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Governing cities reflexively—The biocultural diversity concept as an alternative to ecosystem services

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ABSTRACT

With the aim to embed ecology more forcefully into decision-making, the concept of Ecosystems Services (ES) has gained significant ground among policy-makers and researchers. The increasing recognition of the importance of urban green areas for the quality of life in growing cities has led proponents of ES approaches to argue for an uptake of the approach in urban environmental decision-making. However, the ES approach has been criticized for standing too much at a distance from local communities and their day-to-day practices and for insufficiently taking into account the potential trade-offs between different qualities or preferences. In this paper we argue that other concepts, doing other work, need to be added to the debate about futures of urban governance and research. Biocultural diversity is suggested as one such alternative concept. By its emphasis on diversity, biocultural diversity can account for the many ways in which people live with green areas in the urban landscape, acknowledges the different knowledges this involves, and can reveal conflicts and ambivalence that may be at stake. This sets up for a reflexive, transdisciplinary research process that questions and contextualizes knowledge and worldviews including those of researchers. A reflexive, transdisciplinary research, then, is a productive catalyst for forms of reflexive urban governance that recognise and respond to this diversity and provide platforms for contestation.

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1. Introduction

More than 50% of the world's population is living in cities, and the United Nations have projected this percentage to grow to 66% in 2050 (United Nations, 2014). Cities in Africa and Asia are expected to grow the most, especially middle-sized cities (of more than 1 million inhabitants). Many of these cities are located in the vicinity of global biodiversity hotspots (Seto et al., 2013). This poses challenges to the governance of cities, to keep them attractive for people and nature and to limit their ecological footprint.

In order to embed ecology more forcefully into decision-making, a variety of ecological concepts has been introduced and elaborated, the concept of Ecosystems Services (ES) probably being the most prevalent one at this point in time. Having its roots in conservation biology and ecological economics, ES has broadly gained attention among scientists, professionals and policy-makers after the Millennium Ecosystem Service Assessment and The Economics of Ecosystems and Biodiversity processes (MA,

2005; TEEB, 2010). Although originally focused mainly on rural and relatively untouched nature areas, a growing number of authors emphasize the potential role of the ES concept for cities and urban governance (e.g. Niemelä et al., 2010; Krasny et al., 2014; McPhearson et al., 2015).

The proponents of ES anticipate that awarding a positive label and according an economic prize or quantitative value to ecological values increases decision-makers' awareness of the importance of biodiversity protection and leads to more sustainable resource use and management (Peterson et al., 2010; Braat and de Groot, 2012). Considering the still growing global network of scientists and practitioners, the sheer number of (interdisciplinary) studies and conceptual reflections, and the appearance of the term in policy vocabulary, it is fair to say that the ES concept has effectively gained ground and facilitated cooperation between the actors with a stake in environmental decision-making. For example, ES feature centrally in the official EU Biodiversity Strategy which "calls Member States to map and assess the state of ecosystems and their services in their national territory with the assistance of the European Commission" (European Union et al., 2015: article 5).

In spite of the emergence of the concept on policy agendas, some authors have pointed at the lack of 'translation' of ES to

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governance and decision-making, and argued for a better ‘take-up’ of the concept in urban governance particularly by taking local contexts into account (e.g. McPhearson et al., 2015). Other authors have argued for a better reflection on the very concept and questioned its practical consequences. They contend that in spite of its popularity, the ES concept is laden with uncertainties and differences of interpretation, so that what ESs are, is fundamentally contested (e.g. Cowell and Lennon 2014; Norgaard, 2010; Barnaud and Antona, 2014). It is not our aim here to resolve these uncertainties and contestations. We also do not wish to do away with the concept of ES, as it has drawn attention to ‘services’ of ecosystems previously neglected. But, we wish to emphasize that it is important to recognize that any concept is performative rather than neutral – i.e. it is not a mere reflection of a world out there but always does particular work – and that the work done by any concept is restricted (Hardy et al., 2000). Therefore we make a point of arguing for a continuing transdisciplinary exploration, use and further development of other concepts that can do other work. This is important, to enrich critical debate about what kinds of reflexive urban governance are possible into the future.

One potentially underutilized concept in the debate about urban green space governance is biocultural diversity (BCD). BCD has been introduced for studying the interrelationships between nature and culture and is referring to the inextricable linkages between cultural diversity and biological diversity and what these mean for nature and culture (Posey, 1999:3). The concept of BCD has originally been used to look into traditional and indigenous groups, their livelihood systems and their roles for nature conservation in developing countries, particularly through case-studies in Latin-America and Asia and South-Africa (Pretty et al., 2009; Maffi and Woodley, 2010; Cocks and Wiersum, 2014). The term is starting to leave its traces in the global policy arena, with CBD and UNESCO jointly having produced the “Joint Programme on the Links between Biological and Cultural Diversity (JP-BiCuD)”. Associated conferences aimed to further the implementation of the Programme in European cultural landscapes (UNESCO and SCBD, 2014; Agnoletti and Rotherham, 2015) and the term has been promoted to emphasize the interrelatedness of biodiversity and cultural practices in relation to urban green spaces (Elands et al., 2015).

Here we will argue that BCD can do particular work other than ES for providing options to live sustainably with natures in cities. This paper aims to (i) critically reflect on the ES concept, (ii) propose biocultural diversity as an alternative heuristic device (iii) explore what the concept of BCD entails for the conduct of research and for urban governance. The paper is structured in accordance with these three aims.

2. Ecosystem service approach

In this section we review the critiques towards ES that we consider most relevant for our plea to further elaborate alternative concepts.

A first critique concerns the simple assumption of a positive, one-directional human-nature relationship. The ES model was originally developed to emphasize that human wellbeing is strongly reliant on nature and biodiversity (MA, 2005). In this model, services provide the ‘bridge’ between the human or demand side and the nonhuman system or supply side (Braat and de Groot, 2012). The model tends to present a passive flow from nature to human wellbeing, paying little attention to the reciprocal nature of interactions between humans and nature (Lyytimäki and Petersen, 2014). This is in spite of how, in the literature on socio-ecological systems, human-nature interactions are viewed as dynamic ‘bundles’ where humans and nature (more or less together and simultaneously) have to adapt constantly to maintain

their resilience in times of environmental change (Berkes et al., 2003; Folke, 2006).

A second critique to the ES model considers the dominant market paradigm of a one-directional relationship between the human (demand) and nonhuman (supply) side and the prioritization of economic valuations of commodities or goods. Identifying values in market terminology is reducing value systems, reasonings and motivations with regard to ecosystems to preference-based, rational choices of utilisation or economically driven decision-making (e.g. Chee, 2004; Spash 2008). It may also bias decision-making towards the very processes that have given rise to unsustainable relations between humans and nature in the first place (Turnhout et al., 2013). In response to this limitation, value pluralism has lately been advocated as a key ingredient of the ES research agenda (see e.g. Gómez-Baggethun et al., 2014a), as well as a range of stakeholder participation methods to go beyond measuring (static) individual preferences and promote social learning (Chee, 2004). Also efforts have been made to develop research methods to better integrate more intangible values, especially cultural or social values, into ES frameworks (e.g. Chan et al., 2012). Other authors are making a distinction between cultural and utilitarian services of biodiversity. They emphasize that too much focus on valuating the former may disregard the latter, such as the provision of food or raw materials and the regulation of climate or purification of water, while *both* cultural and utilitarian services are important to understand the daily practices by which various social and cultural groups enjoy, understand and protect biodiversity (Russell et al., 2013; Elands et al., 2015). In spite of these efforts, an economic logic of supply and demand is currently still the most dominant in scientific and policy deliberations of ES. The question is whether this will change with a continued focus on the concept of services, and a one-directional operationalization of distinct/separate values that are, in fact, overlapping and interrelated.

The critique that the original ES model primarily identifies values in market terminology is connected to another point of attention, namely that the model does not address value-laden social justice and equity-questions of ‘who benefit’ or ‘who loose’, and at which spatial and temporal scales (e.g. Hein et al., 2006). Indeed, the delivery of an ecosystem service may be connected to the delivery of a disservice from a different point of view (Lyytimäki and Petersen, 2014), or change from positive to negative over time or across spatial scales. In other words, ES has focused attention on the possibilities of an alignment of different interests, but this has displaced attention for potential vulnerabilities, potential conflicts and tradeoffs (Lele et al., 2014). Authors acknowledging the important role of power-differences, the likelihood of tradeoffs, the importance of engagement to disclose cultural and intangible values and the need to interact with local stakeholders about what these are, still in the end strive for the development of “commonly accepted frameworks” (Chan et al., 2012).

Our hope is that adding alternative concepts will a. illuminate how the ES-concept (and its origins) prioritizes one specific view above others and b. reveal alternative ways of living with nature.

A third critique involves the top-down, standardized classification and quantification of ‘deliverables of nature’ (e.g. MA, 2005; TEEB, 2010; CICES, 2014). These standardization and classification practices are considered as one of the key conditions for a better incorporation of ecosystem services into decision-making (Daily and Matson, 2008). In line with this argument, the EU advocates on its webpage that ecosystem service mapping can be used for “explaining the relevance of ecosystem services to the public in their territory” (European Union et al., 2015). However, the language of ES has become rather inaccessible for non-scientists and fails to support local citizen’s engagement in decision-making and practices (e.g. Chan et al., 2012; Krasny et al., 2014). Luck et al.

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