

# Division of Labor within Institutional Complexes and the Evolution of Interlocking Structures of International Governance: The Complex of Trade and the Environment

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## *Abstract:*

This paper develops a theoretical approach toward the study of the developmental dynamics of institutional complexes and their structural effects. *First*, it identifies the institutional complex as the appropriate unit of analysis and discusses the fundamental issues of emergent system structures and, drawing on the organizational ecology literature, the driving forces of complex dynamics. *Second*, it identifies competition among international institutions as the driving force of complex dynamics that leads to functional specialization of institutions and their selection of functional niches. *Third*, it examines the structural effects of complex dynamics. We argue that functional specialization produces a division of labor among the component institutions as a systemic structure that is not reflected in the properties of the component institutions. And we identify interlocking structures as an institutionalized configuration of the component institutions producing specific system properties. *Fourth*, the paper explores the evolution of the ordering principles of the trade-environment complex. Whereas the WTO and several multilateral environmental agreements claim competence over the regulation of environmentally motivated trade restrictions, a division of labor has emerged that assigns clearly delimited functional niches to the component institutions of this complex and thereby creates a surprisingly coherent interlocking governance structure.

## 1. Introduction

Interaction among separately established international institutions is a wide-spread phenomenon within the institutionally fragmented landscape of the international system. Over the past ten years, it has become widely recognized that the international governance system is not only populated by large numbers of purposively and separately established international institutions (Shanks/ Jakobsen/ Kaplan 1996; Young 1996; Gehring / Oberthür 2008). It has also been demonstrated that these institutions do not exist in isolation from each other, but affect each others' normative development and performance in various ways (e.g. Aggarwal 1998; Alter/ Meunier 2009; Oberthür/ Gehring 2006a; Raustiala/ Victor 2004). Governance success is expected to depend heavily on effects of interaction among institutions (Young 2002). Considerable progress has been made on analyzing the causal mechanisms that drive individual cases of institutional interaction (Gehring/ Oberthür 2009; Oberthür/ Gehring 2006b; Stokke 2001a), and scholars have started to explore the conditions under which institutional interaction can be expected.

In spite of empirical and theoretical progress, surprisingly little is known about the developmental dynamics of institutional complexes and the ordering principles that may evolve from lasting institutional interaction within institutional complexes. Theoretical research has hardly focused on basic ordering principles of such complexes, since Underdal and Young (2004: 374–375) pointed to the fact that we know very little about interlocking governance structures that emerge from tacit accommodation of international institutions in interaction situations, and Underdal (2008: 56-57) emphasized that overarching ordering principles play an important role in realist and sociologist analysis of institutions. Empirical research demonstrates that the component institutions of a complex establish enduring inter-institutional relations. This has been shown for the institutional complexes on plant genetic resources (Raustiala/ Victor 2004; Jungcurt forthcoming), on the Arctic environment (Stokke forthcoming), on fisheries management (Alcock forthcoming) and on environmentally motivated trade restrictions (Gehring forthcoming). By an institutional complex, we mean a set of institutions that govern jointly a given area of international relations (Raustiala and Victor 2004), so that the component institutions do not operate independently from each other, but affect each others' normative development or their effectiveness within their respective areas of governance (Oberthür and Gehring 2006, Gehring and Oberthür 2009).

This paper develops a theoretical approach toward the study of the developmental dynamics of institutional complexes and their structural effects. Such effects, i.e. basic ordering principles and ensuing interlocking structures of international governance, are assumed to be located at the level of the institutional complex, not of its component institutions. Thus, conceptualizing the interlocking structures of international governance as emergent, i.e. systemic, entities requires an approach that does not exclusively focus on the single institutions involved, but accommodates a systemic perspective (Wendt 1999, Sawyer 2001). To identify the forces driving the development of an institutional complex, the paper draws on the organizational ecology approach (Aldrich 1999; Hannan and Freeman 1977, 1989, Hannan and Carroll 1992). This branch of organization theory has been almost entirely ignored by International Relations theory so far (for a rare exception, see Stokke, forthcoming). It explores the dynamics of populations of

organizations which creates pressure on organizations to adapt and construct their own functional niches within a competitive environment (section 2).

The paper argues that the emergence of interlocking structures is driven by inter-institutional competition over regulatory dominance and over resources. Since the same group of actors will not support two or more institutions with identical regulatory functions over time, each international governance institution requires its own functional niche. Drawing on organizational ecology, it is argued that institutions react by specialization, seeking to monopolize certain functions, while possibly giving up other ones. Institutions will tend to specialize on the functions in which they have a comparative regulatory advantage vis-à-vis other institutions in the institutional complex (section 3).

An institutionalized division of labor emerges from specialization that constitutes the core of an interlocking structure within a regime complex. It reflects an ordering principle of a complex and assigns specific governance functions to the component institutions involved, thus creating separate functional niches for these institutions and defining their delimitation. Most frequently, such a division of labor emerges spontaneously from repeated institutional interaction, but it may also originate from an inter-institutional agreement or – rarely – from separate negotiations of constituent actors. The division of labor creates an interlocking structure of international governance that comprises the substantive rules of the component institutions as configured by the ordering principle of the complex (section 4).

The analytical power of the concept is illustrated by an empirical analysis of the institutional complex of trade and the environment. The regulation of environmentally motivated trade restrictions has been disputed for many years between the world trade system (GATT/WTO) and a number of multilateral environmental agreements (MEAs). More recently, a division of labor has evolved from continuing disruptive interaction between the institutions involved that assigns clearly delimited governance functions to these institutions and produces a remarkably coherent interlocking structure (section 5).

## **2. Theoretical Foundations for a Concept of the Dynamics of Institutional Complexes and its Structural Effects**

Two fundamental issues have to be addressed before dwelling on the dynamics and structural effects of complexes of international governance institutions in the next sections. As we set out to identify structural properties of institutional complexes, we first discuss how one can conceive of such emergent structures and how they can be accommodated within the actor-centered framework of international relations analysis (2.1). As we intend to examine the dynamics of institutional complexes, we then develop, against the backdrop of the organizational ecology literature, some general ideas of the driving forces of such dynamics within populations of institutions (2.2).

### *2.1. Meta-Structures of Institutional Complexes*

At the most general level, interaction among the international institutions may, in one way or another, produce a meta-structure that enshrines some ordering principle of an institutional complex. The search for an interlocking structure of governance will only make sense, if the latter comprises more, or is different from, the aggregate of governance

structures of the component institutions. Hence, we have to tackle the question of whether we can conceive of structural elements of an institutional complex that cannot be reduced to its component institutions, even though these institutions evidently form an important part of such complexes and do not lose their separate existence when becoming part of a larger complex.

If a new structure evolves from repeated interaction among the component institutions of an institutional complex, it will reflect emergent system properties that cannot simply be reduced to the component institutions (Willke 1996: 139, Wendt 1999: 146-155). Emergence of a system property may be defined as the sudden appearance of a new quality that cannot be traced back to the properties or relations of the components involved, but may only be explained by the specific dynamics of a self-organizing process (Küppers/Krohn 1992: 7-8, Sawyer 2001) The properties reflected in the newly emerging structure do not lead to an expansion of the options available to the components. Rather, they restrict these options to the configuration of interdependent characteristics of the components that produce the emergent quality as such (Willke 1996: 84).

Although this has been hardly realized in international relations theory, the emergence of system properties is a widespread phenomenon. It is well-known in the natural sciences, that a molecule (like water) has quite different properties from its component atoms (like oxygen and hydrogen), the properties of a cell are different from those of the molecules involved, and a living organism is different from the aggregate of relevant cells (vgl. Willke 1996: 134-166). At first glance, it might seem difficult to accommodate this phenomenon within the dominant micro-foundation of international relations theory. But this impression is misleading. The structure of the international system in Waltzian neo-realism (Waltz 1979) emerges from particular constellations of states and their interaction, while it cannot be reduced to the properties of these component units. Likewise, cooperation theory (Keohane 1984, Stein 1982, Martin 1993) identifies a number of particular constellations, such as the Prisoners' Dilemma, which emerge from interaction among the actors involved, while not consisting of, nor comprising these actions. Hence, the emergence of societal system properties is perfectly compatible with a micro-foundation of social phenomena (also Coleman 1990:1-20, Axelrod 1997).

When seeking to identify an ordering principle of an institutional complex, we look for an effect similar to the one occurring at a lower level of organization whenever an international institution emerges from interaction among relevant actors. International institutions and organizations are not made up of their members nor of any particular actions of relevant actors, but emerge from these actions as structures guiding the behavior of relevant actors. If actors establish cooperation, they produce an institutional structure that reflects behavioral prescriptions and proscriptions believed to produce an improved outcome. This structure is a collective entity that exists separately from the actors involved; it is not reducible to these actors, even though the latter are indispensable for its production and reproduction. Once having emerged from interaction among actors, it acquires an existence of its own and feeds back on (options and preferences of) these actors (Wendt 1987, 1999, Giddens 1984). This is true not only for formal (negotiated) institutions like the climate change regime or the World Trade organization (WTO), but also for spontaneously emerging ones, like the rules of international customary law. If international institutions can emerge as new entities from interaction among relevant

actors of the international system, we might think of meta-institutions emerging as new entities from interaction among the institutions of a institutional complex.

## 2.2. Dynamics within Institutional Complexes: Insights from Organizational Ecology

To obtain some idea of the dynamics within an institutional complex, we draw on the organizational ecology literature. This somewhat disparate literature is inspired by the analogy of biological ecology. While being sociologically founded, it is unfortunately mainly devoted to studying business organizations, such as organizations in the wine industry, (Swaminathan 1995), newspaper organizations (Carroll and Hannan 1989a), or Breweries (Carroll et al. 1993). Nevertheless, it draws attention to a number of aspects that are important for the study of institutional complexes.

The organizational ecology literature takes *populations of organizations*, rather than single organizations, as its units of analysis (Hannan and Freeman 1977). In contrast to traditional organization theory which focuses on the adaptation of organizations to their changing environment, the organizational ecology literature operates at a level of aggregation similar to institutional complexes. This choice of the unit of analysis has important consequences for the study of institutional complexes. It suggests that the structural patterns according to which a population of organizations develops are a relevant subject of inquiry. Thereby, it separates these patterns of a given population from all other factors that might induce organizational adaptation. In other words, this literature is based upon the assumption that structural constraints exerted by a population of organizations gain relevance for the dynamics of its member organizations (e.g. through "density dependence", Carroll and Hannan 1989).

By focusing on populations rather than single organizations, emphasis shifts from adaptation and development of single organizations to *competition* among the organizations of a population and *selection* of organizational forms. The organizational ecology literature argues that competition, not co-existence or symbiosis, constitutes the main characteristic of populations of organizations (Hannan and Carroll 1992: 26-30), because organizations compete over scarce resources. While competition, in contrast to conflict, may be latent and difficult to observe directly, it is fueled by the fact that the expansion of organizations is not inherently limited. Thus, new ones may be established, or the activities of existing ones may expand to areas previously dominated by other ones (Hannan and Freeman 1989: 91-116). Competition of scarce resources leads to selection of the most competitive organizational forms, while uncompetitive forms will generally shrink and eventually disappear. Whereas critics point to the fact that especially the biggest and most important organizations rarely die - this assumption is definitely true for international organizations -, organizational ecology emphasizes that selection does not necessarily apply to whole organizations. It may mainly apply to the selection of specific organizational forms (Carroll 1984: 73-77). The focus on selection within a population of organizations allows accounting for the typical structural inertia of organizations that preclude optimal adaptation to a changing environment. Note that this selection idea is also present in Waltzian Neorealism which assumes that states risk their survival, if not behaving according to structural constraints (Waltz 1979: 92, 134).

The organizational ecology literature argues that organizations define their specific functional niches to secure their survival. In ecology, a "*niche*" denotes a set of

environmental conditions within which a population can reproduce itself (Hutchinson 1978). It defines the position of a species or population in a broader ecosystem, i.e. that segment of a resource domain where it out-competes other local populations. In organizational analysis, the niche concept highlights the relationship between institutional features and the ability to extract the resources necessary for organizational survival (Hannan and Freeman 1977, Aldrich 1999: 226, 301-306). It is apt to grasp the dynamics of interaction among populations of organizations. It suggests that the ecological principle of competitive exclusion applies as well to international organizations. Accordingly, no two populations can occupy the same niche for a long time, because competition between them will force the weaker party either to adapt by carving out another niche or to abandon the system (Hannan and Freeman 1989: 95-97). Functional niching as the major response to competition explains why there are so many different forms of organizations (Hannan and Freeman 1977: 956), as there are so many different forms of animals (Hutchinson 1960).

Finally, the organizational ecology literature draws attention to the fact that the third stage of an evolutionary process (beside variation and selection), namely retention of a selected feature, poses a structural problem. Whereas retention of a selection refers in biological evolution processes to preservation of a selected genetic structure in the next generation, live of organizations is not inherently limited. Instead, retention requires that organizations with advantageous traits do not lose them through incremental change (Carroll 1984: 74).

To make use of this concept for study of institutional complexes, international institutions must be theoretically treated as organizations. While this constitutes apparently no problem for formal international organizations, such as the WTO, international regimes have been considered for almost three decades as normative structures ("principles, norms, rules and decision-making procedures around which actors' expectations converge..." Krasner 1982, similar Levy et al. 1995), that cannot act (respond to population pressure, or compete with other institutions) (Keohane 1989: 3-5). Yet, from a theoretical point of view, the key function of an organization is decision-making (Luhmann 2000, see also March/ Olsen 1989, ch. 2, and March/Simon 1958). Modern international regimes usually comprise impressing decision-making apparatuses that allow adopting follow-up decisions collectively, or to refine and expand the original contract in response to changing circumstances or new information; or to appraise implementation behavior and respond to instances of non-compliance, e.g. through adoption of sanctions or an offer of assistance (Gehring 2007, Churchill and Ulfstein 2000). Thus, international regimes with a permanently established organizational apparatus have all prerequisites of organizations. They constitute decision-making systems that are established and maintained by their members to produce collectively binding governance decisions for an area of international relations and develop their own intrinsic logics of operation (Koch 2009).

Organizational ecology provides a useful foundation for the theoretical and empirical exploration of the dynamics of institutional complexes and the emergence of interlocking structures. However, basing theoretical claims about the dynamics of institutional complexes on the (assumed) analogy of organizational ecology with biological ecology would have little explanatory power (see Hannan and Freeman 1977: 961-962). Required is the careful construction of a systemic theory that displays the dynamics of institutional complexes. Remaining doubts of whether the competitive exclusion principle operates as powerfully in the realm of social institutions as it does in natural ecosystems (Stokke,

forthcoming) might turn out to be a consequence of a still deficient conception of functional niches.

### **3. The Ecology of Institutional Complexes**

Against the backdrop of the organizational ecology literature, we set out to develop a theory of the ecology of institutional complexes. It addresses the question of whether competition among international institutions really dominates institutional complexes (3.1). It then elucidates the origins of this competition (3.2). Finally, it discusses whether competition may be expected to lead to functional niching and explores how such niches might look like (3.3).

#### *3.1. Competition among International Institutions*

International institutions generally exist in a competitive environment and must constantly struggle for functions and related resources that are necessary for their survival. It is a general insight from organization theory that organizations will shrink, lose their functions and resources, and may eventually even completely disappear, if they are not sufficiently well adapted to their environment (Hannan and Freeman 1989: 93). This is true for international organizations and similar institutions as well. These institutions are throughout not self-sufficient, but depend on a constant infusion of resources, such as money or attention by relevant actors. In exchange, they fulfill functions for these actors. If functions disappear, as with NATO after the end of the Cold War, or are better fulfilled elsewhere, organizations are threatened to be deprived of some or all of the resources necessary for their survival, unless they succeed in acquiring new functions and related resources (Mearsheimer 1990, for Non-governmental Organizations see Cooley/Ron 2002)). Competition must not be mixed up with open conflict. While it constitutes a continuing pressure on the component institutions of an institutional complex, it does not necessarily imply open conflict (Hannan and Carroll 1992: 26-30). Latent competition may be hidden in some form of arrangement accommodating the component institutions (see section 3.3).

Competition among international institutions concentrates on areas of overlap in terms of issues and actors. Inter-institutional competition does not ensue unless memberships overlap significantly. International institutions with separate memberships will not compete, even if performing virtually identical functions. For example, NATO and Warsaw Pact provided basically the same function, namely security, but they did so for completely different regional groups. Likewise, several institutions to protect the various regional seas, e.g. the Baltic Sea, the Mediterranean, and the Black Sea, can perfectly well co-exist alongside each other, because they provide their largely identical functions in different regional settings. Two or more institutions can struggle over performing similar or identical tasks for a similar or identical membership only if their substantive issue-areas overlap significantly. They will not compete, if the issue-areas governed by them are strictly separated from each other. Hence, the global regime for outer space and the global regime for the prevention of marine pollution from ships hardly compete with each other, even though their global memberships are largely identical.

Inter-institutional competition follows from the collective interest of the constituent member states (and possibly other constituent actors). It is difficult to conceive that a group of

actors might be prepared to support over an extended period of time two or more international governance institutions with an identical task. The maintenance of a governmental institution is always costly, at the very least in terms of money for an administrative structure (secretariat and meetings), as well as in terms of bureaucratic attention (state representatives must deal with matters related to the institution). If two institutions were maintained to actually exert governance functions in the same issue area for the same group of actors, this redundant structure would at best result in two sets of identical regulations that would do no better than a single set. The outcome would be even worse, if the institutions developed significantly different regulatory regimes, thus creating the risk of contradictory norms that might mutually undermine each other's performance. In this case, the most basic function of international institutions, namely securing stable expectations about the actors' expected behavior in given situations, were significantly hampered. Thus, running a majority of institutions for the performance of identical governance functions would create significant costs without corollary benefits. Indeed, it is difficult to identify an empirically relevant case where a group of actors has actually maintained two or more international institutions with largely identical functions over an extended period of time.

We should carefully outline the limits of this logic. It applies as well to situations in which memberships and issue areas differ, but overlap significantly. In this case, it is the subgroup of members of both or all relevant institutions that cannot have an interest in maintaining two institutions performing basically the same task within the area of overlap, with the risk of producing contradictory regulations. However, the logic is limited to the *actual* performance of regulatory functions; it does not necessarily extend to the existence of *opportunities* for possible future regulation. While it is thus difficult to image that the members of the WTO found a second institution with basically the same tasks with the intention to maintain both of them over time, a group of actors might well maintain more than one institution with a broad mandate so that there is a choice for the allocation of *future* regulatory tasks. However, this choice will have to be made in one way or another once such functions are going to be performed. Consequently, the provision of opportunities for forum shopping are not in the collective interest of a group of cooperating actors, *if this group has agreed, or if it is in the process of agreeing, on a cooperation arrangement*. Yet, this does not exclude that existing opportunities for forum shopping are exploited by individual actors in pursuit of their parochial interests (Drezner 2009). Since this form of ex-post agreement forum shopping (Busch 2007, Gantz 1999) intends to circumvent certain institutional rules or decision procedures that have been agreed upon collectively, it amounts to some mild form of free-riding.

We may conclude that, over time, a functional niche can only be occupied by exactly one international institution. That is, the numerical size of a sustainable population in a functional niche is one.

### *3.2. The Origins of Inter-institutional Competition and Institutional Interaction*

Dynamics within an institutional complex originates from developments within the component institutions. In a completely stable environment, open conflict could be expected to be gradually removed, because actors interested in the respective cooperation projects would strive for some form of accommodation of the institutions that domesticates



open conflict. Institutional complexes could be expected to develop toward a stable equilibrium over time. However, the environment is usually not stable. New governance tasks emerge, and existing ones are redefined, broadened, or otherwise modified, because perspectives and preferences of actors change, or because the balance of power among them shifts. Hence, the world of international institutions is in permanent motion that undermines the gradual emergence of a stable equilibrium (for the example of international election monitoring, see Kelley 2009). New tension and open competition among the institutions of a given institutional complex will be generated in particular by three sorts of institutional developments:

Competition will frequently be triggered and intensified unintentionally by the establishment of a new institution within an already densely populated institutional landscape (Young 1996). Creating ever new international institutions will increase the risk of overlap and competition, even if they are related to new cooperation projects in previously ungoverned issue-areas. The establishment of ever new multilateral environmental institutions triggered open conflict with the already existing world trade system (GATT/WTO) (see section 5) or with established sectoral organizations such as the International Civil Aviation Organization (ICAO, Oberthür 2003). The creation of regional trade agreements, like the European Union (EU) or the North American Free Trade Agreement (NAFTA), generates almost inevitably tensions with the world trade system (Bartels and Ortino 2006, Weiler 2000). Likewise, the simultaneous establishment of the two important international environmental regimes on climate change and on biodiversity produces tension between them (Jacquemont and Caparrós 2002).

Competition will also be triggered, if an existing institution expands its governance activities into areas traditionally governed by another institution. In many cases, this kind of interaction will be unintentional, but this does not have to be so. Expansion of the governance tasks of an existing institution may also be intended to challenge an established governance arrangement (“strategic inconsistency”, Raustiala and Victor 2004: 301). Hence, the development of a military defense policy by the European Union transformed this institution into an immediate competitor of NATO which had previously dominated the field of Western military cooperation (Hofmann 2009). And the expansion of the world trade system’s activities into the area of intellectual property rights created tensions with the World Intellectual Property Organization (WIPO), which had traditionally governed this field (Helfer 2009).

Finally, an entire institution may be established in the same or a very similarly tailored issue-area *in order* to exert influence on an existing institution that had proven to be resistant against reform or that otherwise did not meet the demand of the new institution’s constituency. A most striking example is the establishment of the North Sea Conferences during the 1980s devoted to preventing pollution of this regional sea, even though an institution with a virtually identical membership and a very similar task already existed, namely the Oslo/Paris Commission (OSPARCOM) (Skjærseth 2006). Likewise, a number of interested EU-member states founded in the 1980s the Schengen regime on the abolition of police and customs controls at the internal borders among their countries, which introduced a broad range of compensatory internal security measures. They did so *in order* to push EU decision-making in the same direction, and the Schengen regime has meanwhile been fully incorporated into the EU (den Boer 2001). The possible creation of a

new climate change regime with a limited membership within the G-20 setting discussed after the breakdown of the Copenhagen conference of 2009 is also intended to generate competition with the established global regime under the UNFCCC and Kyoto Protocol (see already Sebenius 1991). The setting up of such institutions triggers competition, even though the related governance projects point in the same, or a very similar, direction, because the existing institution is generally deprived of the functions performed by the new institution.

In all these cases, competition leads to interaction among the institutions involved. The creation or expansion of one institution changes the niche of the others (Hannan and Freeman 1989: 97). More generally, the presence of one institution changes the set of environments in which the other institutions can sustain. Oberthür and Gehring (2006b; Gehring/Oberthür 2009) identified two causal mechanisms that are relevant in this regard. First, the norms and decisions adopted within a source institution can affect the norm-molding process of a target institution, because commitments entered into under the source institution have an impact on the options available to relevant actors within the target institution (interaction through commitment). For example, adoption of environmentally motivated trade restrictions is rendered difficult by the fact that the WTO commits its global membership to several non-discrimination obligations (see section 5). Second, behavioral reactions of relevant states and non-state actors to the norms and decisions originating from the source institution may affect the conditions for implementation of the norms and decisions originating from the target institution (behavioral interaction). For example, the incentive under the Kyoto Protocol to plant fast-growing trees as sinks of carbon dioxide may thwart the goal of the Biodiversity Convention to protect traditional rain forests (Jacquement/Caparrós 2002). Strictly speaking this type of interaction occurs entirely outside the two institutions involved within their respective (overlapping) issue-areas, but it also affects functions performed by the institutions involved.

### *3.3. Functional Differentiation and Niche Selection*

Specialization is the key strategy of organizations for coping with the detrimental effects of competition. It results in the construction of separate functional niches. If an organization specializes on those functions in which it enjoys a comparative advantage in relation to competing organizations, it creates an ecological niche, in which it can out-compete rival institutions (Stokke, forthcoming). In exchange, it might give up other functions in which it is less competitive.

Specialization and the construction of functional niches may occur in very different forms. Institutions may withdraw from a particularly competitive area of overlap and focus on their remaining functions. They may specialize on separate parts of a more comprehensive problem-area. For example, one might imagine a set of different institutions for the protection of a regional sea from pollution, each of which specializes on a particular set of pollutants or sources, such as pollution from ships, pollution from land-based sources, or air-borne pollution. Likewise, one might imagine that one institution specializes on developing broad principles for governing a given problem area such as fisheries, while other institutions enact implementing regulation according to regional conditions (Stokke 2001b). Finally, a number of institutions devoted to the same policy goal might control

different instruments, such as developing commonly accepted knowledge, providing financial support, enforcement etc., and therefore specialize on particular governance tasks within a more comprehensive setting (Stokke forthcoming). As can be seen, the long-term existence of a multitude of institutions in an area such as fisheries management does not at all militate against the competitive exclusion principle as long as all institutions specialize on particular functions and can monopolize their specific functional niches.

The multitude of ways in which competing institutions may specialize and create their own functional niches explains why international institutions disappear very rarely from the international system. This extreme phenomenon cannot be expected unless two conditions are fulfilled. First, there must be overwhelming support for a concentration of the relevant functions in one institution at the expense of the other. If different groups within the membership favor different solutions, it will be difficult to completely wind up one of the competing institutions. Second, the stronger institution must cover the entire issue-area originally (co-) governed by the weaker one. Otherwise there will be remaining tasks on which the latter might specialize. In spite of these restricting conditions, some rare cases of the complete disappearance of a well-operating international system exist. For example, the Schengen regime abolishing customs controls at internal borders was completely integrated into the European Union by the Amsterdam Treaty of 1998 and thus disappeared, even though it had been quite successful (de Boer 2001).

The dynamics of specialization and the development of functional niches in a competitive environment will partly depend on the properties of the relevant international governance institutions. If the member states have broadly similar interests regarding the institutional rearrangement, an institution can exploit its own comparative advantage over competing institutions. An institution having successfully established regulation in part of the contested issue-area will likely be able to retain this authority, because, *ceteris paribus*, there will be no advantage for the constituent actors to assign successful regulation to another institution. Likewise, well-operating financial transfer mechanisms, or knowledge-gathering machineries, or strong enforcement arrangements, will likely remain within an established institutional context, because it will be, *ceteris paribus*, of advantage for the constituent actors to strengthen these mechanisms rather than deploy and re-establish them elsewhere.

Specialization will also be influenced by the interests of the constituent actors. A setting will usually comprise multiple solutions and resemble a coordination game with distributive conflict (Battle of the Sexes) (Gehring/Oberthür 2009: 137-138), in which institutions and supporting actors have mixed motives. On the one hand, they prefer coordination over costly non-coordination. On the other hand, they have differing opinions about the appropriate solution. Accordingly, the eventual division of labor becomes a matter of the distribution of power among the institutions involved and their respective supporting groups of actors. No institution will be able to monopolize all relevant regulatory functions, if the inter-institutional power relationship is balanced. In such cases, institutions will specialize on the functions in which they have a comparative regulatory advantage vis-à-vis other institutions in the regime complex. If one institution is powerful enough to monopolize all relevant regulatory functions, it will become the sole ruling institution in the issue-area. Consequently, the regulatory competence and effectiveness of all other institutions within

the regime complex will be considerably limited, in extreme cases even be completely abolished.

#### **4. Structural Effects of Specialization and Functional Niching**

##### *4.1. Emergence of an Institutionalized Division of Labor*

The process of specialization and functional niching produces, over time, a particular division of labor among the component institutions of a complex that assigns particular functions to each of these institutions. The division of labor is enshrined in an institution of a higher order that emerges as a new entity from interaction among, and mutual adaptation of, the component institutions. It is a collective entity that does not reflect inherent logics of the component institutions. It comprises a set of rules defining the specific niches occupied by the component institutions and their specialized functions within the broader system of divided labor. These rules reflect generalized expectations as to how the component institutions ought to perform their particular tasks within their respective domains in order to avoid conflict. If an institutionalized division of labor is respected within the regular operations of the component institutions, it will automatically be reproduced and stabilized. However, like any other social norms, it does not *determine* the activity of the component institutions. It will change or break down, if it is repeatedly ignored, be it unintentionally or intentionally.

An institutionalized division of labor can emerge spontaneously from repeated interaction among the institutions involved. Like all spontaneous institutions, it *evolves* from repeated interaction without a formal decision (Young 1982; Axelrod 1984). A spontaneously emerging division of labor is the least demanding, and therefore most widespread, form of coordinating two or more international institutions, because it does not require a collective decision mechanism among the relevant institutions, nor does it create severe implementation problems (Hayek 1963; Sugden 1989). Since a stream of unilateral adaptations by the component institutions creates the institutional structure enshrining a particular division of labor among them, the necessary adaptations have already occurred once the structure is eventually established. An emerging division of labor within a regime complex is spontaneously institutionalized as soon as it creates normative expectations within the component institutions that it ought to be respected.

Mutual adaptation from which a spontaneously evolving division of labor emerges will occur particularly in two different ways. Institutions may deliberately withdraw from exercising specific functions which are thereby left to competing institutions. They may also exercise their functions in ways that take account of the needs and restrictions of other institutions. In some cases, international institutions can adapt themselves, without prior inter-governmental decisions, to a competing environment, for example through decisions of their secretariats within their competence or through their dispute settlement mechanisms. In other cases, adaptation will occur through inter-governmental decisions and the design or amendment of international treaties. International institutions can support coordination through appropriate systems of information exchange (Oberthür 2001). After all, meaningful adaptation to the needs and restrictions of other institutions, the development of specialized functions, within an institutional complex presupposes that these needs and restrictions are correctly perceived within a given institution.

An institutionalized division of labor can also emerge from negotiations among the component institutions involved in a regime complex. This form of inter-institutional coordination allows a deliberate design of the relationship of, and division of labor among, the institutions involved. Yet, it is far more demanding than coordination through unilateral adaptation, because it presupposes that the respective institutions are authorized to negotiate, and subsequently implement, an inter-institutional agreement. It implies that the member states of the component institutions delegate this authority to the institution and, thus, supra-nationalize the originally inter-governmental institutions. Especially in respect of regulatory institutions, any binding inter-institutional agreement might interfere with established rights and obligations enshrined in relevant treaties of the component institutions. For example, the World Trade Organization cannot simply negotiate with relevant environmental treaty systems an agreement settling the lasting conflict over environmentally motivated trade restrictions (see section 5), because both sides do not enjoy the competence to enact the necessary adaptations of the treaties agreed upon by the constituencies of the component institutions. In contrast, coordination through inter-institutional negotiations and agreement does occur, where secretariats enjoy considerable freedom in their operation, or where a given institution delegates certain functions explicitly to another institution. For example, the Montreal Protocol has concluded a number of inter-institutional agreements that involve other institutions, such as the World Bank, the United Nations Environment Program, and the United Nations Development Program, in the operation of the multilateral fund established under the Protocol (DeSombre and Kauffman 1996). Likewise, the Biodiversity Convention and the climate change regime have assigned their funding mechanisms to the Global Environment Facility through inter-institutional agreements defining the terms of operation (Fairman 1986). In these cases, the division of labor among the institutions involved is a product of deliberate design.

Finally, a division of labor might be established through a separately negotiated super-institution agreed upon by the actors concerned. It is characteristic for this form of inter-institutional coordination, that the relevant actors (in particular member states) act separately within either of the component institutions involved and within the separately established super-institution. Even though decision-making remains fully under control of the actors involved, this is a particularly demanding form of inter-institutional coordination, because it subordinates relevant international institutions under an overarching super-institution enshrining a deliberately established division of labor. As a very consequence of their subordination, the component institutions lose their independence. We are not aware of any such superstructure that has been deliberately established to institutionalize a division of labor among originally independent component institutions of a given regime complex. The frequently proposed project to integrate several global environmental regimes, e.g. on biodiversity, climate change and protection of the ozone layer, within a comprehensive World Trade Organization sheds light on the problems and costs involved (Biermann 2005, Oberthür/Gehring 2005).

If an institutional complex comprises an institutional superstructure, it will subordinate the component institutions under this structure and remove the independence. Many international institutions combine within their institutional framework sectoral regimes that operate quite separately from each other according to their distinct rules. For example, the different policies of the European Union, e.g. single market policy, agricultural policy,

environmental policy, are separately institutionalized under the European treaties, while being subordinated under a unitary institutional framework that assigns specific functions to these sectors (Wallace et al. 2006). Conflict over competences will eventually be settled by the mandatory decision of the European Court of Justice. The same is true for the different components of the world trade system, e.g. GATT, GATS, and TRIPS (Jackson 1999). And the various pollution-specific protocols on long-range air pollution in Europe and North America are part of the unitary framework of the Convention on Long-range Transboundary Air Pollution (Levy 1993).

Pertinent rules and mechanisms of international law are hardly in use. All international institutions are integrated into the overarching institutional structure of international law (Schermers/Blokker 2003), especially international treaty law. This structure provides some basic collision rules for the settlement of inter-institutional conflict. It envisages, for example, a priority of the more special over the more general rule (*lex specialis*, ) and of the newer over the older rule (*lex posterior*). Moreover, the international legal system offers judicial settlement of such conflicts through the International Court of Justice (ICJ). Yet, these rules are far too general to settle inter-institutional conflicts (on the irrelevance of the *lex posterior* principle for the development of the conflict between the WTO and multilateral environmental agreements on trade restrictions, see Safrin 2002a: 624). Moreover, member states refrain from submitting conflicts related to the collision of international governance institutions to the ICJ. Hence, states tend to defend the autonomy of separately established international institutions and reject their treatment as a component of the overarching international legal system, when dealing with matters of the division of labor among the institutions of a regime complex.

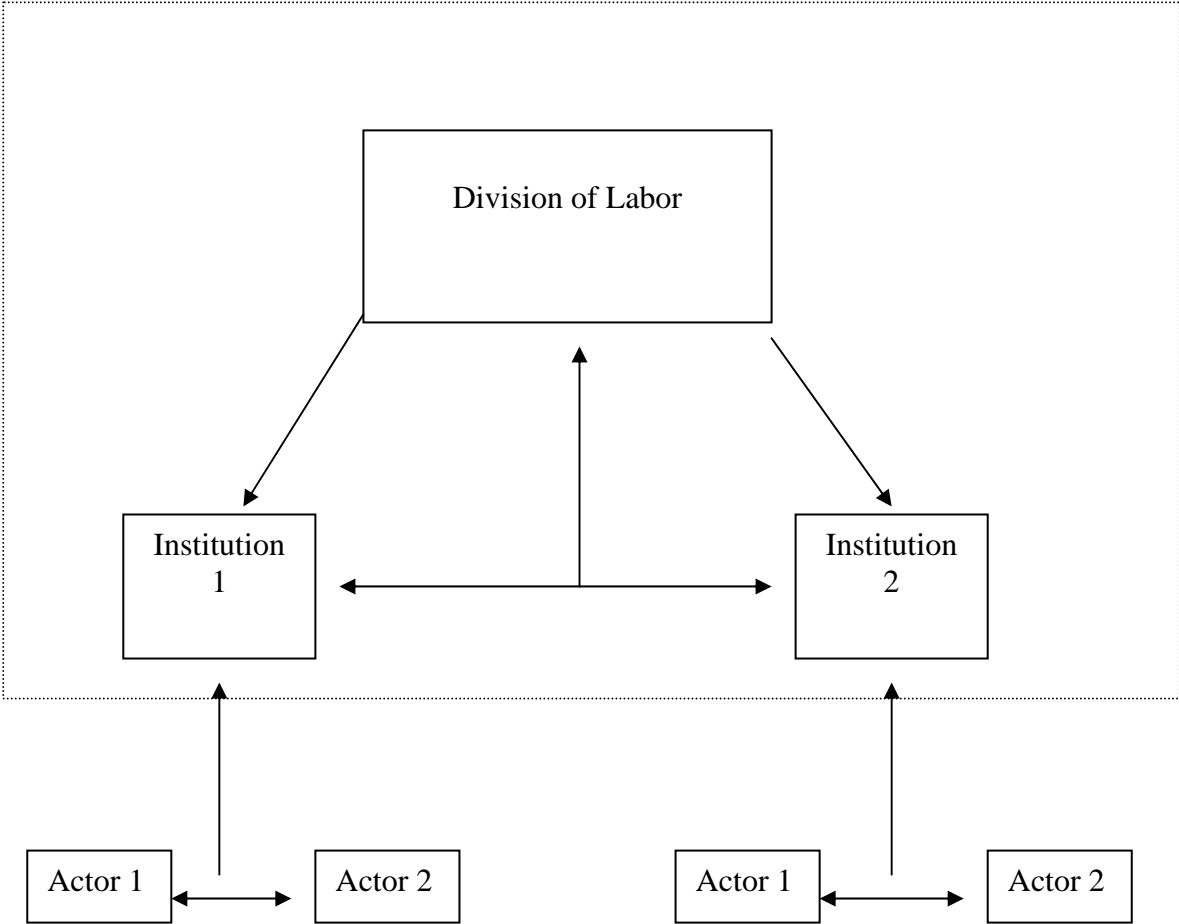
It may be concluded that, in practice, the structures institutionalizing divisions of labor among international institutions will emerge almost certainly from interaction among the component institutions and *not* directly from interaction among states and non-state actors (Raustiala and Victor 2004: 295–305). Actors have a *direct* access to the shape and design of a division of labor among relevant institutions only in the rare cases in which they endeavor to establish a mandatory superstructure subordinating the component institutions. In all other cases, they can directly influence only the shape and design of the component institutions, while being deprived of direct access to the met-institution that enshrines the emerging division of labor among the institutions of an institutional complex. Although the activities of respective member states and possibly other relevant actors drive the coordination efforts which may eventually lead to an institutionalized division of labor, any such activity must be targeted at appropriate internal operations of one of the component institutions, e.g. a decision on a unilateral adaptation, or on a negotiating mandate or an offer or the demand of a concession within an inter-institutional negotiation process.

#### *4.2. The Result: An Interlocking Governance Structure*

An institutionalized division of labor among the component institutions of a complex produces an interlocking governance structure (Underdal and Young 2004: 374–375). This structure is the aggregate result of the institutions involved, not another new entity of international relations. On the one hand, it includes the component institutions with their issue areas-specific substantive rules and decision-making apparatuses. On the other

hand, it comprises an institutionalized division of labor, which provides a systemic ordering principle and allocates specific functions to the component institutions. Accordingly, all substantive rights and obligations of an interlocking governance structure originate from, and governance functions within this structure are performed by, the component institutions. The cluster of issue area-specific component institutions is supplemented by the newly emerging division of labor, i.e. a meta-institution with the sole purpose of defining the relation among the component institutions and their specific functions within the competitive areas of substantive overlap. Figure 1 illustrates the configuration of the component institutions, the institutionalized division of labor and the interlocking governance structure.

Figure 1: An interlocking Governance Structure



The intensity of conflict is severely reduced in areas of international relations that are governed by an interlocking structure, and inter-institutional competition is rendered latent. Assigning governance functions to the component institutions involved, an institutionalized division of labor defines a separate functional niche for every component institution of the interlocking structure. As long as it is respected in the operations of the component institutions, open inter-institutional conflict is abolished, because the definition of separate functional niches removes all functional overlap, even if several institutions co-govern an issue-area. An evolving division of labor is expected to be quite stable, even if it is not

avored by all institutions and their constituencies alike, because both institutions and supporting groups of actors are in a Battle of the Sexes situation. In such situations, no side can benefit from unilateral defection, as long as circumstances do not significantly change. However, competition lasts in latent form. An established division of labor may be challenged by any interested side at any time, if circumstances have sufficiently changed to modify the distribution of power among the institutions involved and their supporting groups of actors. Hence, the absence of open conflict in an interlocking structure ought not to lead to the conclusion that competition has been eliminated altogether.

Due to its complex nature, the empirical investigation of an interlocking structure creates a number of problems. First, it requires a systemic perspective focusing on the collaboration and coordination of the component institutions within an institutional complex beside a focus on the separate operations of the component institutions. Second, an existing division of labor will frequently not be clearly visible, because it has emerged spontaneously and is not formally codified anywhere. If it is well-established, widely accepted and, therefore, not challenged, it may not even seem to restrict the operations of the component institutions at all. Accordingly, assessing the existence and relevance of a well-established division of labor requires an answer to the counterfactual question of what would happen, if one of the component institutions dared to expand its activity into areas belonging to the niches of other institutions of the complex. If such a move can be expected to be perceived as a hostile act and create conflict, we may conclude that an institutionalized division of labor exists and that it restricts the activities of the component institutions. Third, competition is also difficult to assess in an interlocking governance structure that is effectively ordered by an institutionalized division of labor. If open conflict is eliminated, competition is rendered largely invisible (Hannan and Carroll 1992: 29-30). To establish the existence of latent competition, one will once again have to answer the counterfactual question of what can be expected to happen, if one of the component institutions chooses to expand its functional niche according to its internal needs into areas belonging to the functional niches of other institutions within the complex. In contrast, open conflict and tension over the delimitation of functional niches points to an unsettled competitive situation, and that is, to the absence of an accepted division of labor among the relevant component institutions.

## **5. Division of Labor in the Institutional Complex of Trade and the Environment**

The applicability of the concept will be illustrated by an investigation of the institutional complex of trade and the environment. This area of international relations is prone to inter-institutional conflict (Farber/Hudec 1996, Brack 2002), because environmentally motivated trade restrictions are claimed to be governed both by the world trade system (GATT/WTO) and by multilateral environmental agreements (MEAs) (for a more extensive review of this process, see Gehring forthcoming).

### *5.1. The Origins of Inter-institutional Competition: Contest of an Established Governance Niche*

Authority to govern trade restrictions was initially fully assigned to the world trade system. The General Agreement on Tariffs and Trade (GATT), adopted in 1947, aimed to gradually remove national tariffs and non-tariff trade restrictions. Its core normative structure



(Jackson 1999: 31–49) is reflected in a couple of general non-discrimination provisions. According to the principle of equal treatment, states may not subject imported products to more restrictive regulation or taxation than comparable domestic products (Jackson 1999: 208–228). According to the most favored nations principle, member states shall extend to all other GATT/WTO member states any trade privilege they grant to any country, whether member state or not (Hoekman and Kostecki 1995: 26). More recently, GATT has been supplemented with several additional agreements, including the Agreement on Sanitary and Phytosanitary Measures (SPS), which prohibits the domestic regulation of certain products, in particular of foodstuffs, feed, seeds, as well as living animals and plants, unless such regulation is based upon a scientific risk assessment or upon a product-specific international agreement or standard (Victor 2000). The few exemptions for environmental purposes of the GATT Agreement (Art XX) have been interpreted very restrictively by GATT/WTO dispute settlement panels, which repeatedly rejected environmentally motivated trade restrictions that were in conflict with the GATT non-discrimination obligations (Kingsbury 1995; Howse and Trebilcock 1997; Schoenbaum 2002: 701–702). In a widely recognized decision, a panel argued that, if contracting parties were permitted “to impose trade embargoes so as to force other countries to change their policies within their jurisdiction ..., the objectives of the General Agreement would be seriously impaired” (GATT 1994: para. 5.38, emphasis added).

The predominance of GATT/WTO authority over regulation of environmentally motivated trade restrictions has been increasingly challenged by the establishment of MEAs targeting at, or comprising, such restrictions. A WTO compilation with trade measures lists some twenty sector-specific MEAs that comprise trade measures (WTO, 2007). Some MEAs aim expressly to restrict environmentally problematic segments of international trade. For example, the Basel Convention prohibits trade in hazardous wastes between member states and non-member states, as well as, upon a decision of the Conference of the Parties, between OECD countries and non-OECD countries (Kummer 1995). Other MEAs, like the Montreal Protocol (Benedick 1995: 91–92) and the Convention for the Conservation of Atlantic Tunas (ICCAT), put in place trade sanctions and limited boycotts against non-compliant members of the regime and other states in order to enforce their obligations. Trade sanctions might be employed in almost any standard-setting international institution to increase compliance with costly obligations (Howse and Trebilcock 1997: 192–208).

The claim of authority to regulate environmentally motivated trade restrictions by MEAs blurred the previous clear delimitation of functional niches and created a functional overlap. As expected, overlap of functional niches generated open conflict over regulatory authority in spite of the fact that many MEAs and GATT/WTO have a largely identical global membership.

The WTO undermines the effectiveness of MEAs by creating incentives for cost-effective but possibly environmentally detrimental production. The GATT non-discrimination clauses largely rule out “process and production measures” (Farber and Hudec 1996). Member states are prohibited from making the import of a good conditional upon the particular way in which it is produced or upon the existence of, and compliance with, appropriate regulations for the protection of the environment, even if they require domestic producers to fulfill these regulations. Thus, non-discrimination obligations create an incentive for free

riding especially with respect to the protection of public goods, like the ozone layer, the global climate, or collectively exploited fish resources (Sandler 1997: 23–51), because they ensure that goods produced cheaply within the jurisdiction of environmental free riders may be freely exported to the markets of cooperating countries, whose domestic producers bear the costs of environmental protection.

Environmentally motivated trade restrictions of MEAs provide, in turn, an incentive for ignoring trade-liberalizing WTO obligations. Multilateral trade restrictions usually introduce some obligation to discriminate against goods according to their countries of origin. For example, the Basel Convention requires OECD countries to discriminate against exports of such wastes according to the country of destination, as it prohibits the export of certain wastes from OECD countries to non-OECD countries in order to protect the latter from environmentally dangerous substances (Kummer 1995). Discrimination is even more obvious, if trade restrictions are employed to enforce MEA obligations. The Montreal Protocol on Substances that Deplete the Ozone Layer (Werksman 1996) or ICCAT (Palmer et al. 2006) commit member states to suspend trade in certain goods with identified non-compliant countries and, thus, to discriminate openly against goods originating from one or more specified countries, irrespective of product quality.

### *5.2. Unilateral Adaptation of the Institutions Involved*

The widespread occurrence of disruptive interaction in the trade/environment overlap creates a demand for the clear-cut allocation of competencies (Brack 2002: 340–342) and triggered a process of gradual unilateral adaptation of the institutions involved without a grand design of an appropriate division of labor.

The constellation of interests within negotiations on the establishment or elaboration of MEAs with environmental trade restrictions is characterized by mixed motives. Most MEA member states are also members of GATT/WTO and virtually none of them can have an overall interest in the mutual disruption of the institutions of this complex. Hence, there will be wide support for *some kind* of accommodation of the divergent governance projects, whereas preferences as to the appropriate coordination solution will differ significantly. This amounts to a typical Battle of the Sexes constellation (Gehring / Oberthür 2006). Whereas a camp of environmentalists typically favors adoption of trade restrictions to reinforce MEAs irrespective of their implications for free trade, and a camp of free traders will seek to preclude adoption of almost any trade restrictions for environmental purposes, a camp of indifferent states will advocate not pursuing one of the competing goals at the expense of the other. Due to the broad support required for virtually all relevant decisions of international institutions, moderate solutions will usually prevail over radical ones. The proposal to adopt a radical trade restriction can be expected to meet with resistance not only by the free traders but also by the group of indifferent countries. In contrast, a moderate proposal that seeks to minimize the negative implications of an environmentally motivated trade restriction on international trade will gather support not only by the group of indifferent countries, but also by environmental radicals that have to compare the moderate proposal with the no-agreement alternative. In short, the veto power of the camps of both the free traders and the indifferent actors drives new decisions within MEAs toward adaptation to free trade interests.

Unilateral responses of MEAs to inter-institutional competition within the trade and environment overlap appear in the form of the “chill-effect” (Brack 2002, Eckersley 2004). The rules and norms of many MEAs reflect this effect. Negotiations of the Cartagena Protocol (Bail et al. 2002) were not only burdened with lasting tensions about a “savings clause” intended to govern the relationship between the Protocol and the WTO (Safrin 2002b). Relevant provisions of the Protocol (in particular with respect to risk assessment, precaution, and socio-economic considerations) largely match and elaborate those of the SPS Agreement, so that both instruments can be interpreted in mutually supportive ways (Palmer et al. 2006, Oberthür / Gehring 2006c, Falkner 2002). Likewise, trade-related enforcement mechanisms are frequently designed so as to minimize the detrimental effects on world trade. To bring the trade sanctions of the Montreal Protocol somewhat in line with the WTO obligations and preclude undue discrimination of non-member states, countries behaving like complying member states may apply for exemptions from the restriction (Werksman 1996). ICCAT applies its trade restrictions equally prudently (see Palmer et al. 2006: 195–200).

The world trade system is no less responsive to inter-institutional competition within the trade and environment overlap, even though unilateral adaptation is less visible. The general constellation of interests is largely identical to that of MEA negotiations, because it relates to the same set of subjects and a largely identical group of actors. Whereas free traders will advocate the predominance of the world trade system, environmentalists will prefer a retreat of the WTO from the regulation of environmentally motivated trade restrictions and a group of indifferent actors will seek to avoid pursuit of one goal at the expense of the other. However, the world trade system comprises a fully elaborated set of rules and obligations. At stake is, therefore, not so much the adoption of new rules from scratch, as the amendment of existing rules. Against the backdrop of this specific default condition, free traders can simply block amendments, because their main interest is already enshrined in international rules and compromise would not serve their interests. This explains the difficulty of solving the trade and environment tension by negotiation within the current Doha world trade round.

Adaptation is visible in the retreat of the WTO from specifying its own general rules and obligations. When the Convention on Biological Diversity (CBD) began in 1995 to assume regulatory authority on trade in living genetically modified organisms (GMOs), proposals for regulating biotechnology under the WTO in the run-up to the WTO ministerial conference in Seattle (Falkner 2000: 305) were successfully rejected in particular by interested countries with explicit reference to the ongoing negotiations under the CBD (Palmer et al. 2006). As a result, the WTO lost, at least for the moment, its ability to elaborate detailed rules for the sub-area of trade in GMOs.

Even more important is the acceptance of the tacit redefinition of WTO rules through numerous environmentally motivated multilateral trade measures. Member states of a given MEA gain an interest in the accommodation of contradictory obligations through a tacit reinterpretation of world trade law, because specific trade restrictions commit them to clear-cut duties that are less open to interpretation than the broadly defined provisions of the world trade system. The costs of this implicit consent are negligible for these states, because they have already agreed to the trade measures at stake. Due to the broad membership of several MEAs with trade-restricting provisions, virtually all WTO member

states are committed at least to some environmentally motivated multilateral trade restrictions. Although trade sanctions and other trade-related provisions create particular difficulties if restrictions are imposed on members of GATT/WTO which are not members of the respective standard-setting institution (GATT 1992: paras. 13–37), environmentally motivated trade restrictions are unlikely to be declared incompatible with GATT requirements. A panel would have to argue that trade measures agreed upon by the possibly almost global membership of a relevant MEA were not necessary to protect human, animal, or plant life or health according to the GATT exemptions (Sands 2003: 944–946). In fact, no state has so far challenged multilateral environmentally motivated multilateral trade measures under the WTO's dispute settlement mechanism (Brack 2002: 334).

The tendency to accept the tacit redefinition of the world trade system upon decisions adopted within relevant MEAs is reflected in a remarkable change of GATT/WTO jurisprudence on the trade/environment dispute. In a famous case (“shrimp/turtle”), the WTO Appellate Body rejected the previously well-established interpretation that GATT obligations rule out process-oriented requirements for import products (WTO 1998: para. 121, see also section 3). Holding that the world trade system aims to ensure that the interests of the importing state to enact meaningful environmental protection measures are weighted against the interests of the exporting states to accede to the import market (WTO 1998: para. 156), it developed criteria of compatibility of trade-restricting measures with GATT rules (Hansen 1999: 1057). Accordingly, trade measures must (1) aim to protect a legitimate object; (2) be reasonably closely related to achieving this task; (3) treat domestic and foreign producers as well as producers from different exporting countries equally; and (4) reasonably take into account the interests of adversely affected states, e.g. through serious attempts to reach a negotiated solution with these states. Most of these conditions will usually be fulfilled, if trade sanctions emerge from an MEA (Howse and Regan 2000).

The partial adaptation both sides of the trade/environment conflict to the needs of the other side may be explained by the constellation of power among the institutions involved. While the pressure to accommodate the institutions and transfer open conflict into latent competition may be attributed to the general interest of a largely identical membership not to thwart its own governance projects, different solutions were conceivable. In principle, governance of the trade/environment overlap could have been completely assigned to either side of the divide (Brack 2002: 341–342). However, the comparatively even distribution of power between the two major interests involved militated against this solution. While the WTO has proven too weak to protect itself against an increasing number of environmentally motivated trade restrictions originating from MEAs, these institutions could not induce the WTO to abandon regulation of environmentally motivated trade restrictions, possibly through selective waivers (Schoenbaum 2002: 706). Both institutions were supported by strong partisan communities. Likewise, it was unconceivable that the WTO develops its own environmental policy to flank its market integration policy, as the European Union does, because this would dramatically strengthen the already powerful WTO and turn it into something like a socio-economic world government.

### 5.3 Emergence of a Division of Labor and a Resulting Interlocking Governance Structure

A division of labor evolves gradually from a process of unilateral adaptations of the component institutions of this institutional complex. These adaptations have been fueled by the continuing struggle of over regulation of environmentally motivated trade measures. This division of labor is now firmly established. As any social norm, it may be challenged in the future through strategic inconsistency, but any such challenge would almost certainly end the period of latent competition and reopen conflict among the institutions involved. As a spontaneous meta-institution it has not been negotiated, and it is not the product of overall design. It is the joint result of numerous decisions made within the component institutions of this complex and by the addressees of their sector-specific governance regimes (Raustiala / Victor 2004: 295-305), although it is reflected in the relevant WTO jurisprudence on the trade/environment conflict, especially the “shrimp/turtle case” (WTO 1998).

The division of labor assigns permanent governance functions within the trade/environment overlap to the WTO and to relevant MEAs. Instead of separating the respective issue-areas sectorally, it removes *functional* overlaps and constructs clearly delimited functional niches for the institutions involved. The WTO performs the function of developing strategies for shaping and employing environmentally motivated trade restrictions so as to minimize their disruptive effects on free trade. As a corollary, it has to give up its original claim to prioritize free trade over environmental protection and recognize that there are important policies beyond free trade. Moreover, it sacrifices its influence on the content of decisions on trade restrictions as instruments of international environmental policy-making, if certain general conditions are met (Charnovitz 2002). MEAs perform the function of defining the areas of environmental policy-making in which trade restrictions shall be employed, as well as the precise shape of these instruments. As a corollary, they have to recognize that trade restrictions ought to be molded so as to minimize the disruptive effects on international trade.

This division of labor creates an interlocking structure of remarkable coherence. The general framework is established under the comprehensive world trade system with its GATT non-discrimination obligations and its condition to apply sanitary and phytosanitary product regulation only if scientific knowledge so warrants. MEA-related environmental trade measures fulfill an informal *lex specialis* function, introducing issue-specific and clearly defined exemptions to the more general WTO obligations (Wolfrum/Matz 2003: 155–158). For example, the ban on exports of certain wastes from OECD countries to non-OECD countries under the Basel Convention exempts OECD states in this specific field implicitly from the GATT most favored nations obligation and from the ban on export quotas. Likewise, the Cartagena Biosafety Protocol governing international trade in GMOs spells out detailed rules on a particular sub-set of specific risks that are also subject to the more general rules of the WTO SPS Agreement. In doing so, the Protocol tacitly broadens environmentally motivated exemptions from the general trade-enabling rules. For example, it includes environmental risks from GMOs, whereas the SPS Agreement merely deals with risks from pests and diseases (Qureshi 2000: 849).

## 5. Conclusion

This paper examines the dynamics within institutional complexes and the evolution of systemic ordering principles from interaction among the component institutions. Such effects are assumed to be located at the level of the institutional complex, not of its component institutions. Thus, conceptualizing the interlocking structures of international governance as emergent, i.e. systemic, entities requires an approach that does not exclusively focus on the single institutions involved, but accommodates a systemic perspective.

Following institutional ecology, a branch of organization theory that has been almost totally ignored in International Relations theory so far, it identifies ubiquitous patterns of functional specialization of international institutions in response to institutional interaction. Operating in a competitive environment, international institutions must struggle to secure appropriate governance functions and related resources. Institutions without governance functions may lose the support of their members and are threatened to be deprived of the resources necessary for their survival. Hence, institutions compete over functions and resources. Inter-institutional competition is fueled by the foundation of new institutions that are better equipped to fulfill existing governance functions, or that create areas of functional overlap, because they are placed within an already densely populated institutional landscape. Like biological species and populations, international institutions respond to inter-institutional competition by carving out specific functional niches which they can monopolize. Such functional niches appear in rather different forms. They might lead to a sector-specific delimitation of governance authority or to the separation of specific governance functions within a given issue-area or to specialization on the control of specific governance instruments. However a functional niche is constructed, it may only be occupied by exactly one international institution without creating open conflict over its control or its delimitation.

The process of functional specialization and the construction of functional niches will, over time, produce a division of labor among the component institutions and an interlocking structure of the institutional complex. The division of labor reflects the ordering principle of the regime complex. Its emergence and institutionalization transforms a set of competing institutions into an interlocking structure that integrates the component institutions and appears as a coherent system. It does so by limiting the operation of the component institutions so as to ensure that their operations remain within their respective functional niches and produce the configuration of institutional operations that creates the interlocking structure. The emergence of a division of labor thus abolishes open conflict among the institutions involved, because it clearly delimits functional niches. Moreover, it requires functional specialization of the component institutions and thus helps enhance the joint performance of the interlocking structure. What might appear as symbiosis or harmony among international institutions is thus the consequence of functional differentiation and the transformation of open conflict into coordinated operation of the component institutions in the shadow of latent competition.

The power of this concept is illustrated by an analysis of the emergence of a division of labor in the competitive field of environmentally motivated trade restrictions. Temporary disruption originating from uncoordinated competitive interaction between the world trade system and a number of MEAs with trade restrictions has been gradually replaced by a relatively clearly delimited division of labor among the component institutions of this

complex and an ensuing interlocking structure. What may appear from the actors' perspective as a lasting attempt to manage the detrimental effects of institutional interaction and from the perspective of the component institutions as a painful limitation of regulatory authority is discernible from the systemic perspective as the gradual emergence of a systemic ordering principle that assigns functional niches to the component institutions and thereby abolishes open conflict. The division of labor does not envisage a sectoral separation of the respective areas of regulatory authority to minimize interaction, but establishes a system that requires permanent collaboration of the component institutions and thus promises to mobilize the performance-enhancing potential of functionally differentiated governance processes. The result is a remarkably coherent interlocking structure, in which the WTO establishes the general framework and defines minimum conditions for the employment of environmentally motivated trade restrictions, while MEAs spell out the areas governed by trade restrictions as well as their precise shape and design.

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