

Exotic species, Experienced, and Idealized Nature

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Abstract This paper is an answer to the Caplat and Coutts forum about our previous paper “The need for flexibility in conservation practices: exotic species as an example”. We precise here why we proposed to consider exotic species as well as indigenous species in the reconnection framework in human-modified environments. One argument is that consistent and understandable arguments must be used in the communication from scientists to the public, in order not to decrease the gap between science and society.

Keywords Exotic · Reconnection

Introduction

In their paper entitled “Integrating knowledge, public perception and urgency of action into invasive species management”, Caplat and Coutts (2011) discuss our proposed conceptual conservation framework (Prévot-Julliard and others 2011). The objective of Caplat and Coutts to complement our paper and clarify some misleading points

is laudable and we thank them for having proposed some additional information. However, we would like to respond to some of their comments.

We of course agree that in many cases setting aside rare or endangered species can reduce the pressures on these species. We did not develop any argument against the creation of new protected areas, but rather argued that creating and communicating on these protected areas is not enough to raise the interest and awareness of people towards conservation issues. It is true that “extraordinary [nature] can be a driver of people’s good will, creating interest” (Caplat and Coutts 2011). However, even if interest can be driven by emotion, “emotional biases may interfere with people’s ability to evaluate environmental issues adaptively” (Clayton and Myers 2009, p. 26). Moving from emotion to conservation-friendly behaviors depends on multiple psychological and environmental factors. One way to encourage the acting out is to increase personal experiences of nature (Clayton and Myers 2009). Individual empirical and practical nature experiences could have a stronger influence on developing ecological awareness and personal initiatives than media-driven communication on natural environments.

The tendency for mass-media communication to focus on extraordinary nature can further lead to the disconnection and idealization of natural environments. People have the idea that nature is only located in specific places, distant from their nearby environment. As a result, they may feel that nature conservation has little to do with personal involvement. This can increase the “Not-In-My-Back-Yard” NYMBY syndrome (Dear 1992), which we believe profoundly influences the failure of conservation measures throughout the world. Although people acknowledge that conservation measures must be taken (e.g., 70% of European citizens are aware of conservation problems,

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Eurobarometer No. 209, 2010), they do not think they can personally provide solutions on those issues (Novacek 2008).

Caplat and Coutts (2011) argued that we have promoted exotic species in the reconnection framework more than local indigenous species. We fully agree that indigenous species should be used whenever possible to increase public awareness. However, we argue that exotic species, as soon as they are present in the considered territories (e.g., in the cities), must not be treated differently than indigenous species in the reconnection framework. We indeed argued that introduced species in urban areas are often former pets or ornamental plants, which means that some people may like them more than other species (for their color, their size, their human shyness behavior, etc.). This gives them a kind of added value in the reconnection framework. But the most basic argument is that for the majority of people, nearby biodiversity (especially in cities) is exotic to the place since it has obviously colonized human-transformed environment. The distinction made by conservationists between species originating from former pristine local habitats (indigenous) and those originating from elsewhere (exotic) makes no sense to the public. Yet, making sense is arguably the most important feature of communication. This is in no way because the public is stupid or ignorant. In fact, the position of the public is highly coherent even in the basic ecological framework: the definition of exotic is linked to the concept of local adaptation. In a fixed (or slowly changing) word, geographic origin is certainly a good proxy for defining exotic species, because locally adapted species are species from the local area. But in the current context of global changes, the species range boundaries are becoming less strict, local species may even no longer be adapted to local condition, blurring out the notion of what is exotic (Davis and others 2011). Today, many scientists and practitioners even advocate introducing endangered species in more favorable habitats, together with re-introducing species in habitats where they have been extinct due to human practices (Thomas 2011). We therefore argue that, in the reconnection framework, and in human-modified landscape, distinguishing exotic species as such, will lead to the opposite effect than desired: further moving away people from being concerned by biodiversity, because exotic as defined by conservationists does not match people coherent representation of what is exotic or not. In this context, it seems more reasonable to consider exotic species based on their ecological functions in the ecosystem, their interactions with other species, their dynamics and evolution, rather than in opposition to local species (Davis and others 2011).

Caplat and Coutts (2011) further argued that “top-down management is, in some cases, a necessity to arbitrate between the different points of view represented in the

community”. We did not want to argue against top-down management per se and we are also aware that top-down political strategies are indeed a commonly used decision-making process. However, these strategies are accepted by the whole society only if there is a social consensus (see Durkheim 1893). For instance, in the case of healthcare there is a common agreement that being healthy is better than being sick; in this case, top-down political measures can reach a social agreement. However, regarding nature and biodiversity, no social consensus has been reached so far about what is the desired level of biodiversity. In these conditions, top-down measures may not be accepted by the society. Applying these top-down measures when they are not accepted will increase the so-called democratic deficit (Miller and others 1980), whereby society as a whole does not recognize itself anymore in its elected representatives or decision-makers. Top-down decisions regarding biodiversity management imposed to the public could be effective in the short term for conservation purpose, but their multiplication would increase the gap between society and practitioners or scientists, as well as the misunderstanding and defiance of the society toward conservation science. In order to decrease this democratic deficit, communication channels need to be established, via which scientists and other stakeholders can share their knowledge and representations. Such protocols would allow building a general consent for discussed questions, which is the first step for the acceptance of future decisions. These deliberative protocols concerning nature management exist in some local situations (e.g., Bousquet and Le Page 2004), but they should be generalized in a broader context.

Manufacturing consent (sensus Herman and Chomsky 1988) on biodiversity conservation is based on the increase of individual awareness, which, we argue, is mostly dependent on local interaction with nearby nature, and thus concern both exotic species and local species (e.g., Ehrenfeld 2008). We certainly do not promote the introduction of exotic species. We argue that stigmatizing exotic species in the context of increasing people interaction with everyday life biodiversity is counterproductive. Both exotic and indigenous species can enhance the experience of people with ordinary nature in their everyday life (Dunn and others 2006; Miller and Hobbs 2002), especially when those species are already well-known and appreciated. Not using this opportunity to reconnect people with nature and biodiversity functioning is a shame. These species could be experienced through knowledge, but also emotion, which are both parts of future ecological awareness (see Clayton and Myers 2009).

Finally, we did not aim to present our objectives to preserve species and increase awareness as globally conflicting, we tend to see them as complementary for management to operate successfully. We do not think that the

4R framework opposes these views. It rather helps to prioritize them in the various contexts of conservation. This framework could be used as a toolbox from which different measures could be favored according to the context, in what is known as *adjustive management* (Maris and Béchet 2010). We agree that conservation biology is most often context-dependent, but we claim that exotic species are too often immediately considered as harmful and prone to be eradicated (e.g., Strubbe and others 2011). As ecologists, we also agree that there is nothing wrong in scientists advocating for biologically motivated decisions, we just underline that these motivations should be considered in balance with other societal considerations.

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