubtedly complex issues that call for further theoretical engagement and robust empirical validation. Yet, pursuing them promises substantial returns in advancing our understanding of the dynamic elements of change in capitalist systems in the context of the global political economy.

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