



Teleodynamics and institutional change: The hardship of protecting the Amur tiger, big-leaf mahogany, and gray wolf



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ABSTRACT

The global biodiversity is in decline because modern societies are organized for that purpose. The design, implementation and enforcement of international, regional and national environmental policies have not helped to reverse the trend. In our paper, we analyze the hardship of protecting the gray wolf in Finland, the big-leaf mahogany in Peru, and the Amur tiger in Russia. Our comparative approach is based on the old institutional economics, and our key concept – the unit of analysis – is a transaction, i.e. enactment, practice and transfer of formal and informal rights to future benefits. Transactions challenge, disturb and re-organize the existing institutional scaffold. William Connolly (*The Fragility of Things*, 2013) and Terrence Deacon (*Incomplete Nature*, 2012) have recently argued that *teleodynamics*, the purposeful and end-directed behaviors and the reactions and disturbances in other related ententional behaviors are key to understand not only the dynamics of institutional change per se but also, and especially so, the emergent patterns of behavior resulting from resistance and adaptation. These teleodynamic consequences reveal the problems in institutional fit, i.e. how the institutional arrangements, particular customary circumstances and habitual actors fit together. We abduct three types of emerging order springing from the reactions to national biodiversity policies: (i) the practice of faking the institutional fit, (ii) the practice of disobedience; and, (iii) willingness to take part in the making of new institutional arrangements. These vary according to the purpose, working rules (set of rights) and motivation. We explain the interrelated meaning of purpose, working rules and motivation in the context of institutional fit in detail. In our cases, the fit is not exactly the one envisioned through the authoritative rules and the purpose of institutional conservation, but it is an order nevertheless, and that order is not necessarily good for endangered species.

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Introduction

Biodiversity is declining globally (Butchart et al. 2010). The most important proximate reasons for this decline are the rapid transformation and loss of habitats (Dornelas et al. 2014; Hanski 2005; Mooney & Mace 2008), and many species also suffer from direct harvest or eradication of their individuals from the wild (Salo et al. 2014), either as a by-product or deliberately. This can occur for various reasons, most common of which are the use value of these species (Newton 2008) or their perceived harm to human livelihood (Bisi et al. 2007; Inskip & Zimmermann 2009). The continuous decline in biodiversity is associated with serious global problems in

creating biodiversity policies, implementing them, and convincing industries and people to commit to them (Hiedanpää et al. 2011).

To explore the challenges of institutional design and implementation related to biodiversity conservation, we analyze three cases from three different countries showing varying mixtures of failure and success for the envisioned species conservation goals. Our cases include the protection of the gray wolf (*Canis lupus*) in Finland, the big-leaf mahogany (*Swietenia macrophylla*) in Peru, and the Amur tiger (*Panthera tigris altaica*) in Russia. Environmental change threatens all three species in our analysis, and each of the cases also poses a unique combination of underlying reasons for direct human pressure.

Our comparative approach examines the interplay of biodiversity policy and civil society and how societal arrangements for biodiversity affect and change the administrative rules and livelihoods. This task was also encouraged by the United Nations Conference on Sustainable Development (UNCSD) Rio+20 meeting.

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On a Brundtlandian pathway, the UNCSO expressed its hope that we [the representatives of States] “with the full participation of civil society, renew our commitment to sustainable development and to ensuring the promotion of an economically, socially and environmentally sustainable future for our planet and for present and future generations.” (UNCSO 2012, 2).

Our focus is on policy design and implementation and the consequent failures and surprises in species-level conservation. Our starting point is the seminal work of Young (2002, 2008) on institutional fit. According to Young (2008, 20), effective institutional arrangements need to match well the defining features of the problem they address. He (2008, 29) continues, “[b]ut no one should be under any illusion that strengthening [organizations] can solve these problems in the absence of effective efforts to get the underlying institutions right.” Sen would criticize this as transcendental institutionalism. Sen (2010, 6) argues that “in searching for perfection, transcendental institutionalism concentrates primarily on getting institutions right, and it is not directly focused on the actual societies that would ultimately emerge.” The actual emerging societies are given our critical attention here. We will apply classical institutional economics (Bromley 2006; Commons 1990) and the comparative realization-oriented approach developed by Sen (1999, 2010).

The problem

Our three exemplified nation-states represent very different traditions in terms of how each society is organized for economic provisioning. Their cultures, economies, and political and economic institutions vary, and so do their positions on the global geopolitical map of biodiversity concern. However, in the face of a global biodiversity crisis, national institutional setups and the principles of their functioning have been under rather uniform pressures in each of these countries. International treaties, such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Bern Convention, and the Convention on Biological Diversity (CBD), have increasingly established the basis for national conservation legislation. The specific national implementation processes of supranational rulings have invariably given rise to resistance and adaptive reactions in the three case countries. These international agreements have led to national disagreements with distinctive dynamics of (dis)agreement. These disagreements, in turn, have been associated with varying success in the conservation of the target species.

Finland is a liberal social-democratic Nordic country with a hundred years' tradition of representative democracy and strong confidence in an uncorrupted government. Finnish natural environments are mostly relatively species-poor boreal forests, in which the gray wolf was fairly common until the 1880s, after which it was progressively hunted to virtual extinction by the 1920s. The eradication of wolves was actively promoted by the state, e.g., through bounties offered to wolf hunters. The recovery of wolves started during the 1970s and was initially based on individuals migrating from the Soviet Union. Although stringent protection measures have been implemented since Finland's accession to the European Union in 1995, the Finnish wolf population is currently (as of winter 2013–2014) between 135 and 155 individuals and, after 35 years of protection, is not considered viable. Several real problems have emerged regarding how the strict protection of the wolf is designed, implemented, and enforced.

Peru is situated within the institutional history of the Andean Amazonian countries. It is implementing an ongoing political decentralization process in the context of a liberal market economy. Peru is a megadiverse country with vast tropical rainforests (Mittermeier et al. 1997). Big-leaf mahogany is the most sought

after of the Neotropical hardwoods, and its vast historic range stretches from Mexico to southern Amazonia. During the past decades, the species was logged to commercial extinction in practically all of its former range, except for in isolated rainforest areas in parts of Brazil, Bolivia, and Peru (Blundell & Gullison 2003; Grogan et al. 2010). Active conservation measures, particularly through the CITES, have been implemented in Peru during the last ten years and have been accompanied by decreases in both economic benefits from mahogany logging and harvest levels (Lombardi Indacochea 2013).

Russia represents a post-socialist state, and its huge size has resulted in high overall biodiversity, although large parts of the country are composed of lower-diversity boreal, subarctic, and arctic environments. The Russian population of the Amur (Siberian) tiger, which is one of the five subspecies of tiger (Nam 2005), is one of the best known examples of biodiversity under threat in the Russian Federation. The Amur tiger population saw its low in the 1940s when it was close to extinction, with 40 individuals remaining in the wild. Because of the implementation of anti-poaching efforts and other conservation measures in Russia, the Amur tiger population has recovered and is currently at approximately 400–450 individuals (Nam 2005; WWF Russia 2013).

In each of these cases, the purpose of the authoritative will has been to safeguard the existence of a species. The authorities have tried, with varying success, to establish a conservation *status* for the threatened species in question. The policy makers have faced resistance or adaptive reactions when designing and implementing these policies.

The transactional approach to rights

Young (2002) has articulated the problems posed by environmental policies in terms of institutional fit and interplay. Institutional fit refers to how societal arrangements fit the environmental problems they are intended to solve. The question concerning interplay is a question of how well different institutional arrangements work together in defining and solving environmental problems. For Young (2008, 20), institutions are the rights, rules, and decision-making procedures that guide and channel human behavior and interactions with the social and natural environments.

Young does not pay much attention to how institutions fit with already existing societal structures and processes (Vatn & Vedeld 2012). Indeed, when looking closer at problems of institutional fit, one key feature seems to be a gap between the intentions of the policy planners and the already existing societal structures and processes. According to the existing literature on institutions, this gap can be understood as a difference between formal and informal rules (North 2005), friction between the formal institutions and the organizational routines (Hodgson 1993; Nelson & Winter 1982) or, mentioned divide between the transcendental and the realization-oriented institutionalism (Sen 2010).

Our objective is to make sense of what *the gap* actually is and what happens in the gap. We do this by following institutional economics and making transaction our unit of analysis (Ramstad 1996; Rutherford 1994). According to Greif (2006, 46), a transaction is “an action taken when an entity, such as commodity, social attitude, emotion, or information is transferred from one social unit to another.” Transactions are always exercised for a purpose, for the sake of something, in order for some still absent state of affairs to become present. This approach to transactions brings the dynamic correlate of the right, power, to the theory and subsequent analysis (Commons 1990, 1995). According to Flathman (1976), it is the actual practice of rights that makes rights effective, meaningful and significant.

Institutional fit and misfit become the properties of purpose and power, resistance and adaptation. Our hypothesis is that biodiversity policies often fall short because the policy-makers fail to acknowledge the very particular and situational ways in which institutional design and policy implementation disturb the established rights already in place and create conditions for emergent phenomena. Not only the institutional economics or the mentioned critical liberals, also the theories of self-organizing systems provide grounds for understanding the complex dynamics of interdependency, conflicts of interest and order (Byrne & Callaghan 2013, 217–222; Hodgson 2004, 50–53). The theory laid down here suggests why this happens. Our purpose here is to explicate how it might happen. The findings will have practical policy implications.

Our research strategy is abductive (Bromley 2006; Paavola 2004; Peirce 1955, 150–156; Peirce 1997). We will begin with a rule, describe the result, and infer the case. The general rule is that (a) institutional misfit disturbs already existing rights or triggers new rights to emerge. By this general rule, we derive our results by answering the following empirical question: (b) What kinds of reactions – resistance and adaptive actions – have institutional adjustments and policies for the conservation of our case species triggered in Finland, Peru, and Russia? From the rule and empirical results, we infer our theoretical case: (c) how to explain an emergent order that springs from the reactive and creative expressions of power in our three case study contexts.

Materials

Legal and policy documents concerning the conservation of the three species constitute the primary empirical material for this study. In Finland, our research materials are, first, the documents deployed by the government of Finland and the European Commission during the infringement Procedure (2001–2005) (see Hiedanpää & Bromley 2011). Second, the national wolf policy documents produced by the Ministry of Agriculture and Forestry and Finnish Wildlife agency were utilized. Third, the written reactions by the wolf-critical civil society, especially the association called Taajamasusi were used as research material. The interpretative work on written documents is grounded on thirty two open-ended theme interviews conducted on the SW-Finnish wolf territories. The themes were (i) emotional aspects, (ii) reactions and actions as well as resistance and struggle in the face of the presence of the gray wolf, and (iii) suggested local solutions to the policy and management problems. The interviews were conducted during 2011–2013.

In Peru, as a starting point, we used laws, decrees and other rulings issued by the Peruvian government, as well as reports and other documents prepared by the country's relevant ministries. Second, we analyzed the reporting and documents prepared by the Peruvian CITES scientific authority for big-leaf mahogany (Faculty of Forest Sciences, Universidad Nacional Agraria La Molina). Third, we analyzed documents produced by non-governmental organizations (NGOs) such as the Environmental Investigation Agency and other international organizations such as the International Tropical Timber Organization (ITTO). The topic has also been addressed in a number of scientific articles which we also use as primary research material. In addition to the primary materials, the interpretation of the Peruvian case draws on the second author's experiences accumulated through fieldwork specifically related to the country's forest sector reform, carried out in Peruvian Amazonia during annual visits from 2005 to the present.

For Russia, the research material consists of publicly available documents provided by the authorities and non-governmental

organizations. The Russian branch of the international non-governmental environmental organization Worldwide Fund for Nature (WWF) has worked in collaboration with the Russian Ministry of Natural Resources and Ecology in the 2000s to produce an outline and action plan for the protection of the tiger in the Russian Far East. Such cooperation became commonplace in the country after the reduction of the capacities of environmental authorities and their constant reorganization with the dissolution of the Soviet Union. We have also utilized material that has been published by WWF Russia on the protection of the tiger. These data provide a comprehensive view into the formal institutions designed to help with tiger conservation, but also insights into the informal institutions and transactions hindering tiger protection. We read through this material with the aim of sorting out and abstracting the institutional setups and problems that can be identified in conservation efforts.

Dynamics of reactions

The gray wolf in Finland

When Finland entered the European Union in 1995, its challenge was to incorporate the European secondary legislation, such as the Habitats Directive (Council Directive 92/43/EEC), into its national legislation, e.g., Finland needed to incorporate the strict protection of the wolf into the Hunting Act. The strict protection of the wolf has been resisted in many ways. The opposition has manifested itself on different scales of governance, but perhaps most pointedly, the government of Finland initially encountered difficulties obeying the European Union's Habitats Directive. Finland tried to retain the national power in wolf policy issues.

The European Commission initiated an Infringement Procedure (2001–2005), in which the Finnish case appeared first to be that of non-conformity but later was found to be a bad application. The exact words of the Habitats Directive need not appear in national statutes, but the spirit and meaning of the Directive must not, however, be in doubt. The Directive stipulates that derogation from strict protection is possible when “especially significant damages” are caused, whereas the Finnish Hunting Statute referred only to “damage.” In the Finnish Hunting Statute, there were two other similar instances. As the proceedings began, the government of Finland admitted difficulties in phrasing and revised the Hunting Statute to bring the language into conformity with the Directive in the summer of 2001 (for documentation, see Hiedanpää & Bromley 2011; Borgström 2012).

Authorities in Finland displayed obedience to the European rule of law and commitment to wolf protection by preparing a wolf management plan during the last stage of the infringement procedure (MAF 2005). The Habitats Directive encourages member states to produce a management plan, but doing so is not compulsory. The preparation process involved experts, stakeholders, and the general public (Bisi & Kurki 2008), and during the process, the number of wolves increased considerably, peaking at almost 250 individuals in 2007 (Kojola et al. 2011).

Despite this effort, the Commission called Finland to the European Court of Justice (ECJ) in 2005. The ECJ gave its judgment in 2007, and Finland was found guilty of non-selective hunting of gray wolves in 2007. The judgment explicated the regional wildlife administration's problematic practices concerning the derogation. The other two charges, i.e., that Finland had not explored alternative non-lethal methods and that the level of the population size of the wolf was not favorable, were dismissed. The resistance to European rules had shifted from the governmental level to the regional administrative level (European 2007).

In response to this judgment, in 2008, Finland decentralized decisions concerning the derogation to the regional level and also outside of the hunting season to expedite the process and execute regional expertise concerning local circumstances (Metsästysasetus 2008). The purpose of this institutional adjustment was to increase the size of the wolf population that had started to decline in the winter 2007/2008. However, the wolf population size continued to decline. The administration was not the only party at fault. It was confirmed that there were no natural causes for the decline since 2006, thus, the only warranted explanation was that wolves had been illegally killed. As the government and the wildlife administration improved their actions in the face of EU pressure, the rural communities reacted and started to take the right into their own hands. The rural communities addressed the wolf problem by managing the population size by their own means (Kojola et al. 2011). However, social sustainability of this kind is not admired by the Commission or the Finnish wildlife administration (Hiedanpää et al. 2012).

As the number of wolves continued to decline, the Commission began an informal discussion with Finland in the fall of 2009 regarding the illegal killings of wolves. In response to this and to the previously issued ECJ judgment, the Finnish government introduced three legislative revisions. First, the category of severe hunting crime came into force in April 2011 (Criminal Code 2011). This adjustment allowed police-enforced tele-monitoring of suspects and introduced the threat of a minimum of four months and a maximum of four years in prison. Second, the government multi-folded the nominal values of large carnivores, especially the wolf (MAF Decree 2010). Third, the government recentralized decisions concerning the derogation to the national level, to the Finnish Wildlife Agency (FWA) in 2011. In addition, the new Wildlife and Game Administration Act (2011/158) introduced the Regional Wildlife Councils (RWC). The RWC is a formal organization constituted by up to ten members, six of whom are hunters and the rest of whom are representatives of landowners, police, regional land use planners, and traffic administration. The task of the RWC is to direct regional wildlife policy. Recall that the former board of directors of Game Management Districts held the power to make decisions concerning the derogation. The right and power to make decisions regarding the life and the death of the wolf were removed from the local level.

In December 2011, thirteen parents' associations of primary schools in SW Finland organized a petition to the Ministry of the Environment, the Ministry of Agriculture and Forestry, the Ministry of Internal Security, and the Finnish Wildlife Agency (Parental Associations 2011). For them, the Finnish wolf policy did not make sense because the wolf's habits were secured, whereas people's everyday lives were not. According to the association Taajamassusi ("Peri-urban wolf"), organized by an active member of the parents' associations in the spring of 2012, in densely populated areas, such as SW Finland, the wolves tended to be located in the wrong places. According to the association, it was both normatively and morally wrong that the right of the wolf preceded that of humans.

In response to the complaints from civil society, the government passed the "yard wolf decree" in the spring of 2013 (MAF 2013). The government created a new category according to which the derogation could happen; according to this decree, a yard wolf does not necessarily cause damages or present an acute threat to human safety, but the repetitive and continuous presence of the species creates a potential danger to humans. The first evaluation concerning the need to apply such license was given to the RWC. The criticism prevailed because the FWA made the decision according to EU-based rules and procedures of derogation. Some new powers and rights were re-assigned to the local level, but there were no practical implications of this change because it was not any easier

to kill a wolf. Conflicts about the rights of the people, the wolf and the administration continue.

The big-leaf mahogany in Peru

The first Peruvian efforts to protect mahogany date back to 1930 (Peru 2008; UNALM-ITTO 2009, p. 21), but until the turn of the millennium, such efforts produced limited results. Only the recent reform of the Peruvian forest regime (Salo et al. 2011, 2013) has given concrete attention to big-leaf mahogany. In 2000, Peru passed a new forest law (Law 27308), including a 10-year ban against mahogany logging in several Amazonian river basins.

The Peruvian forest industry resisted the new rules and often received tacit support from the authorities; when the regulations of the forest law were passed in 2001, the mahogany bans were largely ignored (EIA 2012). In many parts of the country, the timber industry also managed to delay the implementation of the new forest law, and loggers took advantage of the prevailing confusion by using fraudulent or otherwise unlawfully established contracts to extract considerable volumes of valuable timber, including mahogany (Blundell & Gullison 2003; EIA 2012). Because of factors such as difficult accessibility, dynamic and diverse environments (Salo & Toivonen 2009), an unstable normative framework (Smith et al. 2006), and the difficulty of law enforcement (EIA 2012; Sears & Pinedo-Vasquez, 2011), a high level of economic risk is present in Amazonian timber extraction, and thus, the industry claimed that any new rules should be adjusted to this local context, habitually referred to as "the Amazonian reality" (Salo et al. 2013).

In 2001, growing international pressure forced Peru to add mahogany to the CITES Appendix III (Grogan & Barreto 2005), and in 2002, mahogany was listed in the CITES Appendix II, against the will of the main mahogany-producing countries of Bolivia, Brazil, and Peru (Blundell & Gullison 2003). In Peru, the opposition to the listing was particularly strong in the Amazonian timber industry but nevertheless the listing took effect in 2003. However, reliable information was still lacking regarding the legal status of Peruvian mahogany shipments and the country's mahogany stocks and harvest levels (Grogan & Schulze 2008; Kometter et al. 2004).

In the early 2000s, Peru was the world's leading wild mahogany exporter, and the industry was booming. Although the official exports soon decreased, from over 50,000 m³ in 2002 to 30,000 m³ in 2004 (Lombardi Indacochea 2013), the dwindling stocks and mounting international pressure finally forced Peru to implement export quotas in 2005 (Youatt & Cmar 2009). Soon, the CITES Standing Committee for mahogany ordered a drastic reduction of the quota from over 23,000 m³ in 2006 to less than 5000 m³ in 2007 (Ibid).

In 2007, the Peru–US Free Trade Agreement was amended to improve Peruvian forest governance. This, however, coincided with the delegation of decision-making rights from the Peruvian central government to regional governments, thus weakening the enforcement capacities of the forest authorities (EIA 2012). In 2008, the main importer of Peruvian mahogany, the US, modified its import legislation, obliging the importers to verify the legal origin of timber (Youatt & Cmar 2009). That same year, the Peruvian mahogany export quota became based on the number of trees felled and not just the timber volume.

Despite the new forest legislation and mahogany's status as a CITES Appendix II species, old habits well adapted to the "Amazonian reality" have shown resilience. Sears and Pinedo-Vásquez stress the importance of relationships between different actors and the adaptation of these actors to the new Peruvian forest regime (Sears & Pinedo-Vasquez, 2011). The complexity inherent in the timber production chain is exacerbated by the administrative steps required to govern that chain. One related adaptation has been the expansion of a group of forest consultants that help move the

timber through the legal jungle (Sears & Pinedo-Vasquez, 2011). These professionals are often ex-officials of forest authorities or environmental NGOs with first-hand information on the administrative apparatus, including its weaknesses.

There are many ways to fake compliance with the rules. First, more trees than the number authorized can be felled by inflating the volume of timber obtained from authorized fellings. Second, logging documents for real trees can be traded to fell unauthorized trees elsewhere. Third, fabricated inventories can be used to trade documents for felling trees (EIA 2010). The first method has now been made more difficult to implement by the use of tree quotas and by an incipient revision of conversion factors from the standing volume, whereas the latter two methods are increasingly targeted by ground-truthing missions to verify stumps. The Peruvian Criminal Code was also modified in 2009 to harden sanctions for illegal logging, including expansion of the definition of logging so that it encompasses not just extraction but rather the whole commodity chain.

The struggle over dwindling mahogany stocks remained heated as compliance with the rules was increasingly monitored in the field. As the results of monitoring started to be revealed, the international CITES authorities chose their wording about the Peruvian situation carefully. Peru was said to have taken important steps forward, but the status of mahogany's commodity chain was still dubious. At the same time, another international organization, the US-based Environmental Investigation Agency, was closely following mahogany extraction and trade and collecting data for a report that would denounce the forest industry on the basis of widespread fraud (EIA 2012). Also Finer et al. (2014) found that during the last decade the majority of Peruvian forest concessions have been suspected of serious violations of the forest law by the authorities. Almost a third of all concession contracts have been canceled on this basis. Only a minor part of all violations are related to mahogany, however.

In 2010, the CITES Standing Committee notified Peru that although the country had made efforts in controlling the legal origin of logged mahogany (lawful acquisition findings), Peru's compliance in protecting the species (non-detriment findings) was questionable. The Committee gave Peru an ultimatum: failing to show real compliance would lead to the suspension of export trade in Peruvian mahogany. In 2011, CITES acknowledged Peru's efforts in the matter, and exports continued. During the last few years, the control and monitoring of mahogany harvest have improved. The verification of all mahogany trees prior to felling, and their stumps after felling, has become increasingly feasible, and for the year 2013, the felling of only 236 trees in a total of nine sites was authorized (Lombardi Indacochea 2013). At the same time, officially recorded mahogany-based revenues have shrunk. It is likely, however, that mahogany is also exported completely illegally by being identified as some other timber species, as has been shown in Brazil (Chimeli & Boyd 2010).

The Amur tiger in Russia

The Amur tiger population is located in the Russian Far East, in the Primorsk Krai and Khabarovsk Krai regions, between the Chinese border and the Sea of Japan. The area the tigers inhabit today covers approximately 180,000 km² (Ministerstvo prirodnikh resursov i ekologii Rossiyskoy Federatsii 2010). Hunting tigers was a habit amongst Russian settlers until the early 21st century, although it was culturally banned among native inhabitants. The species had become almost extinct when the Soviet Union committed itself to conservation of the species in 1947, and hunting was criminalized. Formally, the right to kill was transferred from the locals to the state. The population gradually recovered to reach approximately 400 individuals by the 1970s. However, the

dissolution of the Soviet Union in 1991 caused the population to dwindle again because of erosion of the institutions enforcing conservation measures. The inability to control the human impact on tiger populations led to the transfer of de facto rights, in practice, back to the unofficial sphere, and illegal hunting for financial benefit increased.

During the 1990s, transnational non-governmental organizations assumed a leading role in tiger conservation by establishing tiger conservation programs in the Russian Far East. For the WWF office in Vladivostok, preserving the Amur tiger was a primary goal before forest protection was implemented (Tysiachniouk & Reisman 2006), and the WWF gradually turned its efforts to preventing illegal logging that it saw as a severe threat to the tiger population. This involvement of NGOs is in line with the more general trend in post-Soviet Russia of NGOs substituting for governmental structures in nature conservation (Yanitsky 2012). There have also been coalitions between NGOs and governmental bodies. The population of the tiger has settled at approximately 450 individuals. The conservation of the tiger is now a global concern, and 13 Asian nations joined forces with the heads of their governments, who signed an agreement at a meeting in St. Petersburg, Russia, in November 2010 (Deklaratsiya glav pravitel'stv o sokhranении tigra 2010). The Ministry of Natural Resources and Ecology of the Russian Federation published, in 2010, a strategy for the protection of the Amur tiger in the Russian Federation (Ministerstvo prirodnikh resursov i ekologii Rossiyskoy Federatsii 2010). In sum, the conservation of the tiger is a top concern. It is also clear that this charismatic species is seen to provide added value for the promotion of political ends.

Nevertheless, the Amur tiger population is currently considered threatened because of poaching and habitat loss. Specifically, the main problems are the poaching of tigers and their prey, increased logging, the construction of roads, forest fires, and inadequate law enforcement (WWF Russia 2013). Poaching results from the desire to use tiger parts in traditional Chinese medicine and, to a lesser extent, the threat that tigers pose to people in rural communities and to domestic and game animals. Therefore, whereas in the case of Russia, we may not observe resistance toward conservation measures from the government, we do see resistance in the life-worlds of groups of settlers in the regions where the tiger lives. Overall, resistance to conservation emerges either from the human population that is in daily conflict with the tiger (i.e., threat) or from the desire to use the tiger for economically and culturally desirable purposes (i.e., illegal use in traditional medicine). That is, the reasons for objection to the protection of the tiger stem, first, from a desire to eliminate the species, and second, from objection-in-practice that does not aim to exterminate the species but rather intends to use individuals of the species for economic benefit. As objection, the latter is unintentional: the results of the process of killing individuals tend to lead toward extinction, without that being the aim of the people practicing the killings. Habitat loss is a severe threat for conservation measures, as logging of the forests that the tiger inhabits is a common practice (Tysiachniouk & Reisman 2006).

As a specific problem, conservation efforts in the region inhabited by the Amur tiger are hindered by its location at the border near China and North Korea. In other words, discontinuities in various formal and informal institutions create inefficiencies in conservation measures. The poaching and selling of tiger parts from the Russian side of the border to China are facilitated by the lack of effective administrative systems and transboundary collaboration mechanisms (Nam 2005). As the border areas are politically sensitive, the nature reserve employees are not able to monitor tigers that freely cross the border. Nevertheless, cooperation between Russia and China on surveying the Amur tiger and its habitat dates back to 1997, and there has been an attempt to

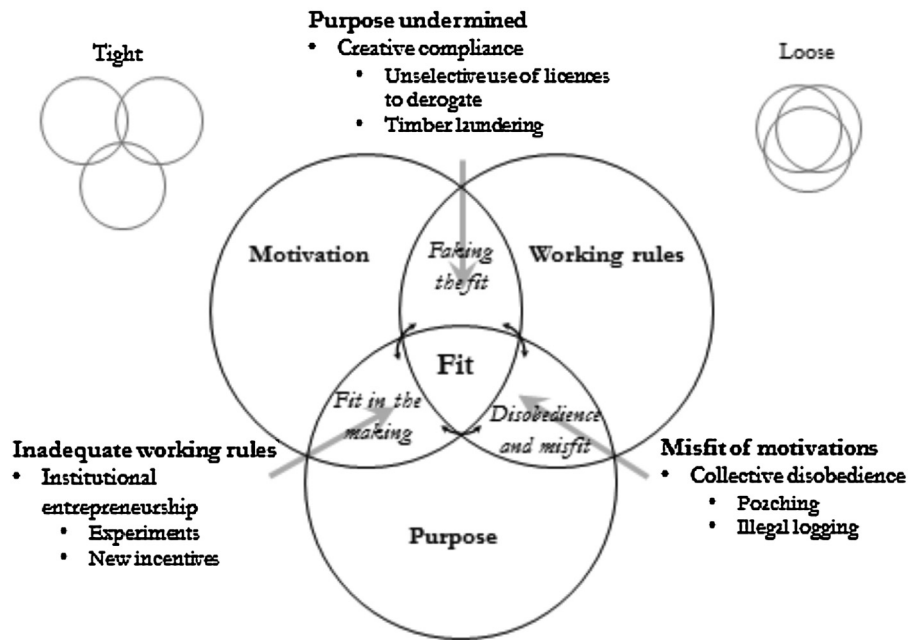


Fig. 1. Our hypothesis: the alleged gap between formal and informal institutions is filled with the contingent emergent order. Power relationships in reactions intermingle the actual right with the potential right, producing surprising dynamics and a precarious order. The tightness or looseness of the defined rules and rights may form a factor that affects the outcomes of policy interventions.

create a Transboundary Biosphere Reserve to aid nature conservation; UNESCO and several NGOs are participating and seeking the involvement of local communities and regional authorities.

On the local scale, partly encouraged by these organizations, several efforts have been made that can be seen as further adaptation to the pressure to improve conservation practices. Festivities dedicated to the tiger have been revitalized, and schools have organized programs hailing the tiger as a worthy species and the tigers as worthy individuals. It is worth emphasizing that much of this kind of adaptation to conservation goals draws from local habits, thereby drawing a full circle to more original ideas on the qualities of the tiger, that is, a just and totemic animal rather than a modern-day type of target for conservation organizations on the one hand and a kill for poaching on the other hand.

Overall, in the long run, a process is underway in which rights have been rescaled several times. These rights include not only the right to kill an individual of a species but also the right to prevent the killing of any individual. The right to kill tiger individuals was first scaled up from the local scale, and then, in practice, was transferred to unofficial networks that utilize tiger individuals for culturally and economically useful purposes. The responsibility of preventing killing, in contrast, first existed at the scale of the central state administration, but then shifted to transnational conservation organization networks and top-level political processes. During these transformations that determine the right to tiger individuals, the gap that exists between official rules and unofficial practices has also been on the move; it has been relocated from existing between state institutions and local communities to a gap between rules created by conservation organizations and networks of poachers.

The emerging order

Our abductive task is to explain the case in the circumstances described above, that is, what occurs in the gap between formal and informal institutions when “new actual society is emerging”, paraphrasing Sen (2010, 6). According to Connolly (2013) and Deacon (2012), *teleodynamics*, the purposeful and end-directed behaviors

and the reactions and disturbances triggered by these behaviors are a key to understand not only the dynamics of institutional change per se but also, and especially so, the emergent patterns of behavior resulting from resistance and adaptation. In what follows, we elaborate this in more detail.

Faking the institutional fit

As our empirical case studies show, on many occasions, transactions build upon faking. In such cases, the actors abide to the formal requirements brought about by biodiversity policies and their implementation but nevertheless undermine the purpose of conservation as long as the rules are not overtly violated, a behavior called “affirmative slippage” or “creative compliance” (e.g. Farber 1999; McBarnet 2001). Therefore, the continuity of the actions working against the conservation status of the species is secured through an ostensible acceptance of the working rules. This acceptance conceals the lack of motivation to pursue the purpose of conservation (Fig. 1). Faking may, of course, require collateral or even joint action: civil society actors fake the fulfillment of formal requirements, and authorities fake verification, which requires that actors combine powers to act against the purpose of the biodiversity policy in question. Transactions constituting the intended regulatory regime can, for example, be renegotiated by the involved actors giving rise to something completely different (Farber 1999).

This is similar, but not equal, to what Young says about institutional arrangements, which, to be effective, “must make a transition from paper to practice” (Young 2008, 21). Collective faking builds on a moral agreement, commitment to fake and in all our case studies, the state plays a role in this moral agreement. When civil society actors are motivated to follow the new rules on paper and the authorities also monitor their practices on paper, the actors conduct business as usual, which is camouflaged to look like command and obedience. Sometimes faking can be “perfectly legal” (when the creative compliance is based on finding real loopholes in the working rules) but often it takes place on the margins or beyond what is allowed by the rules. Licenses to derogate that are issued to a greater extent than the wolf populations can bear, fraudulent

logging contracts that are used only as a smokescreen for indiscriminate extraction, and overlooked habitat alteration that threatens the protected species show how the authorities and their civil society counterparts only follow the formal institutional scaffolding but do not contribute to the policy purpose.

This lack of abidance can result in hunters and loggers increasingly engaging in the administrative system, seeking authorization for activities that, under deeper scrutiny, conflict with the conservation purpose. But as the authorities often have no means or no motivation to control, e.g., whether the wolves killed or the mahogany felled were the authorized ones or whether the particular logging activities carried out in the tiger territories have affected the animals, the conservation policy implementation is dubious. Because the state still plays a part in the moral agreement, the codes for institutional adjustment change constantly. In Finland, for example, the judiciary system is pursuing its first charges of wolf-related severe hunting crime, and Peru has hardened its criminal code for cases of illegal logging.

Although legislative reform often does not incorporate the existing praxis of how people and companies operate, an inverse process can take place where many of these actors are not motivated to change their logic of behavior; instead, they strive for compliance with formalities, making only a partial transition from paper to practice. Then, when the working rules progressively tighten toward lower levels of decision-making, the customs, conventions, and discourses that supported the pre-intervention praxis become endangered by the new rules. However, they can still adapt and survive through this kind of creative self-organization that is fundamentally based on the intricate links between the local environment and local practices (Salo et al. 2013; Sears & Pinedo-Vasquez, 2011).

Disobedience and institutional misfit

The situation described above has also led to other types of reactions. In particular, when, as in our case studies, control and sanctions are either too weak to function well or very stringent, critical civil society actors (and sometimes also the administrative actors) may refuse to abide to the working rules altogether. Thus, the actors conform to the customary codes of conduct already in place, and disengage from the rulings of the regulators perceived socially distant (Murphy et al. 2009). The enforcement of working rules without the motivation of the actors then directs pressure toward resistance and the purpose of improving the conservation status of the target species is questioned. The illegal killers of gray wolves have continued their illegal activities because they have become committed to the customary rules associated with getting rid of the wolves and not to the goal of conservation. Instead, the wolf-critical citizens are motivated to pointing out institutional failures and weeding out the formal constraints to gain support for their purpose. Thus, to conform to customs is to conform to the standard that is publicly approved and praised. People also tend to disengage from the regulatory system when they feel a lack of procedural justice, i.e. they perceive that the regulator is mistreating them in some way (Murphy et al. 2009).

In some cases, disobedience has reigned, particularly when the illegal sphere of society has expanded, such as in Russia after the collapse of the Soviet Union and under the subsequent disorganization and continuous reorganization of state structures in the 1990s (Feldman & Blokoy 2012; Yanitsky 2012). In Peruvian Amazonia, the deficient monitoring, control, and enforcement capacity of the authorities have contributed to the loggers' rejection of the conservation purpose of non-detrimentality and have also caused many forestry actors to ignore the formal rules that outline lawful acquisition. However, when control and enforcement become stricter, or

the species in question become increasingly scarce, the economic benefit streams are also curtailed.

Collective disobedience also takes place in stable societal conditions with high levels of rule-of-law, such as the situation in Finland. The critics of the wolf conservation policy are against the principles of justice and legitimacy on which the institutional design and policy implementation are based. In contrast to the cases of mahogany and the Amur tiger, in the case of the wolf, the highly publicized emotional regime is fiercely against the institutional purpose of protection and the rules by which the species has been given a privileged status compared to the status of human life and livelihood (Hiedanpää 2013). Illegal killings of the wolf are done for the benefit of fellow humans on the wolf territories (Peltola et al. 2013; Pohja-Mykrä & Kurki 2014). Actions are altruistic, exercised not only for sympathy but are committed for the good of others (on sympathy and commitment, see Sen 2002, 177). Under these circumstances, civil society activists openly conform to a customary moral code that existed before the wolf made its reappearance (after a hundred years of exile) and practically all of the networking, feed-forward, and creative collective action has worked against the presence of the gray wolf, with a definitive lack of support for the implementation of the Habitats Directive (on networking and feed-forward see Ormerod 2012). There are no civil society initiatives to solve the puzzle of co-existence. Disobedience and the negative emotions of anger and frustration support institutional entrepreneurship or intellectual or moral growth in the presence of the wolf as little as does organized crime in the case of illegal logging of mahogany or poaching of Amur tigers. These reactions encourage distrust and hostility among civil society, government administration, and the scientific community.

Institutional fit in the making

As our case studies indicate, most actors have been rather critical of the authoritarian intention of establishing working rules for conservation, and most collective action has worked against conservation. There is, however, certain willingness and a degree of motivation from some actors to improve the institutional arrangements for conservation. In contrast to the acts of faking, which show motivation only to abide to formal rules and conform to the customary code in the face of institutional failure, here we witness actions that aim to “make a transition from practice to paper” and thus signal new rights that are being created, parallel with the working rules deemed inadequate for the job at hand. However, such actions of institutional entrepreneurship are incipient and even non-existent at times.

As an analogy, 15 years ago in Finland, the planning and implementation of the Natura 2000 network triggered, on the country scale, a massive grassroots resistance (Hiedanpää & Bromley 2012). This resistance, in turn, caused a major reorientation in the practices of regional land and natural resource use planning. Planners and decision makers posed the following question: what would be a workable way around the conflict? As a response, the regional-level authorities initiated a spontaneous series of collaborative processes whose general purpose was to explore the conditions of combining biodiversity protection and forest use. As a consequence, a voluntary, fixed-time payment scheme for ecosystem services known as Natural Values Trading was designed and tested, and several key principles were later incorporated into the national forest legislation (Author 2012).

The same voluntary and incentive-based principles have now been brought to the wolf policy discussion (Orava 2013). In Finland, the state and its administration have started to react to the disobedience, anger, and distrust that the wolf policy has triggered and consequently the Finnish wolf management plan was updated in 2014. The wildlife administration framed the updating process

as ‘wolf territory politics.’ As tentatively articulated, the purpose of territory politics is to anchor the managerial activities on the territory level and collaboratively design voluntary incentives to live with the wolves. These alleged incentives are not so much economic as they are moral by their nature. The wildlife administration has realized the bad societal and ecological consequences of too tight working rules regarding wolf management. The purpose now is to strengthen the individual motivation and moral commitment to wolf protection by encouraging people in the wolf territories to draft initiatives and policies (Turun Sanomat 18.4.2014). The focus of future policy will be more on practical managerial transactions whose purpose is to identify limiting factors and improve the conditions of co-existence: the shift is toward voluntary action and persuasion. Consequently the institutional performance and fit may improve (see also Hiedanpää & Bromley 2011).

This same general point of interest has emerged in the Peruvian and Russian cases. To combat the problems related to the conservation of mahogany and the Amur tiger, cross-sectoral cooperation has emerged that is specifically linked to the protection of these flagship species. For example, the Russian government has been cooperating with the non-governmental sphere to protect the Amur tiger, and the role of WWF Russia continues to be strong in tiger protection (Ministerstvo prirodnykh resursov i ekologii Rossiyskoy Federatsii 2010). In contrast to the case of the wolf, and in line with the case of mahogany, the main goal of poaching Amur tigers is not to eliminate the species; the aim of the poaching is to earn financial benefits, and thus, decreasing the animal population should be seen as resource depletion and not a benefit for hunting communities. Moreover, on a higher level, the species has high status value. For these reasons, many of the interactions between humans and the tiger could be categorized as adaptations toward preservation strategies.

Thus far, there is little evidence of working mechanisms that would provide incentives for long-term mahogany management. Instead, and in contrast to the cases of the gray wolf and the Amur tiger, measures regulating the harvest of mahogany occur in a setting in which the species is one of many species that share similar ecological and economic characteristics. Thus, the pressure caused by the tightening regulation and control of mahogany extraction has a natural safety valve: the extraction of other species, including another CITES-listed species, the Spanish cedar (*Cedrela odorata*). This could potentially provide space and time for new incentives to motivate actors to conserve the mahogany and the livelihoods and wellbeing of the communities living in these forest environments.

Conclusions

The nature of environmental and biodiversity policy is that it is contested by multitude of actors from governments all the way to stakeholders and citizens. Biodiversity policy planning, implementation and enforcement evoke reactions, and these reactions do not always improve the institutional fit. The opposite is often the case. That there are reactions to proposed institutional designs is not the news. However, the types of emergent orders we identified are novel.

We have identified three emergent orders, the ways in which societies and their institutional scaffolding actually constitute themselves. First, when faking institutional fit, there is a set of established rights that are pursued through an established procedural apparatus (that fulfills the needs of the actors). The balance of power among the actors does not indicate the need for new rights or rules. The rights themselves, and not the purpose, occupy the center of attention. Second, when the reaction comprises disobedience and feelings of injustice, there are no rights that are pursued given the balance of power among the actors. Any action or effort that

occurs does not center around emerging rights but rather involves the suppression of (institutional) constraints. Third, when the fit institutions are in the making, civil society actors are empowered to engage in the creation of new rights. The rights occupy the center of attention but stem directly from the purpose of conservation.

We have illustrated problematic consequences of an insensitive institutional scaffolding and design, i.e., increasingly stringent enforcement of a conservation-oriented policy apparatus with clear conservation goals but without a clear role for the creative participation of civil society. Major consequences have included resistance and self-directed adaptations to institutional constraints rather than motivation to pursue the overt goal of these institutional arrangements. Institutions have come from above, and the conditions of their fitness have been generated from below. As our cases show, the fit is not exactly the one envisioned through the authoritative rules and the purpose of institutional conservation, but it is a fit nevertheless, and that fit is not necessarily good for endangered species.

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