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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 UNCSD 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." (UNCSD 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.

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