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**Cognitive dissonance in evidence-based sustainability policy? Reflections based on governance**

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**Abstract**

Evidence-based policy making has become popular in political circles, as it promises an indisputable, 'true' knowledge base for policies. The call for more 'evidence' is especially loud in environmental and sustainability politics. This is in sharp contrast with the much lower level of certainty that social sciences consider realistic with regards to the politics of complex, disputed, so-called 'wicked' problems of the sustainability agenda. At the same time, sustainability scientists have understood the reality of political marketing and strive/pretend to produce more certainty than is scientifically sound, in order to get policy makers to act.

The question is why many governments seem to favour '*evidence-based*' policymaking for sustainability challenges, whereas they *know* that this can lead to taking decisions which do not take into account uncertainty and unpredictability. In the same way predictions of economists are used as evidence although they often turn out to be wrong. Both can lead to large societal costs. What are the reasons for such collective cognitive dissonance? Is it because the costs of unwise decisions will be often later and elsewhere? An answer can be found in those strands of governance theory that acknowledge the normative dimension of governance practices and propose mechanisms for dealing with normative and cognitive tensions, such as metagovernance and transgovernance theory.

I argue that the popularity of using the metaphor 'evidence' for knowledge is a function of the culture and traditions of administrative organisations and their political leaders. The culture and traditions are expressed in the predominant application of a governance approach with a specific appreciation of what usable knowledge or 'evidence' is. The paper concludes with first recommendations for improving the evidence base for political decision-making with regard to sustainable development, and questions for further research.

**1. Introduction**

Sustainable development, as defined by the 1987 World Commission on Environment and Development (Brundtland Commission), is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Many sustainable development challenges are of the 'wicked' type (Rittel and Webber 1973). Resource efficiency, climate change, water scarcity and soil erosion are examples of complex

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problems related to social systems, with inherent disputes about values and knowledge. Sustainable development in itself is already a normative concept, and only its vagueness enables the use of the concept in many different cultures and traditions. For 'wicked' problems 'hard' evidence is only to a limited extent useful.

It seems therefore that the use of the term 'evidence' in the context of sustainable development is rather metaphoric – it shows confidence and authority - than that it expresses a satisfactory quality of knowledge. The notion of 'evidence-based policymaking' is borrowed from natural sciences (especially medicine) and law practice. It suggests that policies are based on factual, undisputable knowledge and based on rational models of problem-solving, assuming that knowledge is collected, evaluated, and then translated straightforwardly into 'better policies', an assumption that is far from the 'messy' reality (Hertin et al 2009).

Such factual knowledge does exist but is rare in relation to social systems and human behaviour (e.g. Berger and Luckmann 1966, Lindblom and Cohen 1979), be it with regard to economic, social or environmental behaviour. Real 'evidence' is also rare with regard to complex natural systems. The concept of 'planetary boundaries' is usually presented as being completely within the natural science domain. However, such boundaries are influenced by the interactions between nature and humankind. Schmidt (2012) therefore rightly argues that planetary boundaries cannot be described exclusively by scientific knowledge-claims. They have to be identified by science-society or transdisciplinary deliberations.

Constructions like IPCC (as a role model) where virtually all relevant climate scientists are prompted to agree on analysis and forecast, are attempts to strengthen the evidence character of individual research in a collective approach. This is truly to be welcomed, and should also take place in social science.

No matter how rare evidence is, 'evidence-based policymaking' and related frames like 'facts-based policy-making' have become popular among political decision-makers and their advisors. Scientists who cannot produce hard evidence are considered as inferior. Moreover, in 2009, a Dutch government minister who was also a natural science professor, was seen on television saying "I will not accept scientific mistakes anymore", after a dispute had developed about the reliability of reports published by the International Panel for Climate Change (IPCC).

The call for more 'evidence' is especially loud in environmental and sustainability politics. This is remarkable, because social sciences consider much of the sustainability agenda as wicked problems for which uncertainty and low predictability are inherent. To paint the situation even worse: some sustainability scientists have meanwhile understood the reality of political marketing and strive/pretend to produce more certainty than is scientifically sound, in order to get these policy makers to act. This is especially risky when 'hard scientific evidence' is presented which is based on research on extremely complex and unpredictable mechanisms such as 'planetary boundaries' and the related 'tipping points'. The problem with the concept of such limits is that natural science can probably not reveal what the limits really are, if there are any. For example, the maximum global temperature change which we have agreed upon (2°C) is the outcome of a societal and political discussion. It is a limit which we have set ourselves to ensure that climate risks do not run out of control. It is not the result of a scientific experiment, let alone a mathematical formula. Another example concerns the conservation of global biodiversity. The limits to biodiversity loss, in terms of upholding the ecological services they provide, are difficult to ascertain scientifically and thus need to be based also on subjective factors such as risk management and valuation of the intrinsic value of biodiversity.

In both cases it is even quite easy to surpass the limits, which demonstrates that these limits are not absolute (such as for instance the speed of light). In other words: nature will not prevent us from surpassing limits, even if the results could be disastrous for mankind.

The pretended scientific certainty can become a boomerang destroying academic authority and integrity if the predictions do not come true.

The fashion of evidence-based policymaking is not only favoured by natural scientists but also by positivist social scientists like neoclassical economists. They successfully promoted cost-benefit analysis (CBA) as an objective tool to assess policy options. What they did not tell was that their computer models needed to be fed with assumptions such as rational human behaviour, a choice for a discount rate, and monetisation of intangibles like the environment; these are all normative choices which should be made in the political realm (De Zeeuw et al. 2008). Monetising is popular because it can be done and is believed to produce 'objective' information. With CBA, quantification of information became fashionable, regardless of the accuracy of the produced numbers (Niestroy 2008), and despite arguments that cost-effectiveness analysis (CEA) would probably deliver more relevant information for environmental policy-making than CBA (Ackerman 2004). The big difference between economic and environmental/sustainability science is therefore not that the first have 'better' evidence, but that politicians tend to use predictions of economists as good evidence although they often turn out to be completely wrong.

Is the term 'evidence' then completely useless? Certainly not. The use of a typology of evidence (from 'beyond all reasonable doubt' to 'insignificant') is useful for assessing scientific research, and acknowledges the costs of being wrong, in both directions of a decision (i.e. acting and not acting) and, critically, on their distribution between groups and generations (Gee 2008). Gee also emphasizes the importance of the precautionary principle. This principle is fundamental in environmental policy (and for example laid down in Article 191 of the Treaty on the Functioning of the EU). The European Environment Agency recently published over 30 case studies on the impact (including the costs) of non-action by governments when more or less clear evidence was available and the precautionary principle was not applied (EEA 2012).

## 2. Cognitive dissonance, evidence and (meta)governance

The question is then why governments seem to favour '*evidence-based*' policymaking for sustainability challenges, whereas they *know* that this can lead to taking decisions which do not take into account uncertainty and unpredictability. Such behaviour is known in social psychology as '*cognitive dissonance*' (Festinger 1957), and is also observed in the form of the "human inertia that overrides sound logic and reason" with regard to global environmental problems (Salingaros 2011). Salingaros distinguishes 7 tactics for denying the truth:

1. The "Ostrich" technique — (Tuning Out, Selective Exposure).
2. The "Rhinceros" technique — (Source Derogation).
3. The "Eel" technique — (Displacement, Disputing Rationality).
4. The "Squid" technique — (Irrational Counterarguing).
5. The "Lizard" technique — (Selective Support, Attitude Bolstering).
6. The "Chameleon" technique.
7. The "Self-justifying Prosecutor" technique — (Inferred Justification).

Understanding the tactics is one thing, but the next step should be to understand some of the mechanisms behind this behaviour. Part of the answer can be found in governance theory. We will show below that the popularity of using the metaphor 'evidence' for knowledge is a function of the culture and traditions of administrative organisations and their political leaders. The culture and traditions are expressed in the predominant application of a governance approach with a specific appreciation of what usable knowledge or 'evidence' is.

In many administrations, the Weberian *hierarchical style* with its rational belief in facts, authority and coercion has been the main style, until in the 1980s in Western countries a new

rational style emerged which was based on market principles (like cutting down 'red tape', introducing competition) and business methods (like CBA). This *market governance* style was combined with hierarchical governance into New Public Management (NPM). Evidence-based policymaking was born from this happy marriage in Anglo-Saxon countries and found a warm welcome in many other countries.

NPM produced more efficient, but not always more effective administration, as this line of thinking has difficulties to deal with wicked problems. In 'Willingly and Knowingly', an analysis of 5 cases of problematic decision-making in the Netherlands, it was concluded that the rational focus blocked the understanding of complexity and values in the discourses on the proposed decisions (In 't Veld (ed.) 2000). It was also concluded that joint fact finding (JFF) processes would probably have resulted in much less delays and conflicts than had happened in the investigated cases.

The report 'Willingly and Knowingly' was also an acknowledgement that during the 1990s a third style of governance emerged that was better equipped for dealing with complexity, uncertainty and the wish of societal stakeholders to be involved in political decision-making: *network governance*. Network governance came up in the form of more pro-active stakeholder participation, which was among others a reaction to societal pressure, but this produced some anxiety among politicians and public managers. The consequent clashes between the hierarchical and the network approach have been described by e.g. Meuleman (2003). Tensions also emerged in the 1990s with the advocates of market governance, for example on the value conflict between trust and price.

Although the 'governance = network' and 'governance = anti-state' theorists are influential in several countries (which coincides with their research focus on complex social problems), a strong majority among political scientists seems convinced that a governance concept that includes all governance styles under one umbrella has much more analytical power than single approaches (e.g. Peters 1998; Kickert 2003; Thompson 2003). Such a broad definition of governance is "the totality of interactions of governments, other public bodies, the private sector and civil society, aiming at solving societal problems or creating societal opportunities" (Meuleman 2008). Another, similarly neutral definition which also focuses on the relational dimension of governance is that governance is "a collection of normative insights on the organisation of influence, steering, power, checks and balances in human societies" (in 't Veld 2011).

	Hierarchical governance	Network governance	Market governance
Epistemological lens	Natural-structuralist	Hermeneutic-structuralist	Naturalist-agency
Theoretical background	Rationalism, Positivism	Social constructivism, social configuration theory, contingency theory	Rational choice theory, Public choice, Principal-agent theory
Mode of calculation	Homo hierarchicus	Homo politicus	Homo economicus
Usable knowledge	Authoritative knowledge	Agreed, shared knowledge	Cost-efficient knowledge
Relations	Dependent	Interdependent	Independent
Actors	Subjects	Partners	Clients
Coordination through	Control and authority	Trust and empathy	Price
"Dark side"	Abuse of power Nepotism	Abuse of trust Manipulation	Abuse of price and individualism Corruption

Table 1. Different views on the governance of knowledge (Source: Meuleman 2010:205).

The different governance styles interact and can support but also undermine each other's efficacy. One of the dozens of differences between the three basic styles of governance (hierarchical, network and market governance) concerns knowledge (Table 1). The three styles have different assumptions about what useful knowledge for decision making is. This goes back to the epistemological foundations of the styles: they stem from different cognition theories. It has been argued that they have "incompatible contentions about what is knowable in the social world and what does or can exist – the nature of being – in the social world". Moreover, they "derive their governance 'certainties' from propositions drawn from specific methodological families, which reflect particular configurations of epistemological and ontological perspectives" (Dixon and Dogan 2002:191). Politicians and public managers who are committed to hierarchical governance see the social world through a naturalist-structuralist lens, those committed to network governance see the social world through a hermeneutic-structuralist lens, and those committed to market governance see the social world through a naturalist-agency lens (Dixon and Dogan 2002: 184–185).

The three basic governance styles possess typical drawbacks. Hierarchy uses power and imperatives to achieve goals, and its weak spot is the possible abuse of power. This can be illustrated by the observation that countries/governments/cultures with a strongly hierarchical governance style tend to be more susceptible to nepotism than for example governance systems with more democratic checks and balances. The drawback of network governance is the opposite of trusted behaviour, namely manipulation. Manipulation requires the same insight into interactions between people as trusted behaviour, but it is an abuse of trust. Market governance can result in an abuse of the central role of price and individualism, namely corruption: self-organisation leading to self-enrichment.

Governance approaches are always normative: they are based on certain combinations of values and traditions which are popular with decision-makers. The core thinkers in Ministries for infrastructure, for example, tend to prefer rational values and traditions which are essential in hierarchical and market governance, and favour the 'engineers discourses' (Hoppe and Huijs 2003), even in a country with a centuries-long tradition of underlying network governance like the Netherlands (Kickert 2003). Environment Ministries tend to realise that their success depends on the integration of environmental concerns in other sectors and on intense stakeholder involvement, and consider network governance an important part of the governance pie. Where such Ministries have been merged, like in the Netherlands in 2010, a clash of cultures can be observed.

In order to address the tensions between the governance styles, we need the concept of *metagovernance*, which was coined by Jessop in 1997. Metagovernance is 'producing some degree of coordinated governance, by designing and managing sound combinations of hierarchical, market and network governance, in order to achieve the best possible outcomes' (Meuleman 2008). A 'metagovernor' accepts and understands the complexity and dynamics of the governance environment and strives for *dynamic* instead of *static* quality in terms of Pirsig (1991). A metagovernance approach is imperative for sustainable development (Christianopoulos et al. 2012: 305), as it can "bring together, through coordination, formal conventions and less formal agreements of what is acceptable and appropriate administratively and policy-wise, to solving complex issues in sustainable development".

To conclude this section: Successfully using knowledge to underpin sustainability policies requires an awareness of the normative character of governance approaches with regard to what usable knowledge is, and an approach to dealing with normative tensions, such as metagovernance.

### 3. Sustainability evidence and transgovernance

Metagovernance presumes an attitude that takes into account situational factors, but does not explain which situational factors are important in a sustainable development context. In the TransGov project of IASS (Potsdam), an answer to this question was developed by creating a framework combining several social science concepts that help understand what makes our societies tick the way they do. The theoretical building blocks are (In 't Veld 2011, Meuleman (Ed.) 2012):

- Knowledge democracy (the pattern of interactions between politics, science and media in which more interactive forms emerge, while the old forms co-exist)(In 't Veld 2010);
- Second modernity (the imperative that in our complex societies we should move from 'or' to 'and' – e.g. the concepts of glocalisation, fragementation -, by increasing variation and by allowing redundancy)(Beck 1992);
- Reflexivity (social systems are reflexive in nature and adapt to new circumstances; therefore, they cannot be forecasted and a high degree of uncertainty is a normal situation; therefore, governance should also be reflexive);
- Configuration theory (actors are usually 'multiply included' in groups with a certain conviction, and innovation tends to not come from the centre, but from those at boundaries of groups)( e.g. Van Twist and Termeer 1991);
- Transition theory e.g. the niche-regime-landscape model: Innovations are considered to emerge on project level, in 'niches'. If these innovations are successful, associated rules and other supporting mechanisms may constitute 'regimes'. Gradually, a transition 'landscape' will emerge in which niches and regimes are loosely linked (Grin, Rotmans and Schot 2010).
- Governance theory (in particular metagovernance): governance styles are normative and competitive and should be organised in situationally appropriate mixtures, adapted to e.g. problem types and culture and traditions (e.g. Meuleman 2008, 2012).

Using this 'basket' of concepts which, including their interlinkages, constitute the *transgovernance* framework, could help overcome some of the typical misconceptions and often-repeated dead end solutions, like the idea that only legally-binding agreements can be successful, or that cultures and traditions are a hindrance rather than part of the solution. In the discussion on whether the often-observed 'fragmentation' of global environmental governance is a sign of duplication or complementarity (Ivanova and Roy 2007), a transgovernance perspective would probably favour the latter.

### 4. Discussion: towards early warning systems against cognitive dissonance?

Politics, policies and polity are all normative. For *politics* and *policies* this is obvious, but not all political practitioners are aware that political and administrative institutions – the hardware' or *polity* – are crystallisations of a normative vision on societal problems and their solutions which was powerful at a certain time and place. As their establishment and abolition can take many years, institutions are almost per definition not optimally adapted to their remit. There is a certain analogy with the famous 'Peter Principle' (Peter and Hull 1969) that predicts that in hierarchies people are always promoted to the level of their incompetence: institution-building takes so much time that institutions are often already incompetent when finally in place. Politicians also usually have an embedded preference for a specific governance approach, which can lead to conflicts with situation-driven leadership. Their preferred governance approach fits with their world views and, according to Rayner (2012), knowledge which is in tension or outright contradiction with those versions will be expunged. Such

‘uncomfortable knowledge’ is kept at bay through denial, dismissal, diversion and displacement.

This leads to the question if decisions prepared on arms-length or even further away from politics are automatically better underpinned with knowledge. The answer should be negative, as also researchers use values, traditions and assumptions when they make choices while collecting and interpreting data and choosing the parameters for their models. Such assumptions are seldom included in scientific reports written for political decision makers, although we once noticed a discount rate – a critical value determining the result of cost-benefit analyses (CBAs) – disclosed as a footnote in one of the annexes to a CBA report.

There are advantages, however, to have a more or less independent, not politically dominated phase during the process from collecting data to using knowledge. This might make a long-term view and the study of cumulative and indirect effects more feasible than in the short-term world of immediate results. The challenge, therefore, is to find ways to be more transparent about the values, traditions and scientific assumptions of knowledge production and to create mechanisms that give early warnings for the emergence of a state of cognitive dissonance with regard to ‘sustainability evidence’. What could be elements of such institutional innovation?

- Firstly, an *ex ante* Impact Assessment procedure like the European Commission has in place, is often considered as a good example (e.g. Feretti et al. 2011)).
- Secondly, we could follow the suggestion of Rayner (2012) that “‘clumsy’ arrangements may need to be constructed to ensure that uncomfortable knowledge is not excluded from policy debates, especially when dealing with ‘wicked problems’ where the accepted version excludes knowledge that is crucial for making sense of and addressing the problem”. Such arrangements can be placed inside or outside administrative organisations. The internal solution can be easily *silenced* by the powers that be, but has the advantage that it is more visible. The external solution – a function sometimes fulfilled by sustainability advisory councils – can be easily *ignored*, but has the advantage that external influence can be developed.
- Thirdly, the development of a configuration approach as proposed by Jungcurt (2012) aims to overcome the weaknesses of boundary work between science and society, by allowing the positioning of boundary work institutions with regard to their degree of politicisation and mode of representation. Such an approach could yield a more systemic understanding of boundary work for international sustainable development decision-making.
- Fourthly, we need to invest more in capacity building on all levels of government, in order to better deal with complexity, reflexivity and transparency (Niestroy 2000) and to raise awareness of problems like organisational cognitive dissonance with regard to the quality of ‘evidence’ for sustainability governance.

For the research agenda, I would like to suggest projects aiming at

- Designing a variety of early warning mechanisms for the abuse or mis-use of knowledge for sustainable development; a variety, because one-size fits-all does not work in a normative environment;
- Developing procedures which ensure that normative assumptions behind knowledge become subject to democratic decision making, or at least make them public.

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