



VALUING NATURE

Richard Gunton

Beyond Ecosystem Services and Natural Capital:

Valuing the Invaluable

Valuing Nature Keynote Lecture Series

Edinburgh, 3 July 2017





Department
for Environment
Food & Rural Affairs



Department
of Energy &
Climate Change



Environment
Agency



Food
Standards
Agency

TWO MYTHS



The myth of *Nature's benevolence*

Earth~One Enormous Ecosystem

Three basic principles of ecology:

3) NATURE KNOWS BEST

The Earth and all of it's life-forms have been here for billions of years. Humans share and we make changes that could cause long term effects



www.slideshare.net/duncanpatti/chapter-3-notes



<http://tvtropes.org/pmwiki/pmwiki.php/Main/MotherNature>

The mythical *Triumph of Development*



www.kwantis.com/work_single?id=Desalination+Plant+Investment+Evaluation

Stephen Hawking will travel to SPACE on Richard Branson's Virgin Galactic flight

- Physicist 'did not expect opportunity' until offer from Sir Richard Branson
- Professor Hawking said he did not hesitate in saying 'yes' to the opportunity
- It is unclear when the voyage might be, or who else will be on board

By JOSEPH CURTIS and SHIVALI BEST FOR MAILONLINE
PUBLISHED: 14:23, 20 March 2017 | UPDATED: 20:11, 20 March 2017



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After years of studying cosmology, Professor Stephen Hawking is finally planning to travel into space himself.

Sir Richard Branson has offered the famous physicist a place on board his Virgin Galactic spacecraft.

Speaking on Good Morning Britain, Hawking said he did not hesitate in saying 'yes.'



Source: Daily Mail

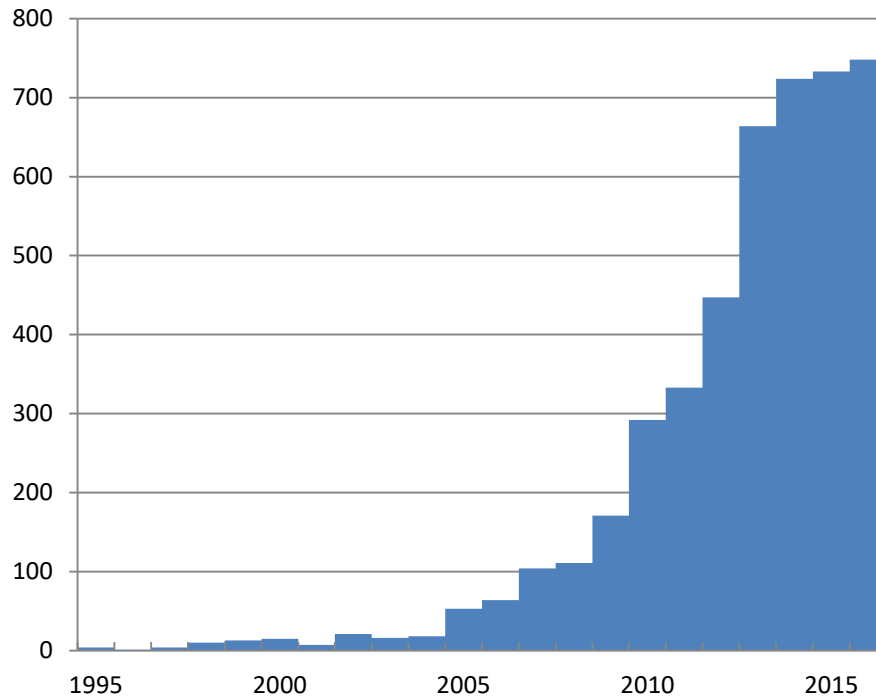
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ECOSYSTEM SERVICES

Ecosystem Services

"Ecosystem service*" in titles on Scopus



Hits on Google

"Ecosystem services":

✖ 4 million

"Nature conservation"

✖ 6 million

"Sustainable intensification":

✖ 0.3 million

(today)

Ecosystem Services



Contents lists available at ScienceDirect

Ecological Economics

journal homepage: www.elsevier.com/locate/ecocon

Surveys

Evaluating conceptual definitions of ecosystem services and their implications

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ABSTRACT

"Ecosystem services" is a phrase with many meanings, yet very few different definitions of the term. Ecosystem services are now general range of environmental variables for policy and management as well as by those aspects of the environment. A review of the dominant term is comprehensive in its scope and requires further specification that there are four main categories of conceptual definitions. The paper

REVIEWS

Ecosystem Services as a Contested Concept: A Synthesis of Critique and Counter-Arguments

Matthias Schröter^{1,2}, Emma H. van der Zanden³, Alexander P.E. van Oudenhoven¹, Roy P. Remme¹, Hector M. Serna-Chavez⁴, Rudolf S. de Groot¹, & Paul Opdam^{5,6}

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Keywords

Boundary object; classification; economic valuation, environmental ethics; payments for ecosystem services; philosophy of science; transdisciplinary research; vagueness.

Abstract

We describe and reflect on seven recurring critiques of the concept of ecosystem services and respective counter-arguments. First, the concept is criticized for being anthropocentric, whereas others argue that it goes beyond instrumental values. Second, some argue that the concept promotes an exploitative

Transactions OF THE INSTITUTE OF BRITISH GEOGRAPHERS



Measurement and alienation: making a world of ecosystem services

Morgan Robertson

The development of markets in water quality, biodiversity and carbon sequestration signals a new intensification and financialisation in the encounter between nature and late capitalism. Following Neil Smith's observations on this transformation, I argue that the commodification of such 'ecosystem services' is not merely an expansion of capital toward the acquisition or industrialisation of new resources, but the making of a new social world comparable to the transformation by which individual human labours became social labour under capitalism. Technologies of measurement developed by ecosystem scientists describe nature as exchange values, as something always already encountered in the commodity form. Examining these developments through specific cases in US water policy, I propose that examining this transformation can provide political ecology and the study of 'neoliberal natures' with a thematic unity that has been absent. I understand capital's encounter with nature as a process of creating socially-necessary abstractions that are adequate to bear value in capitalist circulation. Such an argument supersedes the issue of nature's materiality and points toward a common language for the analysis of both humans and nature as two participants in the labour process. Political ecologists struggling with the commodification of nature have tended to overlook the social constitution of nature's value in favour of explicit or implicit physical theories of value, often as more-or-less latent realisms. I suggest that critical approaches to nature must retain and elaborate a critical value theory, to understand both the imperatives and the silences in the current campaign to define the world as an immense collection of service commodities.

key words political ecology value ecosystem services commodification carbon trading nature

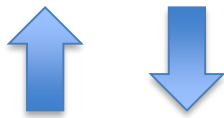


Ecosystem

“Ecosystem”: biotic + abiotic elements

- ✘ Arthur Tansley (1935) “The Use and Abuse of Vegetational Concepts and Terms.” *Ecology* 16:284–307
- ✘ “...we cannot separate [organisms] from their special environments, with which they form one physical system.”
- ✘ Common currencies of energy, C, N, water, etc.

Biodiversity?



...Services

- ✘ **“the conditions and processes through which natural ecosystems ...sustain and fulfil human life”**

(Daily, G. (1997) *Nature's Services: Societal Dependence on Natural Ecosystems*)

- ✘ **“the outputs of ecosystems from which people derive benefits”**

(UK National Ecosystem Assessment (2011) *The UK National Ecosystem Assessment Technical Report*, UNEP-WCMC)

- ✘ **“the benefits people obtain from ecosystems”**

(Millennium Ecosystem Assessment (2003) *Ecosystems and Human Well-Being: A Framework for Assessment*, Island Press)



“Ecosystem Services



Ecosystem Service

Climate regulation

Water regulation

Soil formation

Pollination

Seed dispersal

Food provision

Recreation (opportunity)

Spiritual experience (opportunity)

Animal welfare

Methodological and Ideological Options

Where is the consensus? A proposed foundation for moving ecosystem service concepts into practice

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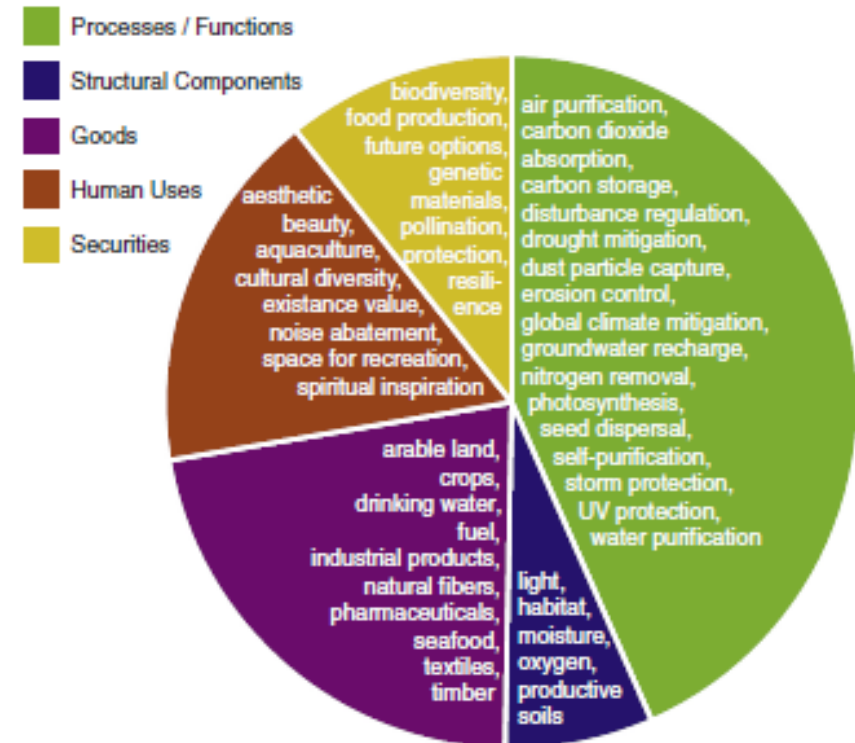


Fig. 1. Examples of “ecosystem services” cited in 25 publications categorized by processes/functions (43%), structural components (7%), goods (22%), human uses (17%), or securities (11%). Categories and assignments of “ecosystem services” to specific categories were determined by the authors of this article. Each pie piece represents the relative abundance of cited “ecosystem services” that occur in that category.

***Not ecosystem services (?)**

Ecosystem Services



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Survey

Rethinking ecosystem services to better address and navigate cultural values

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Ecosystem services or services to ecosystems? Valuing cultivation and reciprocal relationships between humans and ecosystems

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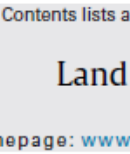
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Amazonia
North-West pacific coast
Services to ecosystems

ABSTRACT

The concept of Ecosystem services (ES) has gained prominence in policy and academic circles. However, the natural functioning of ecosystems to people neglecting the reality as often evidenced (i.e. interventions arising from ecosystems and indigenous knowledge, closing the loop the biocultural ecosystem to illustrate the concept). Finally, an alternative by incorporating this the inclusion of Services to ecosystems highlights the need for

Coproduction of ecosystem services as human–nature interactions—An analytical framework

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Ecosystem Services: for whom?

Ethical problem: beneficiaries



Ecosystem Services: *summary*

Opportunity costs of degrading an ecosystem?

A consequentialist ethic:

- Anthropocentric, pragmatic
- Helps identify people's motives
- Helps resolve complex motives onto intelligible axes
- Allows sophisticated valuation
- Widely adopted
 - MEA, UKNEA, IPBES, TEEB



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WHAT DO WE NEED?

What do we need?

- ✘ Justice
- ✘ Common good
- ✘ Freedom, respect for people's visions...
- ✘ Economic productivity
- ✘ Quality of life
- ✘ Coherent societies
- ✘ Protection of heritage

The background features a collection of circles of varying sizes and colors. There are approximately 20 grey circles scattered across the frame. In the center, there are four larger, distinct circles: a pink one at the top, a yellow one to the left, a light blue one to the right, and a light green one at the bottom. These four central circles are arranged in a diamond-like pattern.

ECOSYSTEM VALUING FRAMEWORK

How do humans experience the world?

Symbolic: names, connotations, uniqueness

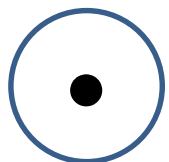
Historical: development; educational value

Analytical: (bio)diversity

Sensitive: effects on comfort, mood, etc

Biotic: provision of foodstuffs, water supply

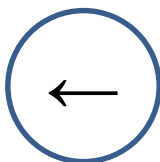
Physical: shelter, fuel, materials



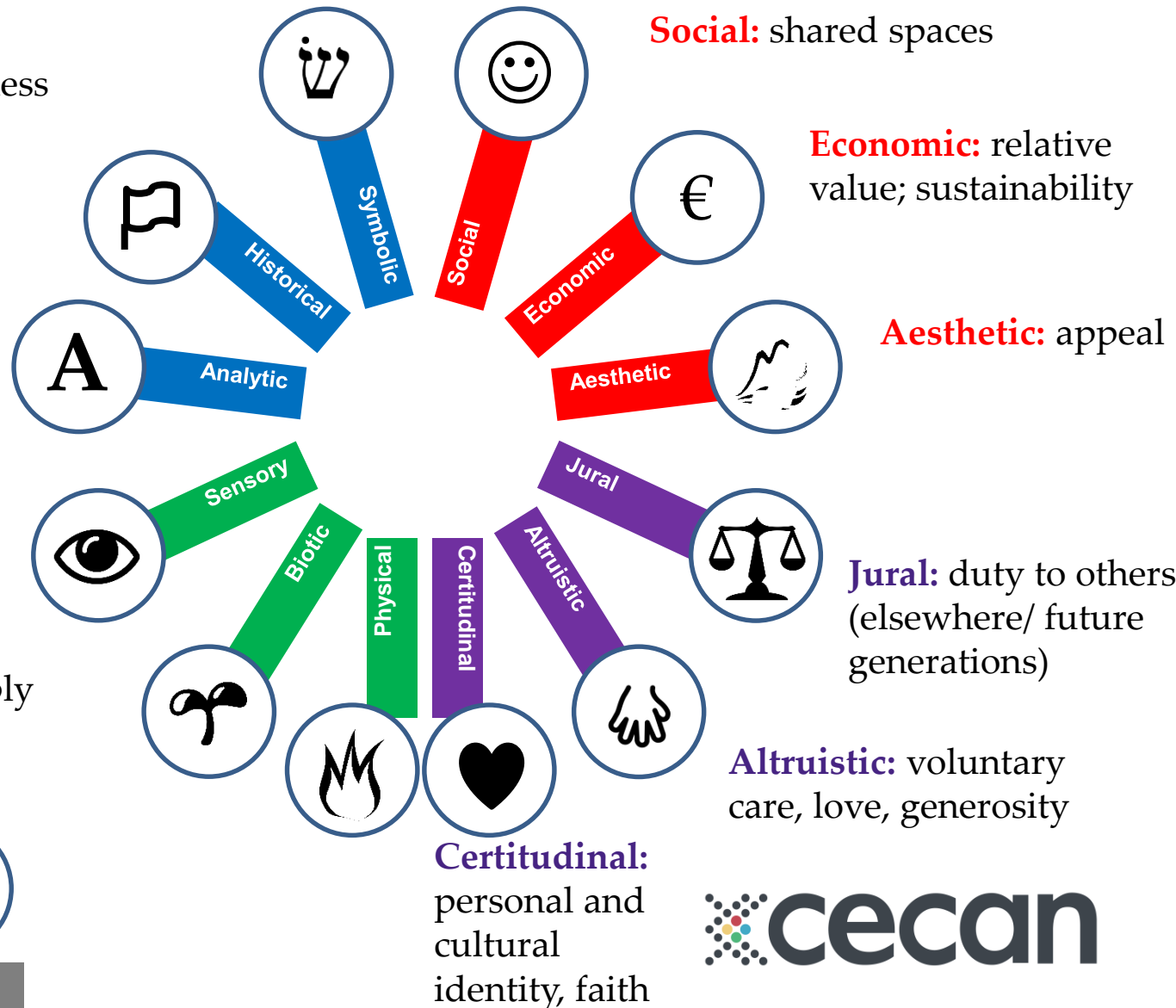
Numerical



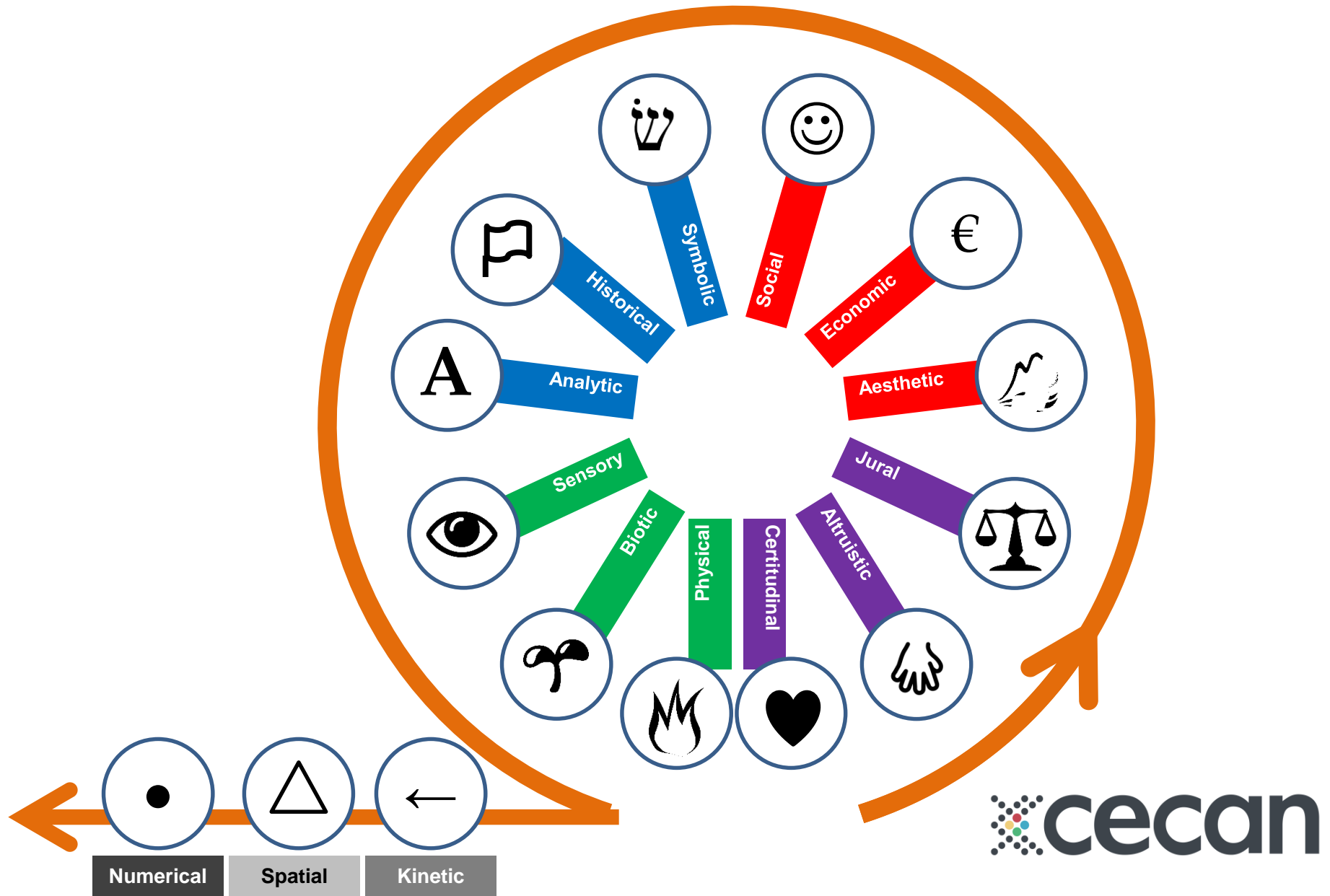
Spatial



Kinetic



How do humans experience the world?

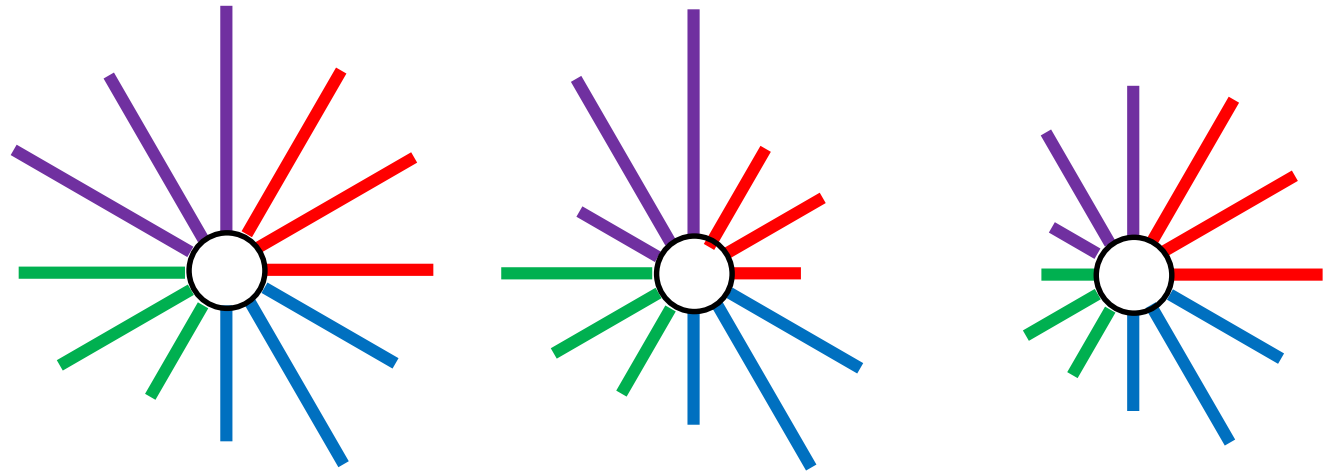


Ecosystem Valuing Framework

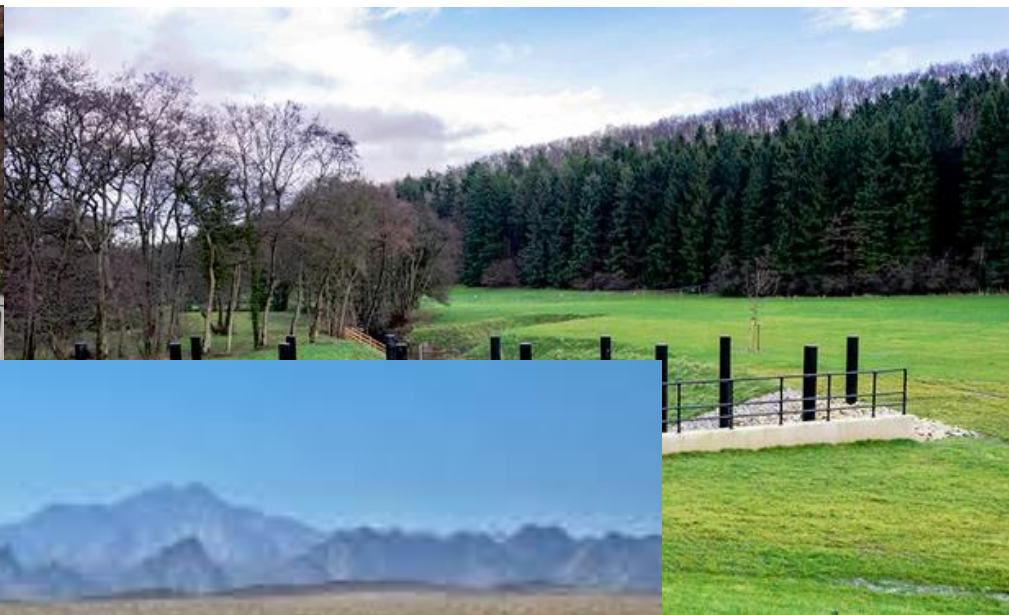
- ✘ **Certitudinal:** *Interviews and discourse analysis*
 - ✘ **Altruistic:** Levels of voluntary management (quantity of litter)
 - ✘ **Jural:** Intensity of campaigning
 - ✘ **Aesthetic:** AONBs; Artistic activity; Photographs on social media
 - ✘ **Economic:** Investment by local authorities; Degradation
 - ✘ **Social:** Footfall of people in groups; Social facilities (play areas, toilets...)
 - ✘ **Symbolic:** Specificity and number of names for the site; SSSI status
 - ✘ **Historical:** Intensity of management; use by schools, ecotourism...
 - ✘ **Analytic:** Range of geological and vegetation types; Biodiversity indices
 - ✘ **Sensory:** Soundscape metrics; Ambient spectrum; Wildlife activity levels
 - ✘ **Biotic:** Harvesting rates; Trophic complexity
 - ✘ **Physical:** Resource use; Microclimate
- + norms
- intensity...

Ecosystem Valuing Framework

- ✖ For a specified land-use change
- ✖ Consider all possible stakeholders, and
- ✖ All aspects of life in which they may be affected



Examples

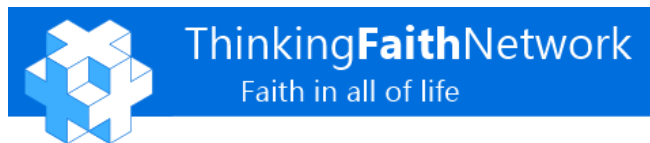


THANK YOU

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<http://valuing-nature.net/>



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Gareth Jones
Deepa Senapathi
Arthur Jones
Martin Kaonga